

CALIFORNIA'S MIDDLE GRADE STUDENTS



Do you remember being 13 years old? Worrying about who you would sit with at lunch, whether you had the right clothes, or how you would be perceived on the first day of school? Perhaps you can also recall a favorite teacher or two, or a class where you learned you were good at math or English or music?

Students in the middle grades—grades 6, 7, and 8—still go to school with that same blend of self-consciousness and enthusiasm. To some degree it is a function of biology. Early adolescents, between the ages of about 11 and 14, are going through some of the most rapid and dramatic physical, emotional, and social changes of their lives. They often feel self-conscious and awkward. Hormonal surges can cause problems with concentration, fatigue, and mood swings as well. It is a time of social insecurities and positioning as students test limits and begin to develop their own identities. Relationships with friends, peer popularity, and their own physical appearance are often the highest priorities.

Even as young adolescents' bodies and social perceptions are changing, their intellectual capacity for abstract thinking and critical analysis is broadening. That

can make the middle grades an exciting time academically. Youth gain the ability to plan for the future and are genuinely curious to acquire knowledge for themselves rather than just accepting information offered by adults. It is a time of intense exploration for most students. The challenge for educators is to harness students' attention and enthusiasm amidst the many distractions.

Some say teachers and administrators who want to work in middle schools are a special breed. Certainly the students' developmental changes generate a unique dynamic on campus. Middle grade educators must accept and work with a wide range of behaviors or "styles" while engaging students, encouraging them to develop their unique talents, and preparing them academically for high school.

California's academic standards, adopted in the late 1990s, increase the expectations for what students in grades 6–8 should learn and be able to do. In addition, they set a new expectation that all middle grade students in every school in California should have access to the same rigorous core curriculum. Strengthening schools and student learning in the middle grades is essential to meeting the state's goals for student

success in completing a more rigorous high school curriculum and passing the California High School Exit Exam.

This EdSource report examines how middle grade students are performing against those new expectations based on state and national tests. It includes an in-depth examination of progress on the important task of getting more students to take and master algebra in 8th grade. This report also addresses some of the issues most important to improving student achievement in the middle grades, including strategies for engaging this age group, debates on how best to handle transitions into and out of middle school, and the extra resources needed to help all students be more successful. Finally, the report looks at the qualifications of that special group of California educators committed to helping these young adolescents begin to find their way in life.

California's middle grade students are changing

The sheer number of middle grade students and their changing profile are presenting new challenges to middle schools throughout California. Out of the state's 6.2 million public school students in 2002–03, 1.4 million were

in the three middle grades. That number is comparable to the entire K–12 population in Georgia.

Throughout the late 1990s, the number of children in California's elementary schools was increasing. Most of those students are now in middle school. As a result, the number of students in grades 6, 7, and 8 has grown by 24% in the last decade. High schools have grown at an even faster clip—by 30%. Meanwhile, student population growth in grades K–5 has been at about half the rate of the middle grades, reflecting a general slowdown in California's growth rate.

Enrollment growth in the middle grades has varied by region as well, with not all areas of California affected equally. For example, Riverside and Orange counties have seen significant growth. Meanwhile, the Bay Area has experienced no growth, and some northern rural counties have seen a slight decrease in their middle grade populations.

Even more marked than the increasing number of middle grade students is

their changing ethnicity. In 1997–98, students in grades 6–8 were 41% white and 39% Hispanic. Five years later, those proportions had changed substantially, with the white population decreasing to 35% and the Hispanic population increasing to 44%. The proportion of other ethnic groups in the middle grades remained relatively steady. Given the ethnicity of students currently in kindergarten to 5th grade, it is clear that this trend will continue for the foreseeable future. In 2002–03 elementary students were 31% white and 49% Hispanic. This is significant because

student performance data show that California's Hispanic students are less successful academically than their white and Asian counterparts and they represent such a large portion of the student population. If California's middle schools are to meet the state, federal, and public expectations for increased student performance, they will have to improve their ability to teach Hispanic students.

Are middle grade students meeting higher academic expectations?

Since 1997 the standards movement has driven education reform generally in

Consider these caveats regarding the CST data

Although California Standards Test (CST) data help paint a picture of middle school achievement, there are limitations:

1) Two years of data is insufficient for drawing conclusions about student performance trends. While California has had statewide testing since 1998, it just completed the transition to standards-based tests in 2002. This change successfully aligns testing with state content standards, but an unfortunate result is that the state cannot currently look at student performance trends over an extended time period. Scores on the CSTs are available since 2001 in English and 2002 in math.

2) Conclusions about California's small population subgroups are tentative at best. Asians and African Americans represent only 8% and 9% of the middle grades population respectively—or 112,000 and 126,000 students. So, for example, 6th grade African Americans total approximately 42,000 students. A 1% test score increase represents only 420 students, a small sample from which to draw conclusions about student performance. While the middle grade English learner (EL) population of 308,000 students is larger, it presents a similar issue.

3) The way English learners are counted makes it difficult to track the progress of this group. California uses an English learner's performance on the English CST as one criteria for putting that student in the EL subgroup. Thus, by definition, English learners do not score at the proficient or advanced levels on this test. Those students who are successful in learning English are eligible to be redesignated by local districts as "English proficient." When that happens, their test scores no longer contribute to the English learner "proficient and above" test score category.

4) From 1999 to 2002, California students also took the Stanford-9, a norm-referenced test that compared their performance to a national sample. However, in 2003 the state began using a different and shorter test—the CAT/6 survey—for this purpose. Thus current trend information is not readily available. The state also reduced substantially the weight this test carries in the calculation of schools' Academic Performance Index (API). These test scores are not used at all for determining Adequate Yearly Progress (AYP) under the federal No Child Left Behind Act (NCLB).

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Vital Statistics: The changing profile of California's middle grade students

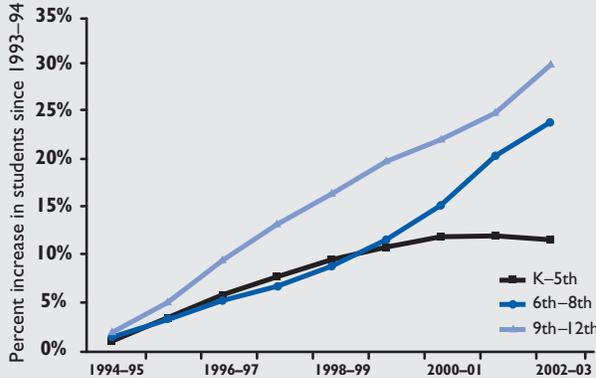
Number of middle grade students

1.4 million out of California's 6.2 million K-12 students.

Over the past 10 years, enrollment in grades 6-8 in California has increased by approximately 285,000 students, or 24%, compared to 12% in grades K-5 and 30% in grades 9-12. The children who previously swelled California's elementary school ranks are growing up.

The number of middle and high school students is growing

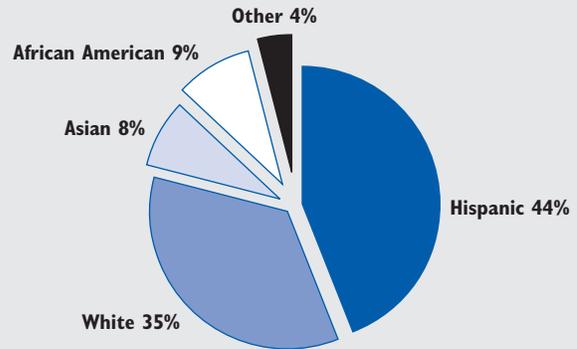
Percent increase in K-5th, 6th-8th, and 9th-12th enrollment since 1993-94



DATA: CALIFORNIA DEPARTMENT OF FINANCE

Hispanics and whites predominate in the state's middle grades

Ethnicity of California's middle grade students (grades 6-8) in 2002-03



"Special needs" populations in 2002-03

Students in poverty* (who are enrolled in the free/reduced price meal program)

Elementary schools	56%
Middle schools	49%
High schools	34%

Limited English proficient students

Grades K-5	33%
Grades 6-8	22%
Grades 9-12	16%

*According to the CDE, percentages decrease as students age because adolescents feel stigmatized by the free meals designation and avoid it. Data is based on the CDE Public School Directory's designation of a school as elementary, middle, or high.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE)

The percentage of white students has decreased while the percentage of Hispanics has increased in all grades, including middle grades

	Enrollment by grade level and ethnicity in 1997-98 and 2002-03									
	White		Asian		African American		Hispanic		Other*	
	1997-98	2002-03	1997-98	2002-03	1997-98	2002-03	1997-98	2002-03	1997-98	2002-03
K-5th	38%	31%	7%	8%	9%	8%	42%	49%	4%	4%
6th-8th	41%	35%	8%	8%	9%	9%	39%	44%	4%	4%
9th-12th	41%	38%	9%	9%	8%	8%	37%	40%	4%	5%
Statewide	39%	34%	8%	8%	9%	8%	41%	45%	4%	4%

*Includes Filipino, American Indian, and Pacific Islander.

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California, including reform in the middle grades. In 1999 California's Board of Education outlined the state's commitment and expectations related to academic standards stating:

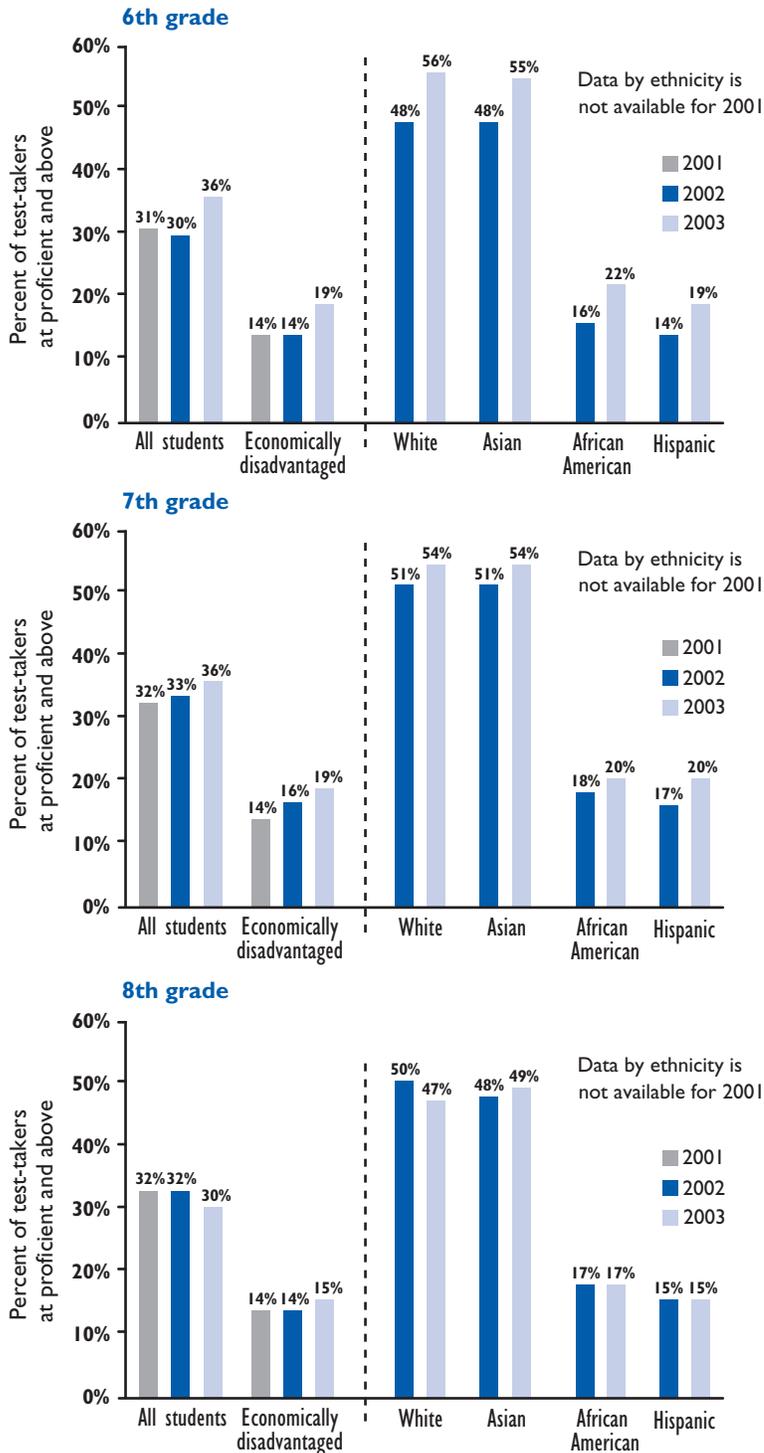
"These standards are rigorous. With student mastery of this content, California schools will be on a par with those in the best educational systems in other states and nations... Fifteen years

from now, we are convinced, the adoption of standards will be viewed as the signal event that began 'a rising tide of excellence' in our schools."

Some evidence indicates that the state's reform efforts are indeed making a difference in middle schools. Human Resources Research Organization (HumRRO), the independent evaluator for the California High School Exit

Exam, reported in May 2003 that coverage of the standards increased dramatically in middle and high schools between 2001 and 2003. Results on the state's standardized tests show progress as well. The performance of California's 8th graders on the National Assessment of Educational Progress (NAEP), often referred to as the nation's report card, also shows progress.

figure 1 English language arts CST scores for 6th and 7th graders are improving, but 8th grade scores are not—and achievement gaps persist



DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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An emphasis on reading may be paying off, but results are mixed

Students who managed to progress through elementary school without learning the fundamentals of reading are asked in the middle grades to comprehend complex texts, such as those in science or history, and to do more sophisticated work in English language arts. At this level, students' inability to read affects their achievement in almost every subject. Yet many middle grade students fall short in terms of basic literacy.

In addition, 22% of middle grade students are formally identified as English learners (ELs) or limited English proficient (LEP). Schools face additional challenges in making sure these students have the English language and reading skills they need to successfully master the rest of the curriculum.

These problems have received increased attention in recent years. Many California middle schools now test incoming 6th graders to determine reading levels and then address skill deficiencies accordingly. Schools are implementing a variety of strategies to assist poor readers. In addition, state officials have adopted curriculum programs aimed at the problem, including five different intervention programs for struggling readers in grades 4–8, plus four programs that focus on reading curriculum for English learners in grades 6–8.

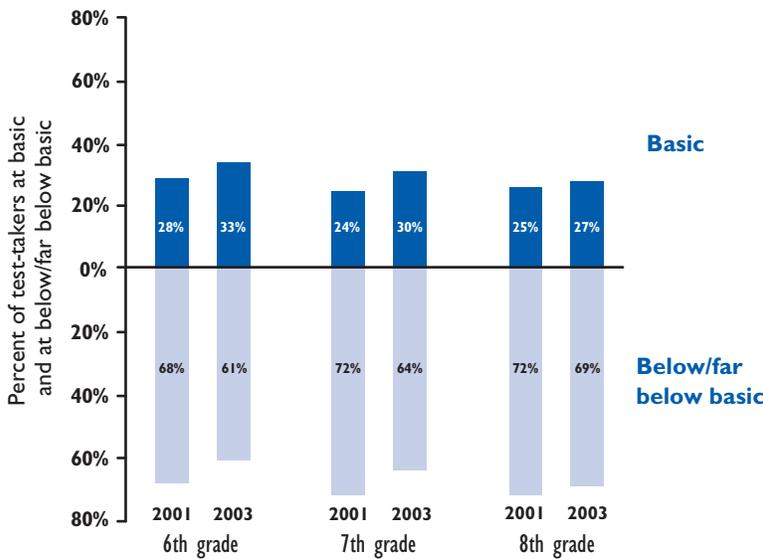
California Standards Tests (CSTs) in English language arts show variation by grade level

Test scores on the CSTs in English language arts provide a measure of the challenge and the progress made so far. (See the box on page 5.) Three years of results are available for 6th, 7th, and 8th grade students generally, for those who are low income, and for English learners. Data by student ethnicity is only available for 2002 and 2003.

The scores indicate that 6th grade students have made the most improvement. (See Figure 1.) The percent of students scoring proficient or advanced increased from 31% in 2001 to 36% in 2003. This increase represents about 20,000 students. Scores for economically disadvantaged students also increased by five percentage points. Data by ethnicity for the two years available indicate that all groups had gains, but white students had the greatest increase.

For 7th grade students, the gains in percent proficient are also notable—increasing from 32% in 2001 to 36% in 2003. At this grade level, the increases in performance of economically disadvantaged students exceeded that of students as a whole by one percentage

figure 2 | English learners make progress on English language arts CST from 2001 to 2003



Note: Once students score proficient or above on the English language arts CST, they are usually no longer considered English learners.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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point. The 2002 and 2003 data show increases across all ethnic groups, ranging from two to three percentage points.

Unfortunately, the performance of 8th graders tells a more disappointing story. Between 2001 and 2003, the percentage of all 8th graders who scored proficient or advanced actually decreased from 32% to 30%. In addition, the portion of students scoring below the basic level increased from 33% to 35%. Interestingly, from 2002 to 2003 performance among white students declined, while the performance of African American and Hispanic students held steady. The percentage of Asian students and students from low-income families both increased by one percentage point.

Performance gaps based on student characteristics remain

While the limited test data available indicate that, in general, student subgroups in the middle grades are

making progress in English language arts, the achievement gap between the groups is still stark. White and Asian students perform at much higher levels on the CSTs than their African American and Hispanic counterparts. English learners and economically disadvantaged students also perform much more poorly. This is true not only in the middle grades, but also for students in all grades throughout California.

English learners, however, provide an encouraging story of progress if one looks at those who perform below the basic level. Across 6th, 7th, and 8th grades, the data show an increase in the percentage of students in the basic category and a corresponding decrease in the below-basic and far-below-basic groups from 2001 to 2003. (See Figure 2.) The data provide important information about the progress of English learners because of the way these students are identified and tracked. As explained in the box on page 2, once

students reach proficiency on the CST in English, they are usually not included in the English learner group.

California raises the bar in mathematics

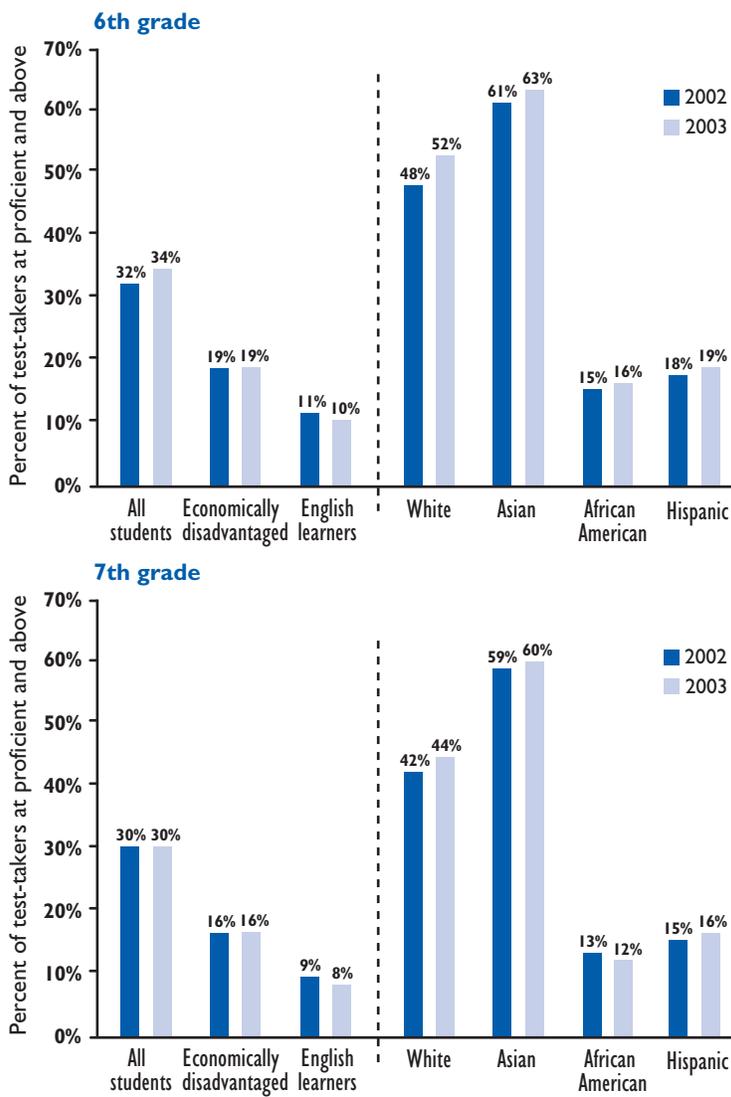
The state's new math standards may be causing the biggest instructional changes—and the most consternation—at the middle grades. It all began in 1997 when the State Board of Education adopted academic content standards that established mastery of Algebra I as the expectation for all 8th graders. In 2000 state lawmakers specified that, starting with the class of 2004, California public school students had to pass Algebra I to earn a high school diploma. (Previously state graduation requirements simply required two years of mathematics and did not specify course content.) In addition, some algebra content is also included on the California High School Exit Exam that students will have to pass to graduate starting in 2006. This change was consistent with findings about the importance of algebra instruction for all students. Studies show that algebra helps students learn abstract thinking skills, which are applicable to many subjects, and

Students receive one of five possible scores on California Standards Tests:

- Advanced
- Proficient
- Basic
- Below basic
- Far below basic

The state's goal is to consistently improve the proportion of students scoring at the proficient and advanced levels, and to do so across all subgroups of students. NCLB sets up the expectation that the state will reach 100% proficiency among all subgroups by 2013-14 in both English and math.

figure 3 | On the General Mathematics CST, 6th graders rise slightly while 7th grade scores remain flat



DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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increases the probability that students will attend college. (See the EdSource supplement, *Middle Grades: The challenge of meeting high expectations*.)

This was a big change in expectations for middle and high schools in California. It seems to have had a rapid and far-reaching effect statewide, most notably in terms of the proportion of 8th and 9th graders who take Algebra I. The impact on student performance is less clear.

CST results in general mathematics show modest increases

All 6th and 7th grade students take a grade-level CST in general mathematics. According to the first two years of data, scores for 6th grade students have increased slightly. (See Figure 3.) The percent proficient or advanced increased from 32% in 2002 to 34% in 2003. Among student subgroups, white students' scores increased four percentage points. By comparison, African American and

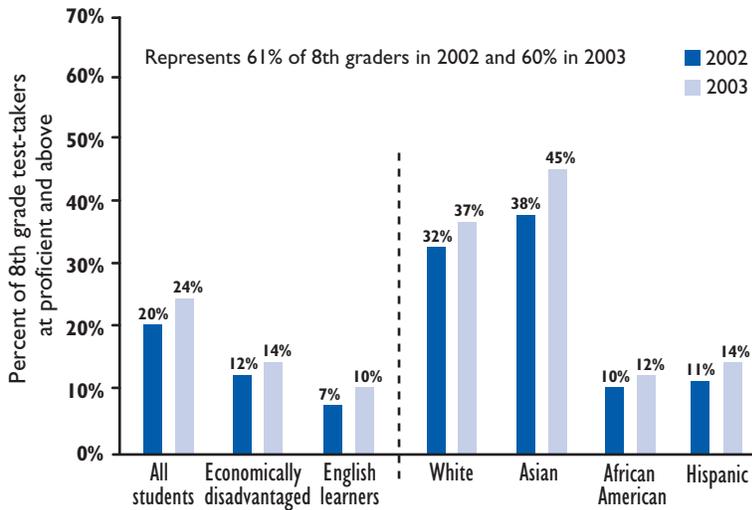
Hispanic students realized gains of just one percentage point, and Asians improved by two. English learners decreased by one percentage point, and economically disadvantaged students showed no change at the top levels of performance from 2002 to 2003. In both groups 2% fewer students scored below and far below basic.

Among 7th grade students, performance changed little from 2002 to 2003. The total percent proficient or advanced remained at 30% for all students. While white, Asian, and Hispanic student subgroups all increased somewhat in terms of the percent proficient or advanced, the performance of African American students fell slightly. The percentage of economically disadvantaged students in the proficient and above category did not change, and English learners decreased slightly. Of note, however, were the lowest-performing segment's scores. Among English learners 3% fewer students scored below or far below basic. Among economically disadvantaged students that decrease was 4%.

California's 8th graders take the CST aligned with the math course they are completing. In 2003, 60% of 8th graders took the general math CST, indicating they would not complete algebra. The percentage of all 8th graders taking this test stayed relatively stable between 2002 and 2003, with 61% having taken it in 2002. Presumably, students are in this group based on the judgment of school officials and teachers that they are not ready to take on the regular one-year course in Algebra I in 8th grade.

The 8th grade general math test scores show the portion of students scoring proficient or above increasing from 20% in 2002 to 24% in 2003. (See Figure 4.) In addition, the portion of students who scored below the basic level decreased from 46% to 44%. Here again, performance among English learners and economically disadvan-

figure 4 | **8th grade scores on General Mathematics CST show gains**



DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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tagged students is of note. The proportion performing below the basic level decreased four and five percentage points respectively.

The number of students taking algebra in 8th grade has doubled

It is possible to track the number of students taking algebra by examining the numbers of students taking the Algebra CST in a particular grade. Based on this method, it appears that a substantial change has taken place over the last few years in the number of students taking algebra in middle school.

In 1999, the first year California administered course-specific math tests to 8th graders, just 16% of them took the test for Algebra I. This was about four months before the state established the new algebra requirement for high school graduation and thus serves as a good baseline for looking at how that mandate has changed the math curriculum in California's middle schools. Since 1999 the percentage has risen steadily and had doubled as of 2003, when 32% of 8th graders took the Algebra I CST.

Some school leaders say that the 8th grade test-taking statistics do not tell the full story and that more students are taking algebra than these numbers alone indicate. Concerned about students' readiness for algebra, many schools have started some of their 8th graders in a slower-paced algebra class that breaks the course content down into a three- or four-semester curriculum. Students complete half the course in 8th grade and the other half the following year. These students would take the General Mathematics test in 8th grade and the Algebra I test in 9th grade when they finish the full course. The CST data also show that the portion of 9th grade students taking Algebra I has increased as well, from 21% in 1999 to 37% in 2003.

The cumulative percentage of 8th and 9th grade students taking Algebra I is increasing steadily. The data seem to indicate that over the course of the two years from 2002 to 2003, for example, more than two-thirds of students in the class of 2006 may have completed the course. However, shortcomings in California's data system—specifically

The performance data for American Indian, Filipino, and Pacific Islanders are also available

Performance data in this report exclude information about the state's three smallest student ethnic categories: American Indian, Filipino, and Pacific Islander. Collectively, these groups make up about 4% of California's total K-12 student enrollment and likewise its middle grade enrollment. In grades 6 through 8, American Indians make up 0.9% of students, Filipinos 2.5%, and Pacific Islanders 0.7%.

While the overall numbers are small, certain counties and school districts across the state have larger percentages of these students. For example, American Indian students represent a larger minority in the sparsely populated northern counties, up to 14% in Del Norte County. Filipino students are found in larger concentrations in the San Francisco Bay Area and in San Diego County, representing 9.4% of students in San Mateo County. The population of Pacific Islanders is both smaller and more diffuse, with the highest numbers in San Mateo County where they still represent just 3% of students.

In terms of student performance, these three groups scored lower on the California Standards Tests (CSTs) in 2003 than whites and Asians as a whole, but higher than Latinos and African Americans. Further, of the three groups, Filipinos consistently score the highest with both American Indians and Pacific Islanders roughly on a par but scoring substantially lower. These trends are true across all grade levels and for both English and math. For 8th grade algebra participation, the American Indian students are markedly below either group, with just 23% of students taking the Algebra 1 CST in 2003, compared to 31% of Pacific Islanders and 45% of Filipinos.

figure 5 | 8th and 9th grade Algebra 1 participation grew from 1999 to 2003

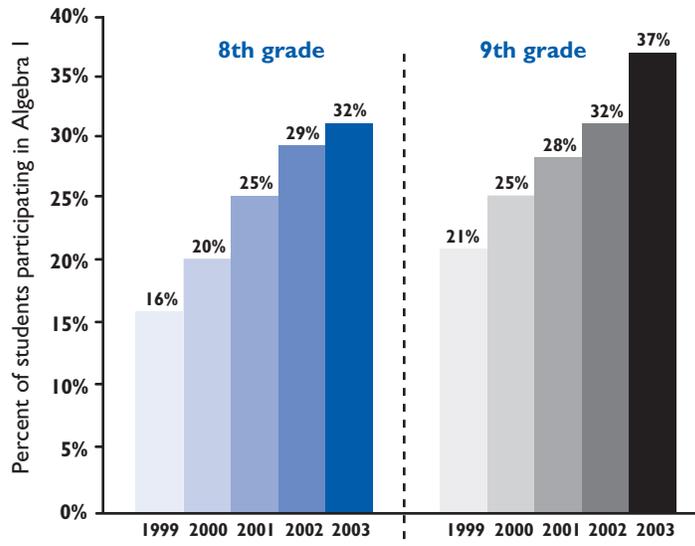
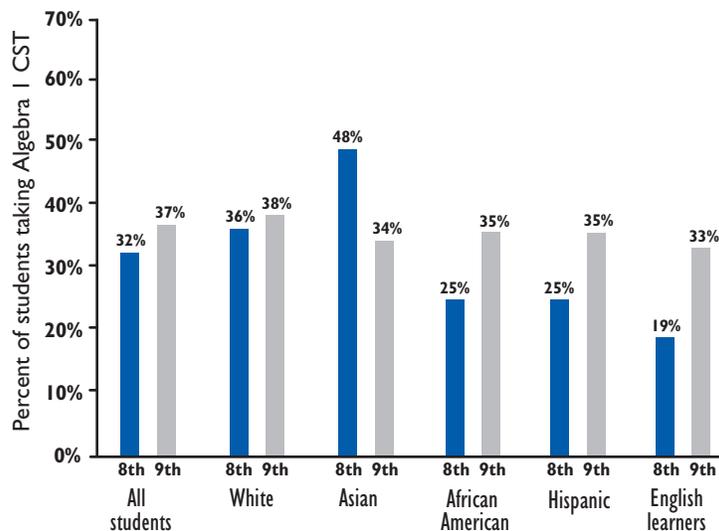


figure 6 | 2003 participation rates in Algebra 1—based on ethnicity and language—show dramatic differences



Note: Economically disadvantaged student participation rates cannot be disaggregated by grade level.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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the absence of unique student identifiers—mean that the state cannot track student progress from year to year. Thus it is impossible to determine whether a significant number of students failed Algebra I in 8th grade in one year,

which would inflate the course-taking statistic for 9th grade the following year. (See Figure 5.)

Based on student background, there are dramatic differences in which students take algebra. (See Figure 6.) The 2003

data for both 8th and 9th graders indicate that Hispanic and African American students were less likely to complete Algebra I as 8th graders. However, the percentages that did so in 9th grade were substantially higher. The same is true of English learners. (Comparable grade-level data for economically disadvantaged students are not available.)

Algebra test results show a little progress toward closing a sizable gap

In 2003, 39% of the 8th graders who took the Algebra I CST scored proficient or above—the same as the year before. However, while white students as a subgroup showed no change, the proportion scoring at that level in each of the other major ethnic subgroups increased by two percentage points. English learners and low-income students showed the same improvement. (See Figure 7.)

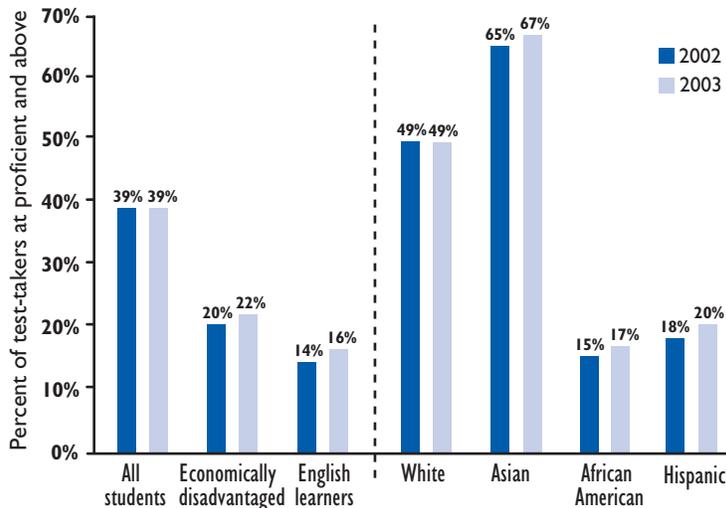
While these changes in performance for African American and Hispanic students in particular are encouraging, they fall well short of closing the overall achievement gap for these groups. While 49% of the white students—and an impressive 67% of the Asian students—who took the algebra CST in 8th grade scored proficient or advanced on the test, just 17% of African American and 20% of Hispanic 8th graders who took the test scored at that level.

Helping all students succeed in algebra is a daunting task for California's middle school math teachers, particularly when many do not have training in math. However, the importance of this course for the ultimate success of California's diverse student body is clear, and thus the progress to date is of note.

NAEP scores put California's progress into a national perspective

The California Standards Tests are one measure of student performance, but

figure 7 Performance of 8th graders by subgroup in Algebra 1 reveals a huge achievement gap



Note: The fact that all students' performance remained the same while most subgroups grew is likely the result of a statistical phenomenon in which subgroups show one trend while the aggregate for the entire group shows another.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), STAR

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comparisons to the nation as a whole can also be informative. The National Assessment of Educational Progress (NAEP) includes nationally administered tests taken by a sample of 4th, 8th, and 12th grade students in every state. Until 2002 the tests were only given periodically, but now they are administered annually. The results are reported by state and by subgroup. Like California's CSTs, the NAEP results are stated as proficiency levels. However, the NAEP tests are not directly aligned with the state's academic content or performance standards.

California has participated in NAEP since its inception and as a result has 8th grade math scores from as early as 1990 and 8th grade reading scores from 1998 on. (See Figure 8.)

- For math, the scores show progress. Only 13% of California's students scored proficient and above in 1990; while in 2003, 21% of California's students hit that mark. This eight-point improvement, however, lags

behind the national growth of 12 percentage points, from 15% of 8th graders proficient or above in 1990 to 27% in 2003.

- In reading, 21% of California's 8th graders scored proficient and above in 1998—a figure that increased by one percentage point in 2003. Nationally, 30% of 8th graders scored proficient or above in both 1998 and 2003.

NAEP results are often used to criticize California's academic performance, and though the state's improvement is encouraging, student achievement is certainly not at the level desired. On the surface, California does not compare favorably to many other states. Based on 2003 NAEP data, California's 8th graders lag behind the national average, with 6% fewer scoring proficient or advanced in math and 8% fewer doing so in reading. The three states with which California is most commonly compared because of their size and student demographics—New York, Florida, and

Texas—are all ahead of California in the percent proficient and above.

To fully weigh California's performance, however, it is important to note that the sample of students taking the test varies by state and over time in ways that may skew these comparisons against California. In the 1990s, NAEP inclusion/exclusion rules led California to exclude many English learners and Special Education students from taking the tests, while many other states chose to include those student populations. In recent years, California has followed state rules for inclusion and has included many more English learners and Special Education students in the NAEP samples. It appears that other states have done the opposite, excluding more of these populations from their NAEP test-takers. This shift may contribute to California's NAEP gains appearing less favorable than those of other states.

Added to this sampling issue is the fact that California schools have a more challenging job to do because of the state's student demographics. As the data in Figure 8 on page 10 indicate, while 8% of 8th graders nationwide are English learners, 24% of California's 8th graders fit that description. Texas, the state with the next highest percentage, has just 14% of its students classified as English learners. Ethnic diversity also presents unique challenges in California. The state has higher percentages of Asian and Hispanic students and substantially lower percentages of white and African American students than the national average. In addition, California has a third more students in poverty than is the case nationally.

Many also believe that inadequate school funding can affect schools' effectiveness and ultimately have an impact on student performance. Data from the National Education Association (NEA) compare California's expendi-

figure 8 | **NAEP results show California students have improved in reading and math but have not caught up with the national average**

	California	Nation
8th grade NAEP results*		
Math (proficient and above)		
1990	13%	15%
2003†	21%	27%
Reading (proficient and above)		
1998†	21%	30%
2003†	22%	30%
2001–02 Demographics*		
Enrollment by ethnicity		
American Indian/Alaskan	1%	1%
Asian/Pacific Islander	12%	4%
Black, non-Hispanic	9%	17%
Hispanic	41%	16%
White, non-Hispanic	40%	62%
Total free/reduced meal enrollment	46%	36%
Total English learner enrollment	24%	8%
2001–02 Resources**		
Students per teacher based on average daily attendance (ADA) in public schools	20.1	14.8
Average salary of public school teachers	\$54,348	\$44,683
Current expenditures for public schools per student (ADA)	\$7,324	\$8,087
Note: Average teacher salary not adjusted for differences in cost of living.		
†Accommodations permitted for certain students with disabilities or limited English proficiency.		

*DATA: NATIONAL CENTER FOR EDUCATION STATISTICS

**DATA: NATIONAL EDUCATION ASSOCIATION, *RANKINGS AND ESTIMATES*

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tures per pupil and use of its resources with that of other states and the nation as a whole. As Figure 8 indicates, the state's per-pupil expenditure in 2001–02 (the most recent year for which data are available) put California's expenditures well below the national average and below all of the comparison states except Florida. The data also show that California has placed a higher priority on paying its teachers well, a decision consistent with higher wages paid here to college graduates in other fields. As a result, the state had the highest average teacher salaries in the

country. Texas, a state that also is more limited in its expenditures per pupil, has placed more emphasis on small class sizes. With more resources at their disposal, neither New York nor Connecticut has faced that kind of trade off, instead providing both small class sizes and relatively high teacher salaries.

Varied strategies address student achievement in the middle grades

In order to get all students to meet high academic standards in literacy, math, and other subjects, middle grade educators, along with K–12 educators generally,

need to adapt their priorities and instructional practices. The state has set the stage for this by establishing high expectations for schools and students through aligned content standards, curriculum materials, standardized tests, and professional development programs for teachers and school principals. Turning these reforms into actual improvement in student achievement, however, requires that teachers have the opportunity to get the professional development they need plus ongoing support so they can successfully incorporate what they learn into their practice. In addition, schools need to provide extra support for students who are struggling. The extent to which the state of California is providing sufficient resources to make those things possible is questionable, particularly in light of current fiscal problems.

Many believe that middle schools face additional challenges. They must successfully engage this occasionally impulsive, unpredictable age group in school and help them stay focused in the midst of the distractions caused by the emotional and biological changes they are experiencing. Research, survey information, and prior experience provide guidance for middle grade educators, but few strategies are universally accepted. Most of the strategies for engaging these students require local educators and districts to address the way that students, teachers, and instruction are organized and to manage the transitions into and out of middle school. In addition, middle schools can benefit greatly from the availability of resources outside of the regular school program, staff, and budget—resources that help connect students to the community outside of school.

Many middle schools in California are actively implementing reforms, in the process doing exceptional work that

has contributed to the improvement of student performance in recent years. EdSource staff visited four such schools that state officials and California's Middle Grades Alliance identified in 2003 as "Schools to Watch—Taking Center Stage." (For more on this recognition program, see the box on page 15.) These visits helped inform this section of the report.

Student engagement is a central goal of middle school "best practices"

Middle school students are more independent than elementary school students yet not as mature and directed as high school students. As a result, they benefit from close connections with guiding adults who can keep the students' attention focused on academics while recognizing the demands created by their physical and emotional development. In a HumRRO survey of California middle school teachers, the teachers reported that student motivation was the greatest limitation on teachers' effectiveness—far beyond attendance, limited English, or a lack of materials and teachers. Effective middle schools organize their operations and programs with this challenge in mind. Some time-honored strategies to engage students include the introduction of elective classes or "exploratories" and extracurricular activities that enable students to develop special interests, such as music, drama, and athletics. Some schools emphasize service learning while others have strong mentor programs. Other schools are creating small learning communities or "schools within a school." The task of identifying and implementing effective strategies is ongoing and multifaceted.

While inquiries into ways to improve the academic achievement and social adjustment of young adolescents continue, a set of generally accepted "middle school best practices" has evolved. These practices directly address

Middle school reform began in the 1970s and 1980s

Middle grade schools today are attempting to provide a safe environment in which early adolescents can excel academically while also developing their own identities. This contrasts with the first junior high schools, started in about 1910, which were means to an end in preparing students for high school. As the name implies, the schools were seen as "mini" high schools. Administrators and teachers focused on academics without necessarily addressing the developmental complexities of early adolescents.

In the 1970s and 1980s, the focus began to change. Researchers stressed the importance of addressing the formerly ignored emotional and social needs of early adolescents trying on a variety of new roles and responsibilities. They also noted that junior high schools did not have a clear educational vision and that no curricular continuity existed between the elementary, middle, and high school levels. From these observations emerged the middle grade reform movement. In California the 1987 report—*Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools*—advanced these ideas as a blueprint for school reform. In 1989 the Carnegie Task Force on Education of Young Adolescents released *Turning Points: Preparing American Youth for the 21st Century*, a national report on middle grade education. With this literature in mind, California schools and districts began to adopt "middle school" philosophies and grade configurations (most notably 6–8) that contrasted with those of junior high schools (usually grades 7–9).

In the 1990s, standards-based reforms began to raise concerns about middle school achievement and specify expectations for what middle grade students should know and be able to do academically. In 2001 the California Department of Education (CDE) released *Taking Center Stage: A Commitment to Standards-Based Education for California's Middle Grades Students*, which focuses on how middle schools can use standards, assessments, and accountability to improve student achievement. This report also recognizes the need for developmentally responsive practices attuned to early adolescents. Many of California's middle grade principals and teachers currently use this document to guide their work.

In the last few years, an informal group focused on middle grade education formalized into the Middle Grades Alliance to provide an allied voice for middle grade education. The alliance includes representatives from the CDE and a variety of statewide organizations who work together on collaborative projects.

the challenge of engaging students of this age in ways that encourage participation and build confidence. They help students create cohesive, consistent relationships with caring adults. They provide students with opportunities to learn through hands-on experiences that appeal to their need for physical activity and through group learning experiences that allow for positive peer-to-peer interaction. And they create a serious but supportive environment that encourages students to recognize and build on existing skills, improve academic deficiencies, and take academic risks. These practices involve how curriculum, student-teacher

interactions, teacher planning, and time are organized.

Interdisciplinary teaming refers generally to an organizational structure in which a core of teachers across disciplines is assigned to the same group of students. A team typically consists of 60 to 100 students and teachers for two to five subject areas. Frequently, counselors, administrators, and resource specialists participate with these teams. The educators meet to plan an interdisciplinary approach to the curriculum, standards coverage, and student support and performance goals. In the process, they are also able

Vital Statistics: The schools that serve California's middle grade students

Number of schools

A total of 1,898 of California's 7,582 regular schools are designated by the California Department of Education (CDE)* as middle schools. (These numbers exclude alternative, community, continuation, juvenile hall, Special Education, and K-12 schools that have all 13 grades in one school.)

School configurations

The state does not have a set definition of a middle school. Instead, middle grade students attend schools with a variety of grade configurations. The pie chart shows that in 2002-03 the majority of students were enrolled in 6-8 schools, with 19% enrolled in schools with a 7-8 configuration. However, the remaining 26% of schools serving middle grade students had a variety of configurations, such as K-12, K-8, 5-8, 4-8, 7-9, and others.

Average school size

The average middle school* had 978 students in 2002-03. This average, however, masks vast differences, from 24 students in Nueva Vista International Middle School in Ventura County to 4,279 students at South Gate Middle School in Los Angeles County.

Average class size

Students in grades 6-8 have the largest class sizes, with an average of 29.5 students per class. This compares to a 21.5 student average in K-5 and 26.3 in grades 9-12.

Special circumstances

Multitrack year-round schedules are in place at about 6% of middle schools, compared to 14% of elementary schools and 2% of high schools.*

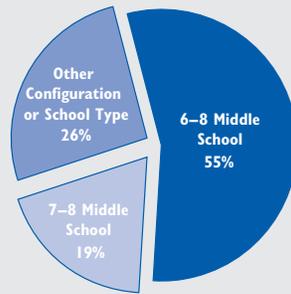
Of California's 446 charter schools in 2003, 37 are designated as middle schools, but 252 schools serve at least one of the middle grades (6, 7, or 8).*

*Data is based on the CDE Public School Directory's designation of a school as elementary, middle, or high.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), CBEDS

EdSource 3/04

6th through 8th grade enrollment by school type and configuration in 2002-03



to talk about particular students, plan strategies to address their individual needs, and communicate a consistent message to parents. Language arts/social studies and math/science teachers are often teamed together, but all four may be on one team. Teacher teams usually have a common planning period built into their schedules. The multidisciplinary approach engages students by providing cooperative learning opportunities and mirroring real life in ways that individual, unconnected subjects often do not.

This type of a smaller learning community helps young adolescents foster stronger relationships with teachers and their peers. The team or small-learning-community approach breaks down the anonymity, isolation, and lack of accountable learning that young adolescents can experience in large, more impersonal learning environments. According to California's 2001 report called *Taking Center Stage*, this approach is "widely considered one of the most important organizational characteristics of middle schools." For

example, a 2000 survey conducted by the Center for Prevention Research and Development at the University of Illinois at Urbana-Champaign found that schools that set aside time for this type of interdisciplinary teaming exhibited a more positive climate, a higher rate of contact with parents, higher satisfaction among teachers, and higher student achievement than schools that did not team. The four middle schools identified as "Schools to Watch" by the Middle Grades Alliance all used some form of interdisciplinary teaming.

Flexible scheduling refers to various scheduling strategies that depart from the classic model of a 55-minute class period for every subject every day. It may take the form of block, dropped, rotating, or alternate-day scheduling. The point is to allow teachers more creativity in planning their lessons in order to ultimately better engage their students. However, most agree that for flexible scheduling to work effectively, teachers must teach differently than if they had the shorter class periods.

With block scheduling, two or more periods in the day are combined to allow students more time with one teacher. This encourages deeper engagement in the subject matter and the higher level of critical thinking required by the state standards. Ideally, teachers use the longer periods to incorporate developmentally appropriate instructional approaches into their classrooms. These typically include hands-on activities, group work, interactions with the community, and project-based learning, such as producing a video or building a model. These approaches allow for the peer-to-peer interaction early adolescents crave, for physical activity that satisfies their fidgety side, and for intellectual stimulation suited to their curious nature. Alternate day schedules are a specific approach to block scheduling that offer half the classes each day in periods twice the normal length.

A number of other schedule options are common in middle schools. Rotating schedules offer classes one period later each day so, for example, students will not always have algebra at 8 a.m. Dropped schedules—which skip one class on a given day to allow longer periods, an advisory program, or additional skills instruction—may also provide departments or teams with a planning period.

According to a National Middle School Association (NMSA) research review on flexible scheduling, various studies in the 1990s found that most middle school educators recommended these practices, but few were using them. Interestingly though, three-quarters of exemplary middle school practitioners reported in surveys that flexible scheduling was moderately to well developed at their schools.

Coordination between schools helps support students through transitions

Studies indicate that the transition from one level of school to another can seriously disrupt academic progress for many students. After arriving from an elementary school to a middle school, for example, students face major adjustments. They typically go from working with one teacher and the same 30 students in a single classroom to a school with more students, multiple classes and teachers, and a more demanding curriculum. Upon leaving middle school, students must navigate a similar transition but to a high school environment where they are required to take on even more responsibility. The latter transition has received more attention and generally raises more concerns.

The transition to high school presents specific concerns

According to the NMSA, the transition to high school often leads to a decline in student attendance and performance,

Targeted support programs for middle grades are few in number

Almost no state or federal programs exist to assist middle grade students specifically. One exception is GEAR UP, which operates partnerships in approximately 70 out of the state's 1,898 middle grade schools. GEAR UP helps middle schools build capacity to prepare low-income students for college, including assisting the adults who influence those students, such as parents, counselors, teachers, and school leaders. It also provides tutoring and enrichment workshops in math and English. www.castategearup.org

Two other programs aim to increase the numbers of low-income students attending college, but they serve both middle and high school students. Advancement Via Individual Determination (AVID) offers an intensive in-school tutorial program focused on enhancing reading, writing, and math skills and encouraging students to take high-level courses. It operates in 1,000 of the state's middle and high schools. www.avidonline.org California Student Opportunity and Access Program (Cal-SOAP), administered by the California Student Aid Commission, serves 4th to 12th grade students. It offers tutoring and academic assistance to improve achievement while also providing guidance on how to gain acceptance and financial aid for college. Cal-SOAP projects serve 74 school districts throughout the state. www.csac.ca.gov/doc.asp?id=77

The impact of these programs is limited in part by their scope. Their combined budgets for 2003–04 totaled \$23.6 million to serve 1.4 million middle grade students, plus high school students. In addition, while their goals are similar, these programs are administered by different agencies and through separate funding streams. Their independent operation limits the possibility of synergy among programs in the same community and may create redundancies that further erode the effectiveness of this rather modest investment.

particularly if a middle-to-high-school transition program is not in place. While the school transition is difficult for students who already are struggling in school, it also is challenging for high achievers.

Several researchers have tackled this issue, attempting to identify possible solutions. Some have found that special transition programs can help. A 2002 literature review by the Southern Regional Education Board (SREB) cites studies showing that schools that implemented programs involving individual counseling, school visits, and special summer courses to help students familiarize themselves with high schools had significantly higher attendance and performance rates as well as fewer dropouts. Programs with effective transitions generally contain the following features:

- Middle school expectations that stress student responsibility for learning and behavior.
- Information about high school for middle school students and parents, including programs, choice of courses, rules, and websites.
- Social support, including getting to know older high school students in a “big sister/brother” style program, shared social events for incoming and current high school students, and shadowing or peer-mentoring programs.
- Meetings between middle and high school educators to exchange information about curriculum, courses, teaching practices, and curriculum planning.

Multiple researchers have also reported on the important role parents play in the transition to high school. When they are involved in the process of transition, parents tend to follow their

child's studies in high school better. Involvement may include meetings with their child and a high school counselor to discuss courses and schedules, visits to the high school, and encouragement to become involved in school activities. This participation by parents leads to better student performance, better adjustment, and higher rates of retention.

It appears that a student's peer group may also affect achievement. According to the SREB literature review, high achieving middle school students tend to perform better in high school if many of their peers go on to the same school. Conversely, low achieving middle school students tend to perform better in high school if few of their peers go on with them.

Does school configuration matter?

Ongoing disagreements about middle school configurations reflect the saliency of these transition issues as well as continuing questions about what combination of adolescent age groups in a school is most conducive to students' well-being and potential for academic success. In general, studies show that effective programs are more important than whether middle grade students attend a K–8, 6–8, 7–8, or otherwise configured school. However, some grade configurations are more consistent with middle school students' developmental needs, and each has its adherents.

Some educators and researchers support a K–8 approach, in part because it requires only one school transition. The SREB literature review cites research findings that a single transition from a K–8 school to high school leads to less achievement loss and a higher retention rate than the double transition first into and then out of middle school.

According to a NMSA literature review, when asked, 65% of principals across the country selected schools with

grades 6–8 as the ideal middle grade configuration. In 1987 California's *Caught in the Middle* report recommended that the state eliminate incentives for building grade 7–9 schools and increase incentives for building 6–8 schools. The support for the 6–8 configuration argued that students in these grade levels were developmentally more similar yet quite different from both 5th graders and 9th graders. The report also argued that a three-year time frame was needed to provide opportunity for strong, positive relationships between students and the adults on a campus. This recommendation, which was consistent with the national middle school movement as well, may have had an effect in California. Since 1983 the percentage of middle grade schools with a 6–8 configuration more than doubled, going from 31% to 70%. Conversely, the number of 7–9 junior highs declined dramatically, with only 12 such schools left operating in the 2003–04 school year. It is not clear that these changes were made for instructional reasons as opposed to more pragmatic financial or facilities considerations.

In any case, grade-level performance data on the California Standards Tests show little variation related to school configuration. But grade configurations and even school names do not always coincide with a school's educational approach. A school may call itself a middle school and be configured with grades 6, 7, and 8 but be more akin to a departmentalized junior high in its operation. Conversely, schools that still have "junior high" in their names and have a 7–8 or 7–9 configuration may operate under a middle school model. To the extent this is true, examining middle school performance data against grade configuration or school name alone cannot provide clear correlations between instructional approach and student performance.

Coordination of curriculum is important to middle school educators

Coordinating curriculum among elementary, middle, and high schools that serve the same students—also known as articulation—is important regardless of the schools' configurations or attention to transitions. If, for example, high school teachers communicate that middle school students from one particular feeder school seem weak in working with fractions, then the middle school can strengthen its curriculum or otherwise improve students' preparation. By the same token, high schools, which are not bound by state instructional adoptions the way grades K–8 are, should choose curriculum with a full awareness of middle school coursework and instructional strategies. That way they can ensure that teachers are not repeating material or requiring students to adjust to a radically new approach.

For middle schools, articulation is typically twice the work because staffs must communicate with principals and teachers at both elementary and high schools to track progress and coordinate curriculum. For the communities in California that have separate elementary and high school districts, it also involves interdistrict cooperation. While most educators agree with the concept, articulation takes time, relationship building, and coordination among schools. As a result, it sometimes does not happen to the extent that is necessary.

In its 2003 evaluation report, HumRRO reported that, among the California principals they surveyed, 82% of high school principals and 75% of middle school principals stated that the coordination of curriculum between schools is only partially or not developed. While a small sample size makes it difficult to generalize, the report indicated that high school principals who reported receiving better prepared incoming students were also from the

Middle Schools to Watch in California



The National Forum to Accelerate Middle-Grades Reform—founded in 1997 by educators, researchers, national associations, and foundations—sets forth the vision that middle grade schools should be academically excellent, respond to the needs and interests of young adolescents, be socially equitable, and be organized to support the school’s vision and mission.

In 1999 the forum instituted the Schools to Watch program to showcase schools that exemplified that vision. The state-level equivalent, “California Schools to Watch—Taking Center Stage,” began in 2003. Out of nearly 1,900 middle schools, 32 applied for the model designation. As part of the application process, each school was required to complete a self-assessment and prepare a two-page narrative on each of the components of academic excellence, developmental responsiveness, and social equity. Each school also had to describe how it provides organizational support to sustain school success. Six schools were selected for site visitations by the identification team comprised of members from the Middle Grades Alliance. For more information about the program, visit the California Schools to Watch—Taking Center Stage website at: www.clms.net/stw/

Four middle schools were selected as California Schools to Watch, and EdSource staff visited them in the fall of 2003. Profiles of the individual schools are located on the pages noted. They include:

- Castaic Middle School in Castaic, in northern Los Angeles County (page 17);
- Culver City Middle School in Culver City, outside of Los Angeles (page 19);
- Rogers Middle School in San Jose (page 21); and
- Silverado Middle School in Roseville, east of Sacramento (page 23).

These schools share a common commitment to implement the state’s high academic standards for their students and create developmentally supportive school environments that draw heavily from middle school “best practices.” Visits to these schools made it clear that, with a few exceptions, they share the following specific philosophies and practices:

- They believe that the state’s new academic standards have significantly contributed to improved student achievement at their schools.
- They effectively use standards and implement middle school best practices, such as flexible scheduling, interdisciplinary teaming, and advisories.

- Almost all of their 8th graders are enrolled in some level of algebra.
- They have strong professional development programs that use current articles and research, address current teacher needs, and provide on-going support.
- They interact consistently with feeder elementary and high schools to coordinate curriculum and help students with the transition to high school.
- Principals select and evaluate the teachers at their school.
- They provide textbooks for in-class use and for students to keep at home.
- They conduct student-led parent conferences that require students to show their work to parents and teachers and explain their successes and challenges in each subject.
- Principals report that their school district supports their efforts without micromanaging the school.
- They have school counselors who assist students with social and emotional issues.

The schools are split, however, regarding teacher background. Two schools prefer using teachers with multisubject credentials because they believe those teachers are better suited to the school’s preferred multidisciplinary teaming approach. The other two schools prefer single-subject credentialed teachers because they believe these teachers have a deeper understanding of the content needed to teach the more demanding course curriculum now expected at the middle grade level.

Each of these schools has demonstrated strong and steady growth in academic achievement over the past four years, adapting and customizing their programs to their school’s particular student demographics. They also all operate within relatively small school districts (3,124 to 6,671 students). And finally, their administrative and teaching staffs all seem to love being educators at the middle grade level.

On Feb. 13, three middle schools were recognized with the 2004 Schools to Watch—Taking Center Stage designation, including Alvarado Middle School in Rowland Unified School District, John Glenn Middle School of International Studies in Desert Sands Unified School District, and Medea Creek Middle School in Oak Park Unified School District.

schools reporting good articulation with the middle school. The same held true for middle schools: those reporting that elementary school students were arriving better prepared were the same as those reporting good articulation with feeder elementary schools.

Articulation between schools can also be important in encouraging students to take more rigorous courses. In a 2002 SREB study of 3,100 8th graders, almost half of the students were not taking college prep math classes in 9th grade even though

they said they intended to graduate from college.

However, middle and high schools with a coordinated effort to encourage students to take more rigorous courses reported that about 33% more of their students were doing so.

KIPP charter schools target the middle grades

Many educators are working to improve middle grade education. One new approach is through the Knowledge is Power Program (KIPP)—a national charter school network focused specifically on middle grades. The program was started in 1994 by two “Teach for America” graduates who were concerned about what happened to their elementary school students when they entered ineffective middle schools. The two created a charter middle school to put their ideas into practice, and the success of their efforts has evolved into a national network of charter schools built around their educational strategies.

KIPP schools operate longer hours than conventional schools. The regular school day starts at 7:30 a.m. and ends at 5:00 p.m. Instruction is also offered for four hours on Saturdays and for three to four weeks during the summer. The program focuses on character education and extracurricular activities as well as academics. Principals at each site manage their own school budget and personnel.

Today KIPP operates 32 schools in various states, including eight started in California since 2002–03. More than 80% of KIPP students are from low-income families, and the majority are African American and Hispanic. KIPP schools accept students regardless of past academic or behavior records.

According to KIPP, 99% of their students have gone on to top high schools. While many of its sites are too new to show an ongoing track record of student improvement, two pieces of data look promising. The two founding KIPP sites in Houston and the Bronx are among the highest-performing schools in their districts, and an evaluation by the Education Performance Network of New American Schools found statistically significant test score gains for three schools that opened in 2001. www.kipp.org

Middle grade educators need extra resources to help struggling students

Although schools are attempting to hire and retain qualified teachers, align curriculum and assessments to the standards, and adopt promising instructional strategies, many students are still struggling—particularly English learners, students from lower-income families, and many students of color. These students need additional support systems, and middle schools need extra resources in order to provide them. Some approaches include providing extra academic support during school or in combination with after-school programs and being more systematic about parental involvement.

Academic counseling is also important. Students at this level need to understand the relevance of their schoolwork and course-taking decisions in preparing them for high school, particularly if they hope to go on to college. Parents also need information about

college admissions requirements and other options open to their children before their students enter high school. Middle school is the best time for students and parents alike to find out more about how to navigate through the choices in high school and in the higher education system. However, such assistance with academic decisions often takes a back seat in middle school, in part due to the lack of personnel for whom this is a primary responsibility. According to data from the National Center for Education Statistics, California ranks last among the states in the ratio of counselors to students, and that means middle schools have few counselors. Further, any investment middle schools make in counseling services tends to focus on the emotional and social issues that can be so disruptive for this age group. The middle grades also have large class sizes—an average of 29.5 students compared to 21.5 in K–5 and 26.3 in grades 9–12.

That extra workload for middle grade teachers leaves them with little time to think beyond their classroom to their students’ long-term academic needs.

Programs that fund extra academic help have increased somewhat

In recent years, as California instituted high expectations for all students, state officials also increased the funding available for academic programs that help students who lag behind in achievement. This included additional funds for both summer school and a collection of other supplemental instructional support programs. School districts receive a set amount per student per hour for these programs. In 2003–04 the state allotted \$350 million for supplemental instruction compared to \$286 million in 1998.

One casualty of budget cuts, however, were the Intensive Algebra Instruction Academies for 7th and 8th grade students. When the state determined that first-year algebra would be a high school graduation requirement, it also recognized that many students and teachers were not prepared to meet this new expectation. Started in 2000–01, the academies received \$21.5 million in funding to assist 7th and 8th graders struggling with algebra or pre-algebra and to provide enrichment for other students. The program also included \$2 million to train teachers through the Algebra Academies Professional Development Institute. The academies were eliminated in the 2003–04 state budget.

Local implementation of these extra programs was somewhat lower than initially anticipated by policymakers. Middle school experts say that schools with a high proportion of students requiring such interventions face substantial scheduling challenges when they try to make time for these extra classes, the regular curriculum, and enrichment programs.

Before- and after-school programs are particularly valuable

Before- and after-school programs can also provide important academic help for struggling students by offering targeted instruction, tutoring, and homework assistance. In addition, the general support and recreational activities that these programs provide can help reduce crime and dangerous behaviors (such as sex, drug and alcohol abuse, and smoking), which are most likely to occur immediately after school. Successful programs offer a youth development approach that helps students to connect, navigate, and be productive in the world, according to Community Network for Youth Development, a nonprofit organization that works as an intermediary among youth programs, funders, policymakers, and researchers.

In California, public funding for after-school programs has increased substantially since 1998. This is largely due to two major programs: the federally funded 21st Century Community Learning Centers and the state-supported After School Education and Safety Program.

The 21st Century Community Learning Centers program provides funds that enable school districts to create “community education centers” at local schools. The schools must work with community partners to provide both academic and recreational opportunities to students. Nationwide, this program serves 1.2 million children in 6,800 schools. In California, it provided \$40.9 million in 2002–03 and \$75.5 million in 2003–04. A total of 75 middle schools participated.

The After School Education and Safety Program is the new name for California’s Before and After School Learning and Safe Neighborhoods Partnership Program. The name change was made subsequent to the passage of Proposition 49 in November 2002,



In a core program offered in 6th grade, students meet with the same group of teachers.

2003 Middle Schools to Watch

Castaic Middle School: Castaic

Principal: Marcia Dains, principal since 2001

School district: Castaic Union School District; elementary district; 3,124 students

District per-pupil expenditures (2001–02): \$5,454 (state avg. for elem. districts: \$6,515)

Students served: 1,819 students in grades 5 to 8; 6% English learners; 12% low income

Student ethnicity: White 68%, Hispanic 21%, Asian 7%, African American 3%

Teachers: 79% fully credentialed; 9 average years of experience

School Academic Performance Index (API) growth: 2002 Base: 743 2003 Growth: 750 (State API target: 800 out of 1000)

Beyond the numbers

The visit to Castaic demonstrated ways that school statistics can give the wrong impression about a school. For example, state data for Castaic showed that only 14% of 8th graders took the CST in Algebra 1 in 2003. However, all of the school’s 8th graders were enrolled in some level of algebra. Finding that many of these students were not adequately prepared to succeed in Algebra 1, the school developed three options for 8th grade math—a two-semester algebra class for those best prepared, a three-semester class for those less prepared, and beginning algebra for those least prepared. The latter two groups finish the course as 9th graders and do not take the Algebra CST until then.

Castaic’s data also showed the school having a high proportion of teachers (20%) with emergency permits in 2002–03. This troubling statistic conceals the school’s cooperation with nearby teacher education programs. The programs provided several excellent teacher candidates to the school that year. The staff decided to offer them positions while they finished their training. The percentage of emergency credentialed teachers at Castaic is down to 10% in 2003–04 as their recruits continue to complete their preparation programs.

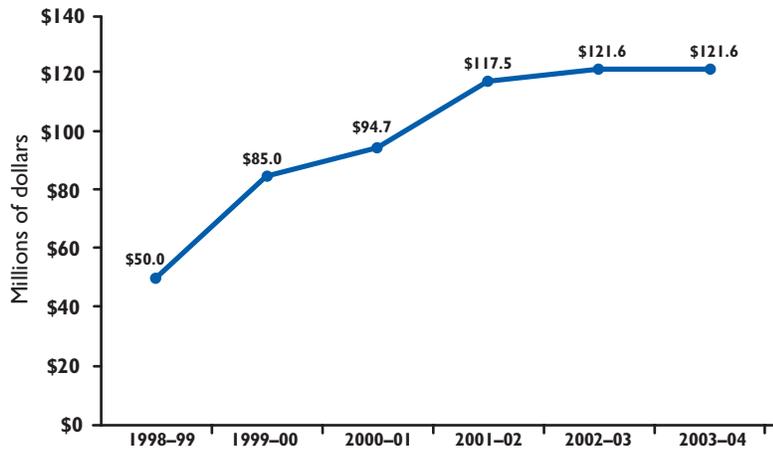
The principal’s perspective

Castaic Middle School, like Silverado (see page 23), occupies a relatively new facility designed around middle school “best practices.” Principal Dains, who worked on California’s *Caught in the Middle* report in the 1980s, says she believes strongly that middle school best practices can have a positive impact on the quality of education. However, she has found that the use of academic standards has been of even greater benefit. Together, she says, the two provide a powerful formula for middle school success.

which created a new funding mandate for after-school programs. The program supports the establishment and continued operation of local school/community programs for students in kindergarten through 9th grade. All must operate at a school site or recreation area adjacent to the school and provide both academic support and

recreation. In 2002–03 California supported more than 28,000 middle grade students in more than 150 middle schools through this program. Middle grade schools received grants of \$100,000 for after-school and \$33,000 for before-school programs. Figure 9 depicts the funding history for the program as a whole.

figure 9 | The state's investment in the After School Education and Safety Program has grown steadily



DATA: 2003-04 CALIFORNIA BUDGET ACT

EDSOURCE 3/04

When voters passed Proposition 49, they wanted to ensure more public funds would eventually be dedicated to the state program. However, the measure included language that would delay its implementation until state spending rebounds—an event that may still be a few years away given the general budget situation in California.

Museums, libraries, and hundreds of local community-based organizations also offer after-school opportunities and support for young adolescents throughout California. These programs are typically managed and supported outside of the school system, and they differ greatly by region. Some receive public funding and emphasize services for low-income students. Others are fee-based, offering enrichment activities for those who can afford them. It is common to have almost no connection between these types of community programs and local schools.

Parents can help students achieve

It is common wisdom that many parents become less involved with the school as their children get older, in part because of the perception that older students do not want their

parents around. Some middle schools also do not actively encourage parent involvement. However, no evidence indicates that parent involvement has negative effects on middle schools, and plenty shows it can significantly help students. As a result, exemplary middle schools continue to pursue this avenue of school support. In fact, the Educational Research Service reported in a 1997 national survey that 83% of middle and high school teachers wanted parent involvement to increase. In another 1994 study, nearly three-quarters of students age 10 to 13 wanted to talk with their parents more about schoolwork.

Research reviews conducted by the NMSA and SREB looked at the issue in more detail. Their reviews reported that in middle schools:

- Family involvement in interactive student homework is linked to higher achievement and better academic attitudes.
- Discussion of school activities with parents predicts student achievement, especially among whites and African Americans.
- Parental involvement, such as school-home communication and

parent volunteering, is more highly correlated with grades than with achievement test scores.

Middle school parents can also have a significant influence on whether students attend college. According to Hossler, Schmit, and Vesper, authors of *Going to College*, the early and consistent influence of a parent who expects that his or her child will attend college far outweighs assistance from a guidance counselor, teacher, or college admissions office in bringing this expectation to fruition. The authors found that education and income levels were not significant determinants, but that parents' encouragement was. By being clear about their expectations early, parents have even more impact: "...there is little doubt that the best time to influence [students'] post-secondary plans is during or even before their first year of high school." Parents can also influence their child's decision to attend college through actions, such as opening a small college savings account or taking a child to tour a college campus.

Teacher qualifications present a difficult issue for middle schools

The academic success of California's middle grade students largely depends on the skills and knowledge of the adults who teach them and run their schools. When it comes to middle schools, however, there are marked differences in both opinion and policy regarding the qualifications a middle school teacher needs. In California, these debates are ongoing against the backdrop of more rigorous expectations regarding teacher skills and knowledge on the one hand and the reality of continued teacher shortages on the other.

What constitutes a well-prepared middle school teacher?

Most people readily agree that all students need qualified teachers, but

opinions differ on what that means at the middle school level. Studies show that subject-matter knowledge is vital to effective teaching. Yet many middle school experts say that while a deep understanding of subject content may be necessary, it is not sufficient given the major developmental changes young adolescents experience. These debates play themselves out in varied beliefs about what teaching credentials are appropriate for middle school teachers.

Unlike many states, California does not have a teaching credential focused specifically on middle schools. Instead, middle school teachers can hold either a multiple-subject elementary credential or a single-subject secondary credential. Only three campuses in the California State University system—San Francisco, San Marcos, and Humboldt—offer programs with a middle school emphasis as part of a single-subject credential. By contrast, 43 states (including the District of Columbia) have some form of specialized credential for the middle grades, and 21 of them require a middle school credential.

Of California's 50,697 regularly credentialed middle school teachers in 2002–03, approximately 28% have an elementary credential, 35% have a secondary credential, and 11% have both. (Of the remaining 26%, a quarter has specialist credentials.) In surveying teachers in 15 states, SREB found that nearly two-thirds were teaching middle school with elementary education certificates.

Both the NMSA and the National Forum to Accelerate Middle Grades Reform stress the need for special preparation for middle school teachers so they can deal with their students' psychological and social needs. They recommend that the preparation of middle school teachers include studies on early adolescence, student teaching assignments in middle schools, and preparation in two or more broad teaching fields to help



Principal Patricia Jaffe (center back) recognizes students at a pizza party after observing their model behavior while playing a softball game.

2003 Middle Schools to Watch

Culver City Middle School: Culver City

Principal: Patricia Jaffe, principal since 2000

School district: Culver City School District; unified district; 6,671 students

District per-pupil expenditures (2001–02): \$6,806 (state avg. for unified districts: \$6,882)

Students served:
1,521 students in grades 6 to 8;
14% English learners; 35% low income

Student ethnicity: Hispanic 41%, white 27%, African American 18%, Asian 14%

Teachers: 83.3% fully credentialed; 12.9 average years of experience

School Academic Performance Index (API) growth:
2002 Base: 706 2003 Growth: 711
(State API target: 800 out of 1000)

A focus on cooperation with the high school

Culver City Middle School, in the heart of Los Angeles County, is housed in older facilities. Part of a small unified school district, the middle school is located on the same grounds as the high school its students will attend. Close articulation with both its local elementary and high schools is a high priority at Culver City. Principal Patricia Jaffe talks with the high school principal daily to align their schools' curriculum and regulations and coordinate communications to students and families. The principals organize joint staff meetings with vertical teaming by subject so teachers will better understand what is being taught at each grade level and can better prepare students for the next year's curriculum. The middle and high schools make joint presentations to parents on the California High School Exit Exam.

Principal Jaffe also praises the support and responsiveness of the school district. The district produced posters of the standards by grade level and subject for posting in classrooms, mailed a description of the exit exam to families of all 5th to 10th grade students, and provided binders of student test data to each principal. The superintendent and staff, including even the business manager, visit the school at least three times each year—an advantage over larger districts. The contact helps improve school culture and morale.

Reforms are working

Each teacher at the school has a copy of the *Taking Center Stage* report and takes its recommendations seriously. Jaffe says that the three elements making the biggest difference for the school are the state's academic standards, block scheduling, and student teams made up of all students, including English learners and Special Education students. As a result of these teams, English learners' scores increased by nine points on the API last year.

teachers present multidisciplinary problem solving in their classrooms. They also propose including age-appropriate instructional methods, such as teaming, integrated learning, interdisciplinary work, and connecting to real-world situations. The NMSA cites a 1994 study of more than 2,000 middle grade teachers

that indicated that “the greater the number of middle grades courses middle grades teachers have, the more favorably they rate their teacher preparation programs.”

However, others believe that while middle school students' developmental changes should not be ignored, it is more

important that teachers receive general training consistent with high standards, including the use of quality curriculum and assessments. Based on its review of research findings, SREB concludes that most of what helps middle school students succeed is similar to what works at any grade level. SREB asserts that middle school teachers can be adequately trained through credentialing programs that focus on quality teaching no matter what the grade level. California's 2001 *Taking Center Stage* report also recommends that middle grade instruction focus on standards, assessment, and accountability, and the state's credentialing approach is consistent with that.

The emphasis on subject-matter knowledge is increasing

A second teacher-quality issue at the middle and high school levels is teachers' academic background and subject-matter knowledge. California gives candidates for a single-subject credential a choice: either successfully complete a state-approved major in the subject of the credential or pass a rigorous state-adopted exam in the subject. Candidates already holding a credential in one or more subjects may add another subject to their credential by passing a subject-matter exam, or add a supplementary authorization to their existing credential by completing additional coursework equivalent to a minor.

While some believe that passing a state-approved exam is sufficient for teachers to show their proficiency in a subject, others believe that a major or minor ensures deeper knowledge and consequently produces better teaching. According to the 2003 *Quality Counts* report published by *EdWeek*, 42% of California's middle school students were taught by teachers who had neither a major nor a minor in the subject that they taught. California is not alone in this respect. As of 2002 only 20 states

required middle school teachers to have a major or minor in the subject that they teach, while 23 states required middle school teachers to have a subject-area endorsement.

Researchers have explored the wisdom of making a major or minor optional. SREB's literature review cites a 1996 paper prepared by D. Goldhaber and D. Brewer indicating that teachers who hold a degree in mathematics or science and are certified are associated with better student achievement in their subjects. By contrast, those with degrees in English or history were not. These findings are contradicted elsewhere, and the debate on this subject is both spirited and ongoing.

The high incidence of out-of-field teaching may have an effect beyond the obvious lack of depth in teacher knowledge, according to a June 2000 report in *Phi Delta Kappan* entitled "Important Developments in Middle-Grades Reform." The authors found that educators who are teaching out of their field are less likely to express a belief that their students can reach high academic standards than their counterparts who received academic training in their field of teaching. Low expectations tend to lead to low achievement. However, others might argue that those teaching middle school with an elementary credential—which by some definitions could be considered out of field—are better prepared to work with children and that at the middle school level this may be more important than a major or a minor in the subject taught.

NCLB is affecting middle grade teacher credentials in California

The federal No Child Left Behind Act (NCLB) is forcing California to put increased emphasis on subject-matter knowledge as a fundamental criterion for certifying that a teacher is "highly qualified." Both new and experienced

teachers will soon have to demonstrate that knowledge in order to teach a "core" subject. For this purpose, the core subjects include English, reading, language arts, math, science, foreign languages, civics and government, economics, arts, history, and geography.

NCLB regulations say that new middle school and high school teachers must demonstrate mastery in every subject that they teach either by: 1) passing the appropriate state test; or 2) through college coursework including an undergraduate major or equivalent, a graduate degree, or a university subject-matter program approved by the California Commission on Teacher Credentialing. Fortunately, most California secondary school teacher-training programs offer an emphasis in two different subjects, helping to prepare educators to teach more than one subject and potentially providing middle schools with more flexibility in placing new teachers. Federal law called for these requirements for new teachers in schools receiving federal Title I funds to be implemented in 2002–03, but California's progress has been somewhat slower. For non-Title I schools, new teachers must meet the requirement by 2005–06.

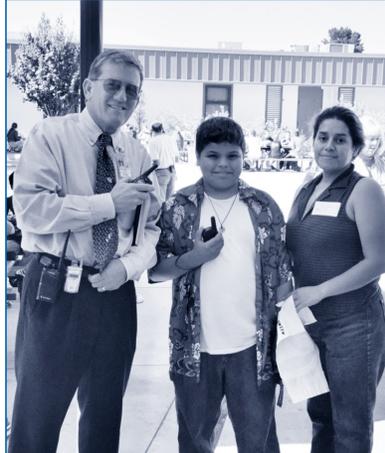
Veteran middle grade teachers can be certified as highly qualified in a number of ways. They can pass the same state-approved subject-matter tests as new teachers, certify completion of the same coursework equivalents described above, or earn National Board Certification. Or they can instead participate in the High Objective Uniform State Standard Evaluation (HOUSSE) process or complete additional training. Veteran teachers currently teaching multiple subjects—such as language arts and social studies—will be out of NCLB compliance unless they meet these requirements for each subject.

Initially, it was unclear how the state would reconcile the new federal regulations with the existing reality that many middle schools have teaching staffs with a mix of elementary and secondary credentials. At issue was whether a middle school—particularly one that serves grades 5 or 6 through 8—could continue to have teachers with both types of credentials. Although uncertainties remain and state agencies continue to work on the issue to help schools comply with federal law, much of the early concern and confusion was addressed when the State Board of Education adopted the final regulations in December 2003. Under those regulations, a school district looks at its curriculum to determine whether a course is at the elementary, middle, or high school level. This determination can be made separately for each of its schools or for each grade level at a school. If a teacher's assignment is identified as being at the middle school level, the teacher can still hold just a multisubject elementary credential. However, that teacher must also demonstrate subject-matter competency by going through the same subject-matter certification as any other middle school teacher with a secondary credential, either based on a state test, coursework, or the HOUSSE process as described above.

A shortage of highly qualified teachers is a long-term problem in California

Finding and retaining qualified teachers is a continuing challenge in California, including at the middle school level. School districts have extra difficulty keeping the lowest-performing schools staffed with fully credentialed teachers and finding teachers credentialed to teach mathematics, science, and Special Education.

While many people perceive that teacher shortages are more severe in



Principal Gary Stebbins talks with a student, who helps with radio communication on campus, and the student's mother.

2003 Middle Schools to Watch

Rogers Middle School: San Jose

Principal: Gary Stebbins, principal since 1995

School district: Moreland School District; elementary district; 4,413 students

District per-pupil expenditures (2001–02): \$7,103 (state avg. for elem. districts: \$6,515)

Students served: 654 students in grades 6 to 8; 18% English learners; 27% low income

Student ethnicity: White 46%, Asian 23%, Hispanic 27%, African American 4%

Teachers: 84% fully credentialed; 15.3 average years of experience

School Academic Performance Index (API) growth: 2002 Base: 785 2003 Growth: 795 (State API target: 800 out of 1000)

A student-oriented environment

Principal Gary Stebbins keeps a strong focus on empowering and motivating students at this suburban school. During recess and lunch, Stebbins walks the old but completely remodeled campus carrying a two-way radio, providing a visible presence, and talking often with the students. He designates certain students, often those struggling academically or behaviorally, to also carry two-way radios during recess so they can communicate any problems to staff. It is clear from watching Stebbins interact with the students that the respect and affection are mutual.

The principal as leader

Rogers also benefits from its principal's instructional leadership, which has helped create a strong culture of teacher learning at the school. Stebbins recently completed his EdD in Educational Leadership and Change and puts theory into action at the school. In 2002–03 he taught a math/science exploratory himself, serving as a role model for teachers by using the academic content standards to design his curriculum and teach the course. He provides academic articles for his staff, helps lead staff discussions, and encourages teachers to implement new teaching strategies that excite them. For example, a group of teachers participating in a master's program together wanted to try grouping students by level for pull-out language arts interventions as part of an action research project. Through some trial and error, they developed an approach that was manageable and that resulted in solid student achievement gains. Based on these results, this "flexible grouping" practice has gained strong support within the school, and many other teachers are now implementing it.

elementary schools due to the state's K–3 class size reduction program, middle schools actually have the lowest proportion of fully credentialed teachers. While 89% of elementary teachers and 86% of high school teachers were fully credentialed in 2002–03, the same was true for only 83% of middle school teachers. Further, those figures represent a decrease of one percentage point since 1999–2000 for middle and

high schools. Meanwhile, the portion of fully credentialed teachers at the elementary level has improved by three percentage points.

In addition, high concentrations of uncredentialed teachers are more prevalent in particular middle and high schools. In 2002–03, 28% of high schools and 27% of middle schools reported that more than 20% of their teachers lacked full credentials.

However, only 14% of elementary schools faced the same situation.

California's increased emphasis on teaching algebra to all students in 8th grade heightens the saliency of this issue, particularly given the perennial shortage of math teachers. According to the Center for the Future of Teaching and Learning, 15% of the state's math teachers were less than fully credentialed in 2002–03, and this shortage has been steadily increasing since 1997–98.

California's credentialing structure, with no specific middle school credential, may contribute to this problem. With the two credential options being elementary/multisubject and secondary/single subject, teaching candidates may think of themselves as either elementary or high school teachers. This creates less likelihood that they set out to

become middle school teachers and that they focus their preparation accordingly.

As is true at other grade levels, the distribution of uncredentialed teachers is also a problem at the middle school. Looking at which schools were most likely to have those underqualified teachers, the table to the right makes clear that the lowest-performing middle schools, based on their API scores, are also those with the highest percentages of uncredentialed teachers. Other data indicate that these schools are more likely to be serving a high percentage of students who are from low-income families and/or who need to learn English.

Effective leadership is at a premium

Effective leadership is essential for any school, at any grade level, to function well. However, the challenges are partic-

Percentage of less than fully credentialed middle school teachers in 2002–03

School's Academic Performance Index (API) Ranking	2002–03
Above 75th percentile	6.9%
50th to 75th percentile	10.2%
25th to 50th percentile	14.5%
Below 25th percentile	26.0%
All Schools	15.3%

Note: This data is only for schools that were given Base APIs in 2002–03, so some middle schools are not included. Data are for schools designated as "middle schools" for API purposes.

DATA: CALIFORNIA DEPARTMENT OF EDUCATION (CDE), PROFESSIONAL ASSIGNMENT INFORMATION FORM; API RESEARCH FILES

EdSource 3/04

To Learn More

For general information on California's public education system and a full bibliography of this report, visit www.edsources.org. Also see the following resources:

- *Taking Center Stage—A Commitment to Standards-Based Education for California's Middle Grades Students* by the California Department of Education (CDE), 2001. www.cde.ca.gov/middle/tcs.html
- *Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools* by CDE, 1987. On microfiche at university education libraries.
- *Focus on the Wonder Years: Challenges Facing the American Middle School*, the most recent extensive report on middle grade education, reviews literature of the past 20 years and assesses middle schools' major challenges. RAND Corporation will release the report in spring 2004. www.rand.org
- An earlier report that helped to define the middle school movement is *Turning Points: Preparing American Youth for the 21st Century*. www.carnegie.org/sub/pubs/ccadpubs.html
- For data on every middle school in California—including their scores on California's Academic Performance Index (API) and whether they have made Adequate Yearly Progress (AYP) under the federal No Child Left Behind Act—go to the Ed-Data Partnership website: www.ed-data.k12.ca.us

Advocacy or support groups for middle grade education

- The Middle Grades Alliance works on collaborative projects and provides an allied voice for middle grade education in California. www.cde.ca.gov/middle
- The California League of Middle Schools is the lead organization for the Schools to Watch—Taking Center Stage program. For information on Schools to Watch: www.clms.net/stw/. For information on the league: www.clms.net/
- National Middle School Association offers multiple research summaries on middle grade topics on its website as well as updates on work in the field. www.nmsa.org
- The National Forum to Accelerate Middle-Grades Reform sponsors initiatives and prepares policy regarding middle grade education. www.mgforum.org
- The Southern Regional Education Board sponsors the Making Middle Grades Work initiative and provides member states and schools with technical assistance, publications, assessments, and networking services. www.sreb.org/programs/MiddleGrades/MiddleGradesindex.asp

ularly daunting in the middle grades. In addition to a principal's general responsibilities—such as managing and evaluating personnel, serving as an instructional leader, interacting with parents, and handling state and district regulations—most middle grade principals also must manage the articulation of curriculum and student transitions with both elementary and high schools. As mentioned earlier, that is double the work required at either of the other grade levels.

In addition, middle school principals need to have a sound understanding of their developmentally diverse student body and of the reforms that will address these students' specific needs. To effectively implement middle school "best practices," such as flexible scheduling or interdisciplinary teaming, a principal needs to appreciate the strengths and weaknesses of the school's teaching staff and its students. To complicate matters, middle grade principals only have two to three years to get to know their students and parents, versus the four to six years that high school or elementary school principals have.

The importance of stability in school leadership is well documented.

Some report that this is a particular problem among middle school principals, in part because some educators view this position as a steppingstone to high school principal positions. Others stress that to be successful in the middle grades, principals must be genuinely intrigued by the changes their students are going through and recognize the important role they can play in preparing these early adolescents for high school and life in general.

Data on principal turnover in California's middle schools are not available, and little is known at the state level about the recruitment and retention challenges specific to this grade level. Such issues are important to the success of middle schools and worthy of more attention.

California's middle grades warrant attention

EdSource's examination of the progress being made in middle grade education—and the academic achievement of these young Californians—makes clear that middle grade reform is a work in progress. Continuing that work, and doing so effectively, is critical to the state's desired outcomes not only for middle graders, but also for high school students and public schools generally.

Student literacy, as the fundamental first step to academic achievement, needs serious and continued attention from middle grade educators. However, the state's increased math expectations present a bigger and more complicated challenge. With only one-third of California's 8th graders completing Algebra I, schools have a long way to go to meet the math standards state leaders have established for all students. Low-income, Hispanic, African American, and English learner students are particularly far behind. To make the goal a possibility, elementary schools must first do their part in adequately preparing students. Then



Students practice a reenactment of the Civil War as part of an interdisciplinary and hands-on learning unit on American history.

2003 Middle Schools to Watch

Silverado Middle School: Roseville

Principal: Russell Weikle, principal since 2003

School district: Dry Creek Joint Elementary School District; elementary district; 6,386 students

District per-pupil expenditures (2001–02): \$5,669 (state avg. for elem. districts: \$6,515)

Students served: 1,289 students in grades 6 to 8; 1% English learners; 11% low income

Student ethnicity: White 78%, Hispanic 11%, Asian 7%, African American 3%

Teachers: 100% fully credentialed; 9.6 average years of experience

School Academic Performance Index (API) growth: 2002 Base: 809 2003 Growth: 813 (State API target: 800 out of 1000)

A new facility

Located in a rapidly growing suburb of Roseville, Silverado Middle School was designed and built to support middle school “best practices.” Classrooms are grouped in twos, joined by a third student workroom that has windows into the main classrooms. Students use these smaller rooms to take tests, grade papers, work independently, or meet in small groups without being disturbed by the activities of the general classroom. Each grade level at the school has its own dedicated wing with a small quad of classrooms and open meeting area. Within each grade level, there are three teams of teachers, each sharing common planning time and working with one team of students throughout the day. This teaming approach creates a more personalized, “small school” atmosphere.

An unusual school schedule

One feature unique to Silverado is its school calendar. School operates for three trimesters, with break periods of three weeks in the fall and spring and a six-week break in the summer. Teachers say they feel the breaks help with renewal and that the shorter summer break helps prevent students from losing ground academically when they start the new school year.

District support with state standards

Like other successful middle schools, Silverado has a strong emphasis on the standards. But what is unique to this school is its district's support in developing systems to help teachers assist students in meeting those standards. Teachers are able, for example, to access a coveted four-inch thick binder with assessments by subject designed by the district. Using these assessments helps teachers determine whether students understand all they need to know to meet a particular standard.

middle grade teachers need the subject-matter expertise and skill to frequently assess progress and adapt instruction so struggling students in 6th and 7th grades are better prepared to succeed in algebra in 8th grade. Finally, every 8th grade math teacher needs a firm command of algebra and how to teach it.

These goals are confounded by the trouble California's middle schools are having recruiting enough qualified teachers, particularly to teach math. Middle schools have a higher proportion of uncredentialed teachers than either elementary or high school. That may reflect the growth in enrollment, teacher preferences for the smaller

classes at the other grade levels, or teacher discomfort with the specific needs of this age group. But it may also be directly related to important and unresolved questions of how teaching quality is defined in the middle grades.

What constitutes an appropriate academic background and credentialing experience for middle grade teachers? This is not a question California as a state has answered clearly, and the resulting ambiguity is a source of frustration and conflict for many middle grade educators. Whether policymakers believe that middle grade teachers need more training on subject matter, the developmental needs of students, or both, coming to some conclusion could help make the middle grades a more attractive choice for teachers and ultimately improve middle grade instruction.

Even the most highly skilled teachers find motivating young adolescents to take their education seriously a daunting challenge. For middle grade students, one key element is helping both them and their parents understand that middle school academics are the foundation for high school, college, and adult success. Social choices and challenges—related to risk-taking behavior—increasingly confront younger adolescents and compete with academics for their attention. By their choices many students set their path toward adulthood at this stage in their life without even realizing it. The extent to which a middle grade student feels connected and engaged with school staff, safe and welcomed by their peers, and successful at school academics can have a significant impact on whether he or she gets on a college track in high school or becomes a drop-out statistic. More academic guidance and support for middle school

students—especially in low-income neighborhoods—could be a significant help.

But even if the academic preparation of middle grade students improves, they can still be distracted or derailed by a difficult social or academic transition to high school. Helping them make that transition requires good coordination and communication between feeder schools. That takes extra time for administrators and teachers, a commodity in short supply in California's middle schools where extra counseling and support staff are practically nonexistent.

California's current financial crisis limits the state's ability to make new investments in middle grade education. But even in better times, such as the late 1990s, state leaders acted first on reforms that were more straightforward and politically popular, such as K–3 class size reduction and a high school exit exam. They also provided additional resources to both elementary and high schools to support those efforts. Meanwhile, these changes and others since—including the federal reforms under NCLB—have had profound effects on California's middle schools. Yet this segment of the educational system has received little attention and even less additional funding.

If state policymakers and other advocates want to see improved academic achievement among California's high school students, they should consider including middle grade education—and especially 8th grade algebra success—as a central part of their focus. When middle schools function well, students acquire the habits of mind, academic skills, and increased confidence that can make all the difference in their ability to succeed in high school and beyond. ■■



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