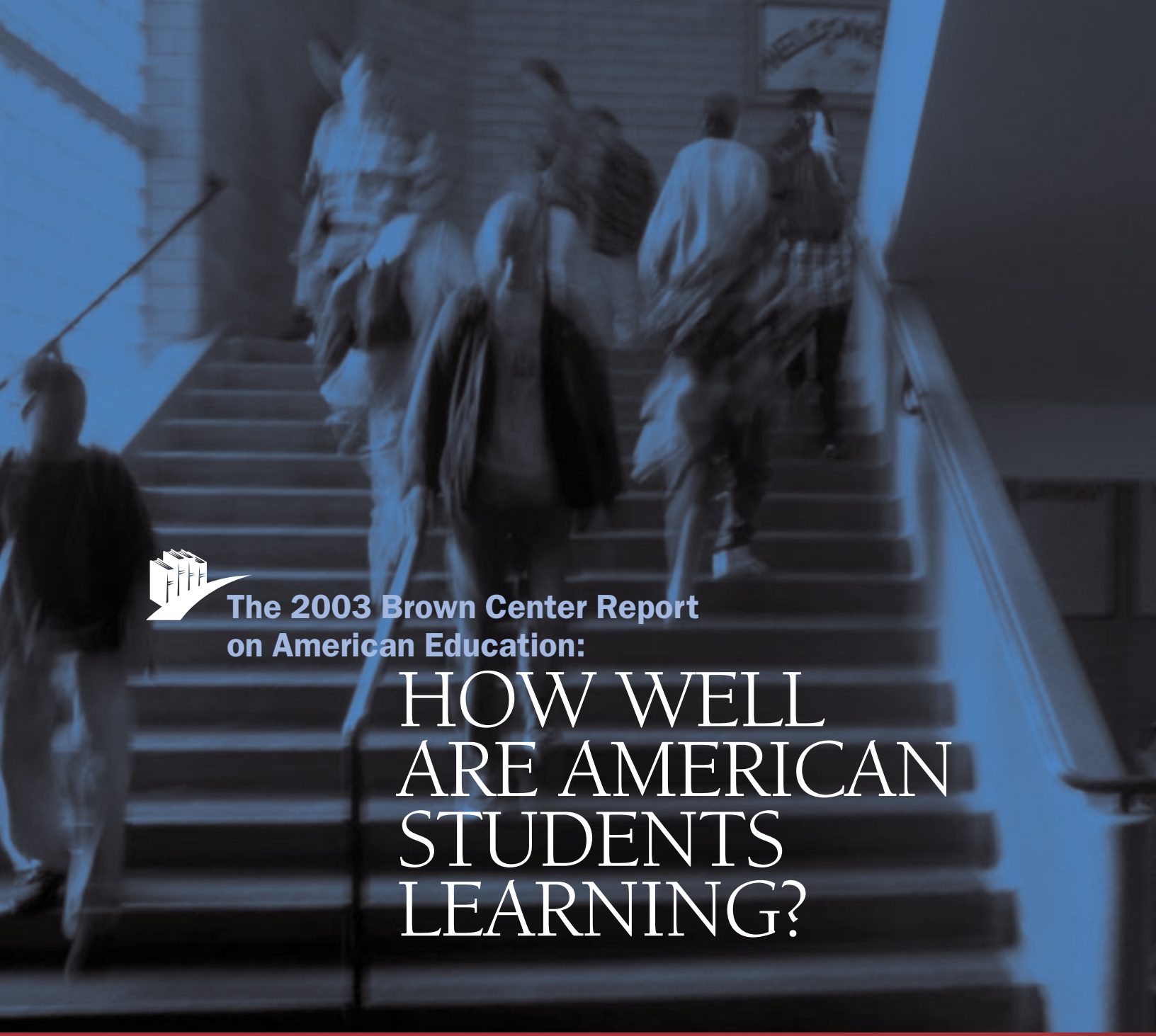


The 2003 Brown Center Report on American Education:

HOW WELL ARE AMERICAN STUDENTS LEARNING?

With special sections on homework, charter schools, and rural school achievement

THE BROOKINGS INSTITUTION

ABOUT BROOKINGS

The Brookings Institution is a private nonprofit organization devoted to research, education, and publication on important issues of domestic and foreign policy. Its principal purpose is to bring knowledge to bear on current and emerging policy problems. The Institution maintains a position of neutrality on issues of public policy. Interpretations or conclusions in Brookings publications should be understood to be solely those of the authors.

BROWN CENTER ON EDUCATION POLICY

Established in 1992, the Brown Center on Education Policy conducts research on topics in American education, with a special focus on efforts to improve academic achievement in elementary and secondary schools. For more information, see our website, www.brookings.edu/browncenter.

To order copies of this report, please call 800-275-1447, fax 202-797-2960, e-mail BIBOOKS@brookings.edu, or visit online at www.brookings.edu.

This report was made possible by the generous financial support of The Brown Foundation, Inc., Houston.

The 2003 Brown Center Report on American Education:

HOW WELL ARE AMERICAN STUDENTS LEARNING?

With special sections on homework, charter schools, and rural school achievement

October 2003
Volume I, Number 4

by:
TOM LOVELESS
Director, Brown Center on Education Policy

TABLE OF CONTENTS

Research assistance by:
PAUL DIPERNA
Brown Center on Education Policy

JOHN COUGHLAN
Brown Center on Education Policy

THE 2003 BROWN CENTER REPORT ON AMERICAN EDUCATION

This is the fourth edition of the Brown Center Report on American Education. The report premiered in the fall of 2000, as the presidential campaign between George W. Bush and Al Gore drew to an exciting finish. This year's report is published as Democratic candidates vie for their party's nomination for president. Education will figure prominently in the 2004 election, as it did in the last. President Bush will herald No Child Left Behind (NCLB) as the most important federal education legislation in a generation. Democrats will argue that without ample funding the law is an empty promise. They will point out that the Bush administration put the brakes on federal education spending just as NCLB was getting off the ground.

The partisan debate over how to improve American education has been following the same script for the past four years. Republicans stress holding schools accountable and make concessions on funding increases. They seek to neutralize the Democrats' traditional strength with voters on education issues. Democrats stress the need for providing more resources to schools and make concessions on accountability provisions. They seek to present education as a key plank in their party's domestic agenda for the country. This year's Brown Center Report examines several issues that are important to No Child Left Behind and ongoing efforts to improve American schools.

The first section of the report analyzes the latest data on student achievement and asks how the nation's students are doing in reading and mathematics. Achievement in rural schools receives a closer look.

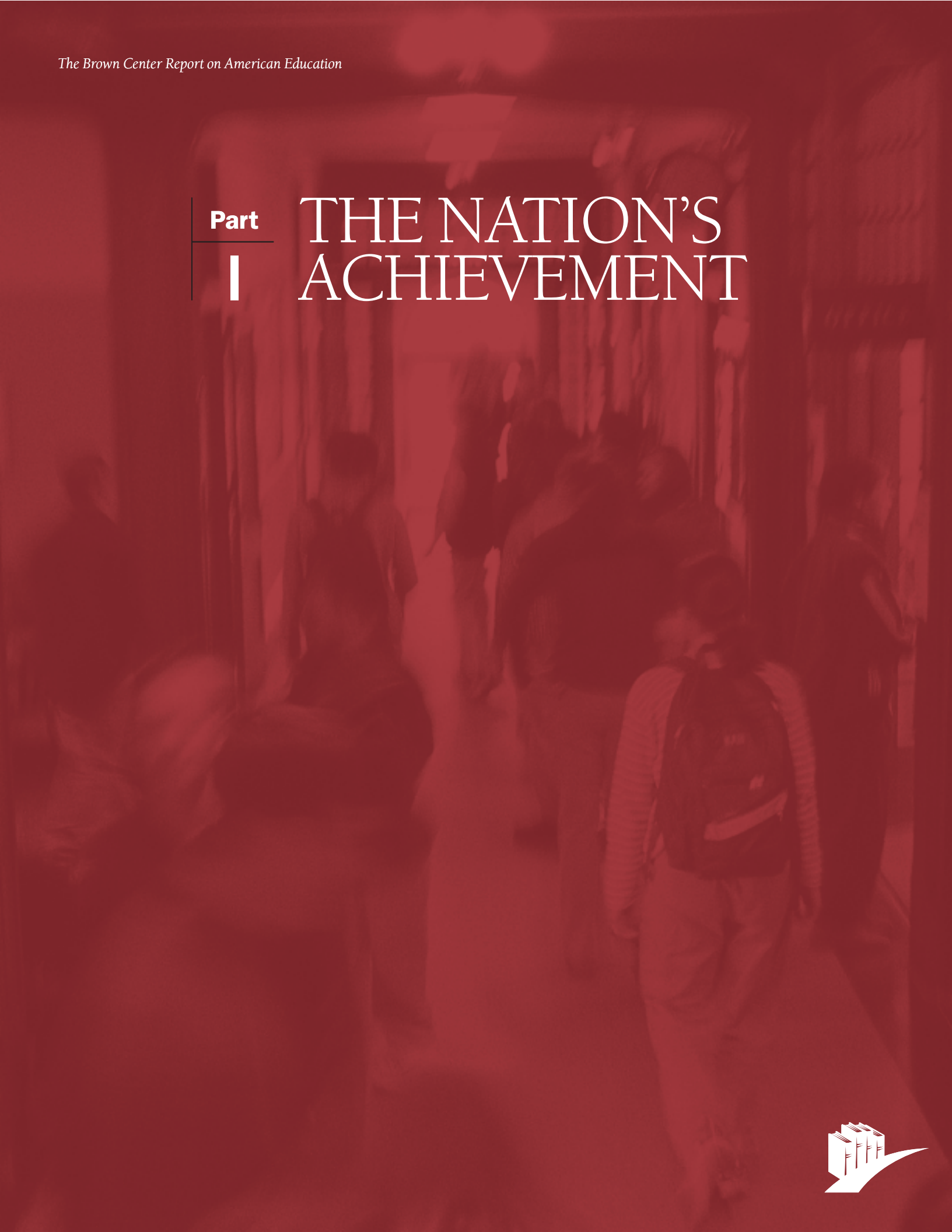
The second section is a study of homework. Conventional wisdom is that higher academic standards, a bedrock of No Child Left Behind, have

driven up the amount of students' homework. Stories of tired, over-worked kids abound. After examining several different sources of data on the topic, the study concludes that virtually no evidence exists that homework has increased in recent years, nor that the homework load has become—or ever was—overwhelming. The stories of children laboring under onerous amounts of homework appear to feature a small proportion of children who, though their predicaments are real, are not typical.

The third section of the report presents a follow-up of last year's study on charter schools. This year's study examines charters' test scores, with a special focus on achievement in conversion charters, schools that were previously regular public schools and converted to charter status, and charters managed by educational management organizations (EMOs), professional management firms. Both types of charter school can lay claim to a particular form of expertise. When a regular public school converts to a charter school, the most talented and experienced teachers and administrators usually stay on board. The very existence of educational management organizations is based on the premise that expert managers, who are usually not educators and come from the private sector, can employ their leadership skills to make schools more productive.

Readers should be informed that the author of the Brown Center Report, Tom Loveless, has had several professional affiliations with charter schools. These associations cannot change the data on which the following analysis is based, but they might have, in ways unknown, influenced the choice of questions in the research or the interpretation of the findings. The data are downloadable from the Brown Center website (www.brookings.edu/brown-center) for those who would like to conduct their own analysis.

Part I THE NATION'S ACHIEVEMENT



THIS SECTION OF THE REPORT EXAMINES FEDERAL AND STATE assessment data to determine how well American students are learning reading and mathematics. In the spring of 2003, the federal government released scores from the 2002 National Assessment of Educational Progress (NAEP). As the Brown Center Report went to press, NAEP scores from 2003 were being readied for release, making it the first time that comparable NAEP tests had been given in consecutive years. Annual NAEP testing reflects the intention of the No Child Left Behind Act (NCLB) that the NAEP serve as an independent monitor of state tests. Accountability systems are based on how schools perform on state tests. The NAEP should, ideally, indicate whether states make their tests too easy or otherwise report inflated scores.

The NAEP program has two tests—the main and the trend. The 2002 results were derived from the main NAEP, the fifth time the test has been given in reading since 1990. Main NAEP scores in math were last reported in 2000. The trend NAEP, a test first administered in 1969 in science, 1970 in reading, and 1972 in math, will be given again in 2004. Despite the confusion caused by using two tests, NAEP is valuable for providing periodic snapshots of the nation's academic achievement based on the performance of large, randomly selected, nationally representative samples of students on tests of academic skills.

NAEP Gains by Subject and Grade

Tables 1-1 and 1-2 present the latest NAEP data. Scores are broken out by subject area and grade level. Significant findings are evident along these two dimensions. Math scores continue to improve at a quicker pace than reading scores. Math scores at the fourth grade level rose by approximately .47 standard deviations from 1992 to 2000, an extraordinary increase on any achievement test—about one and one-fourth grade levels of knowledge. Almost one year's gain was made from 1990 to 1996 alone! The gains made by eighth and twelfth graders have been less pronounced but are still significant.[1]

The reading results are quite different. The 2002 scores are flat (see Table 1-2). Reading proficiency has changed very little since 1992. The languid progress in reading is

Math Main NAEP Scores, 1990–2000
(average scale scores)

Table 1-1

	1990	1992	1996	2000	1990-2000 Change	Change in SD Units
Grade 4	213	220	224	228	+15	+0.47
Grade 8	263	268	272	275	+12	+0.33
Grade 12	294	299	304	301	+7	+0.19

Source: Standard Deviations in 1990 were: Grade 4, 32 points; Grade 8, 36 points; Grade 12, 36 points.

As measured by the National Assessment of Educational Progress (NAEP), for grades 4, 8, and 12.
NAEP data are expressed as scale scores, ranging from 0 to 500.

Reading Main NAEP Scores, 1992–2002
(average scale scores)

Table 1-2

	1992	1994	1998	2000	2002	1990-2002 Change	Change in SD Units
Grade 4	217	214	217	217	219	+2	+0.06
Grade 8	260	260	264	—	264	+4	+0.11
Grade 12	292	287	291	—	287	–5	–0.15

Source: Standard Deviations in 1992 were: Grade 4, 36 points; Grade 8, 36 points; Grade 12, 33 points.

As measured by the National Assessment of Educational Progress (NAEP), for grades 4, 8, and 12.
NAEP data are expressed as scale scores, ranging from 0 to 500.

The languid progress in reading is surprising given the emphasis placed on literacy instruction by policymakers in the 1990s.

surprising given the emphasis placed on literacy instruction by policymakers in the 1990s. The federal government passed the Reading Excellence Act of 1998, and a long, bruising battle over phonics legislation transpired in dozens of states.[2] Reading performance has barely budged.

Younger students are making larger strides in academic performance than older students. Twelfth grade reading scores have actually declined. The loss of 5 scale score points in that grade level since 1992 is not only statistically significant, but also significant in the real world. One-fourth of twelfth graders scored below a basic level as defined by NAEP performance standards. That means about 700,000 students in the final year of high school do not have the basic reading skills that are required for meaningful employment or success in higher education.

What explains the poor reading performance by twelfth graders? No one knows for sure. High school seniors may not take the NAEP test seriously. An analysis of responses on the 1996 NAEP uncovered evidence that more than a quarter of twelfth graders engaged in off-task behaviors—leaving questions blank, doodling in the margins, giving the same answer on a long string of items, and the like.[3] How students perform on NAEP does not count for anything, and the test's low stakes may hinder its ability to assess what students really know. Determining whether off-task test behaviors have increased in recent years would help explain their role in affecting trends in test scores. The fact that twelfth grade NAEP scores in math have not similarly declined casts doubt on the explanation.

Other theories for the disappointing reading scores lay blame on high schools themselves. A federal commission singled out the senior year in American high schools as an academic wasteland, the typical student's day filled with non-academic classes, study halls, part-time jobs, and extra-curricular activities.[4] Early admission to college robs even the most studious seniors of the incentive to work hard. Many top students are notified that they have been accepted to college as early as December, making the second half of the school year irrelevant to their future plans. High school seniors take so many tests that count—finals, Advanced Placement tests, graduation exams—that tests such as the NAEP risk being seen as unimportant.

State Test Results

The Brown Center Report has been monitoring state test scores for the past four years. State test results now take on heightened importance. Under No Child Left Behind, state tests are the instrument by which schools will be held accountable for producing student learning. Tables 1-3 and 1-4 summarize the latest results, compiled from tests given in 2002. Data were obtained from forty-nine states. The analysis is confined to

states using the same test in the same subject area and grade level in 2001 and 2002. Since states assess achievement in various grade levels, the number of states reporting at any particular grade varies.

Table 1-3 shows the percentage of states reporting an improvement, no change, or a decline in mathematics from 2001 to 2002. Table 1-4 provides the same information for reading. The same patterns noted in the NAEP data are apparent here, with more states gaining in math than reading and more states gaining at younger grades than older grades. In math, more states reported gains than losses in grades 4, 5, and 8. Only at tenth grade did declining states outpace advancers (by a margin of eight to six, with five states reporting no change). In reading, more states reported gains in grades 4 and 5 than reported declines (see Table 1-4). The fifth grade advance is small—eight states advancing to six declining. In grades 8 and 10, declining states outpaced gainers.

How do the latest state scores compare with previous years? Is student achievement in the U.S. improving or deteriorating? The direction and magnitude of national achievement must be discerned from several disparate snapshots. To evaluate national performance in previous years, the Brown Center Report tracked over time the percentage of states with rising test scores, as the first rows of Tables 1-3 and 1-4 report for 2002. The problem with that approach is that it does not adequately account for states with falling scores. This year, Brown Center researchers devised a new statistic to serve as an indicator of momentum in state achievement tests.

State Test Results
(2001–2002)

Table 1-3

Math

		Grade 4
Improvement	↑	**16 (50%)**
No Change	↔	**8 (25%)**
Decline	↓	**8 (25%)**
Total		**32 states**
		Grade 5
Improvement	↑	**11 (55%)**
No Change	↔	**3 (15%)**
Decline	↓	**6 (30%)**
Total		**20 states**
		Grade 8
Improvement	↑	**15 (38%)**
No Change	↔	**11 (28%)**
Decline	↓	**13 (33%)**
Total		**39 states**
		Grade 10
Improvement	↑	**6 (32%)**
No Change	↔	**5 (26%)**
Decline	↓	**8 (42%)**
Total		**19 states**

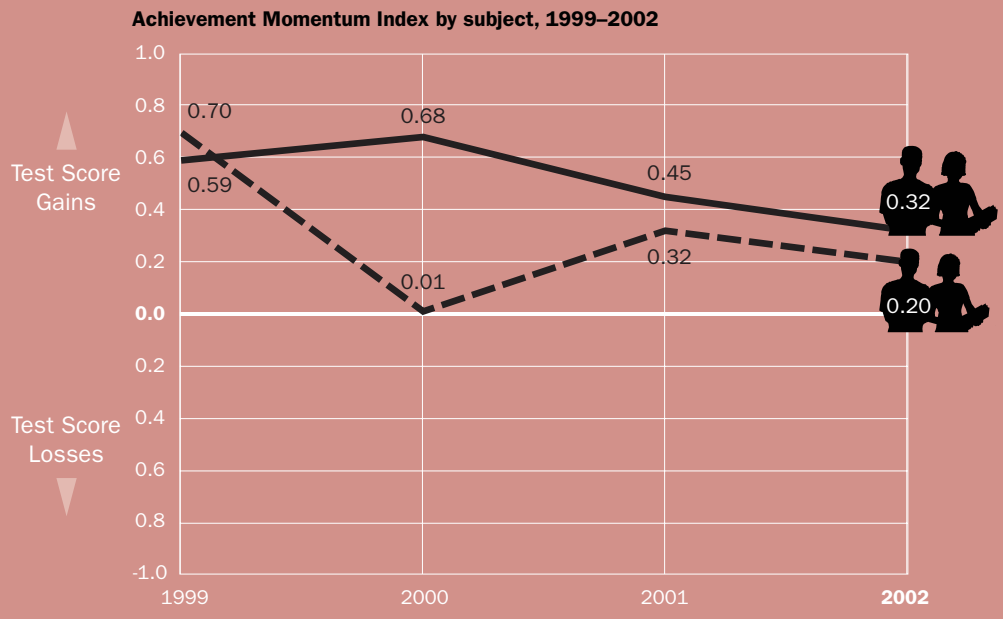
Source: Data obtained from 49 states (and the District of Columbia) that administered the same achievement test in consecutive years.

State tests show math gains outpacing gains in reading…

Fig 1-1

But improvement is slowing in both subjects.

Source: Test data obtained from 49 states (and the District of Columbia) that administered the same achievement test in consecutive years.



State Test Results
(2001–2002)

Table 1-4

Reading

		Grade 4
Improvement	↑	16 (48%)
No Change	↔	6 (18%)
Decline	↓	11 (33%)
Total		33 states
		Grade 5
Improvement	↑	8 (40%)
No Change	↔	6 (30%)
Decline	↓	6 (30%)
Total		20 states
		Grade 8
Improvement	↑	12 (32%)
No Change	↔	11 (30%)
Decline	↓	14 (38%)
Total		37 states
		Grade 10
Improvement	↑	5 (36%)
No Change	↔	3 (21%)
Decline	↓	6 (43%)
Total		14 states

Source: Data obtained from 49 states (and the District of Columbia) that administered the same achievement test in consecutive years.

Introduction to NAEP

The National Assessment of Educational Progress (NAEP) is commonly referred to as the Nation's Report Card. Since 1969, it has been the only nationally representative and continuing assessment of what America's students know and can do in academic subject areas. The number of students selected for a NAEP national sample for any particular grade and subject is 7,000 or more.

There are three NAEP test types: (1) the main NAEP gauges national achievement while also reflecting current practices in curriculum and assessment, (2) the long-term trend NAEP allows reliable measurement of change in national achievement over time, and (3) the state NAEP measures achievement of students in participating states. These assessments use distinct data collection procedures and separate samples of students.

Since 1990, the main and state math tests have been governed by a framework reflecting recommendations of the National Council of Teachers of Mathematics (NCTM). The long-term trend test consists of essentially the same items and test procedures used in 1973.

Achievement Momentum Index

The index is simple to understand. For any particular year, the index ranges from –1.00 to +1.00. Each state's contribution to the index is weighted to represent its share of the nation's student population. The calculations include reading and math scores for grades 4, 8, and 10. For states reporting higher test scores than the previous year, their population weights are multiplied by +1.00. For states reporting lower scores, their population weights are multiplied by –1.00. States reporting the same scores are set at 0.00. The products are summed to create the index.

Interpreting the index is straightforward. A positive momentum score means test scores are going up. A negative score indicates they are going down. And a 0.00 means that scores are unchanged or that the numbers of students in improving and declining states are about equal. If every state reports test scores that have improved from the previous year, the momentum index will read +1.00. If every state reports test scores that have declined, the index will read –1.00. The closest corollary to the index is a corporation's annual statement of profits or losses, which compares current performance with performance in the previous year. Since the index is population weighted, a gain in a large state like California can offset losses in several small states and vice versa.

Figures 1-1 and 1-2 display the momentum indices from 1999 to 2002. Figure 1-1 reports by subject area, with scores averaged across grades 4, 8, and 10. And Figure 1-2 reports by grade level, with math and reading scores averaged at each grade. As shown in Figure 1-1, scores in reading and math remained positive in 2002 but less so than in recent years. Progress has slowed. The highest reading scores were recorded in 1999, the first year the Brown Center began collecting state test data. Math scores peaked in 2000. Nevertheless, both momentum indices are signaling that students continue to improve, albeit more slowly, in reading and math.

Rural schools are America's forgotten educational institutions. Educational reformers generate moral energy by championing the cause of urban education.

Figure 1-2 displays academic progress by grade. Scores at the fourth grade level remain strong, with 2002 the best year of the four. Eighth and tenth graders continue to tally test score gains, but momentum has tailed off since 2000. Here, the positive signal for eighth and tenth grades in 2002 is contrary to that given above by Tables 1-3 and 1-4 for the same year. The momentum index was driven into positive territory by gains in California and Texas, two large states.

The latest federal and state test results give a clear indication of how well American students are learning. Student achievement continues to improve in both reading and math, but at a slower pace than three or four years ago. Math gains outpace reading gains, and elementary grade children are improving more than middle and high school students. The analysis now shifts to an often overlooked population in discussions of test scores.

Rural Schools

Rural schools are America's forgotten educational institutions. Educational reformers generate moral energy by championing the cause of urban education. This focus also pays political dividends. Federal and state officials invariably craft education policies with urban schooling as a central concern. It is no accident that education's two most enduring policy debates—concerning parental choice and school finance—have been largely contested over the effects of policy on children in big cities.

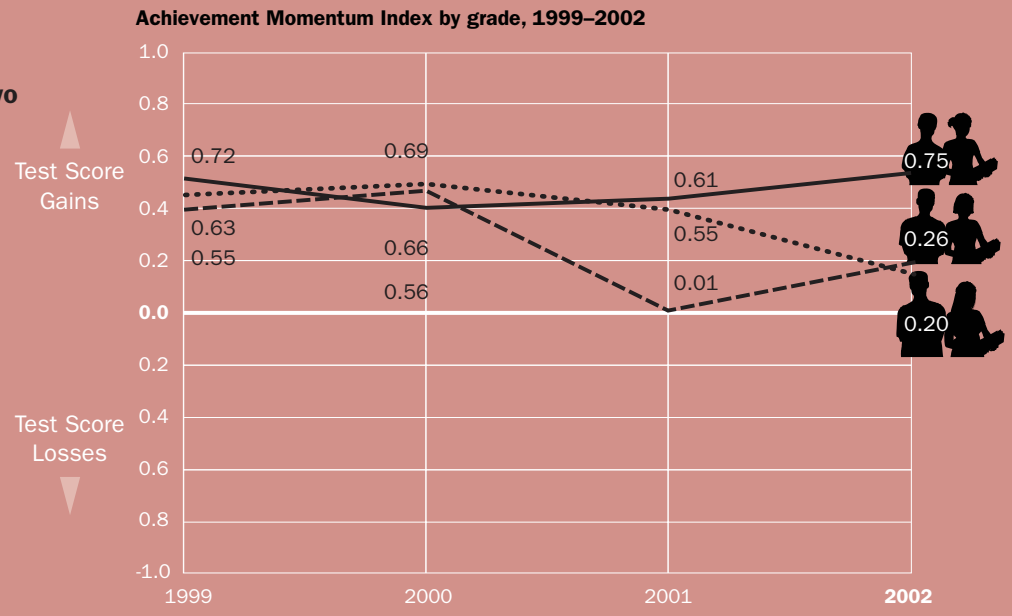
The online archives of *Education Week*, the national journal of record in the field of education, offer a yardstick for measuring

State tests show 4th graders making greater gains than older students...

Fig 1-2

But the progress of 10th graders has slowed for two consecutive years.

Source: Test data obtained from 49 states (and the District of Columbia) that administered the same achievement test in consecutive years.



Characteristics of Urban, Suburban, and Rural Schools

Table 1-5

	Urban	Suburban	Rural
% of Nation's Students	30	43	27
% of Nation's Schools	24	34	42
Mean School Size	663	665	392
% Free/Reduced Lunch	57	32	39
% White	37	66	80
% Black	33	13	8
% Hispanic	24	15	7
% Asian	5	5	1
% Native American	1	1	4
Per Pupil Expenditure	$6,575	$6,229	$5,734
% of Revenue from State	49	44	53

Source: National Center for Educational Statistics (NCES), "Navigating Resources for Rural Schools: Public Elementary and Secondary Students, Schools, Pupil/Teacher Ratios, and Finances, by Type of Locale: 1998 and 1999", (NCES 2001); National Center for Educational Statistics (NCES), *2002 Common Core of Data*.

media coverage of education in different types of communities. Consider the number of times "urban, " "rural, " and "suburban" were mentioned in *Education Week* from 2000 through 2002. "Rural" appeared 425 times, "suburban" 346 times, and "urban" 916 times.[5] Of all such mentions, the word "rural" appeared 25% of the time, "suburban" 21%, and "urban" 54%.

Note that suburban schools received even less attention than rural schools. That is probably because they are assumed to be amply endowed with resources and to be at least adequate, if not excellent, in quality. Polls show that parents and the general public are overwhelmingly satisfied with suburban schools. But what about rural schools? They are rarely mentioned in the public debate over school reform. Are they as successful as suburban schools? What kinds of students attend rural schools? Do they learn as much as students in other settings?

Characteristics of Rural Schools

Rural schools are not monolithic. They look very different in different regions of the country, serve different kinds of students, operate in different economic and social contexts, and encounter different challenges. Table 1-5 compares urban, suburban, and rural schools on several characteristics. However, as one reads the ensuing discussion, it should be remembered that for every characteristic that is exhibited by most rural schools, pockets of rural schools exist with contrasting profiles.

Rural schools enroll only 27% of the nation's students but occupy 42% of school buildings. As a consequence, the average rural school is quite small. It serves only 392 students, which is about 40% smaller than the average urban or suburban school. Compared to the typical urban school, the typical rural school has a smaller proportion of students who qualify for free and reduced lunch, a measure of poverty. And rural schools serve a much larger proportion of white students than urban or suburban schools. The black and Hispanic populations are sparse in rural schools. Only 8% of rural students are black and 7% are Hispanic, compared to 33% who are black and 24% who are Hispanic in urban schools.

Rural schools receive less funding than most schools, about 13% less than urban schools ($5,734 vs. $6,575). In part, the funding shortfall may be attributable to a greater reliance by rural schools on state funds. Rural schools receive 53% of their revenues from states, compared to 44% for suburban schools. Urban and suburban districts tap local property wealth to boost revenues. A lower cost of living also undoubtedly plays a part. Recent calculations by the Economic Research Bureau estimate that the cost of living in rural areas is 16% less than in urban areas.[6]

The problems rural schools face in gaining sufficient financial resources and well-trained teachers have been documented

by The Rural School and Community Trust.[7] Rural schools may also lack other types of education resources. Some of the shortages stem from rural schools being exceptionally small. Small schools offer fewer curriculum options and provide fewer opportunities for high achievers to enroll in advanced placement or International Baccalaureate programs. Extracurricular activities are limited. Even rural schools that possess the facilities to offer a specialized program—say, an advanced placement chemistry class—may have a difficult time staffing it with a well-qualified teacher.

Choice and Public Support

Parents exercise less choice in rural areas. Only 15.9% of students in rural areas attend public or private schools of choice, compared to 28.7% in non-rural areas. It is difficult to say whether this pattern is the result of short supply or lack of demand. Rural parents have fewer alternatives to conventional public schools, either in the private sector or in the public sector through magnet or charter schools. Little more than 5% of rural students attend private schools, about half of the national percentage.[8]

Rural parents are satisfied with public schools, and the support for public schools extends into the community. In the 2002 Phi Delta Kappa/Gallup Poll, rural residents gave their schools higher grades than either suburban or urban residents. In awarding letter grades to local public schools, 53% of rural residents assigned an A or B, compared to 51% of suburban residents and 32% of urban residents. In a survey of students conducted by Metropolitan Life, 59% of rural students described parental and community

What are z-scores?

A z-score is the distance from the mean expressed in standard deviation units. A z-score of 0.00 is, by definition, the mean. A z-score of 1.00 indicates that a school's test scores are one standard deviation above the mean, approximately at the 84th percentile. A z-score of -1.00 puts a school at approximately the 16th percentile.

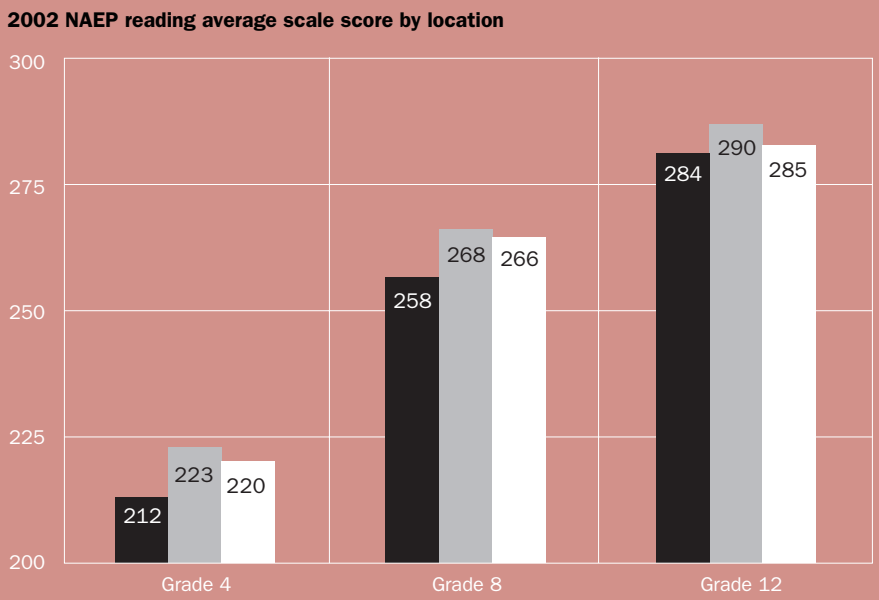
Rural 4th graders achieve at levels close to that of suburban students.

Fig 1-3

By 12th grade, rural students' performance resembles that of urban students.

Source: As measured by the National Assessment of Educational Progress (NAEP), for grades 4, 8, and 12. NAEP data are expressed as scale scores, ranging from 0 to 500.

Urban
Suburban
Rural



Achievement and Socioeconomic Characteristics for Rural Schools (2002)

Table 1-6

	Schools		*Poverty*		*Race*		*Achievement*
State	Number of Rural Schools	% in State	% Free Lunch in Rural Schools	State Average	% Non-white in Rural Schools	State Average	Mean Z-score in Rural Schools
Arizona	464	27.3	34.1	43.3	53.6	50.3	–0.23*
California	1,106	14.4	44.3	48.1	37.1	59.8	0.11*
Colorado	615	40.1	30.8	31.2	21.5	31.6	0.20*
Florida	682	22.8	44.1	47.4	31.8	47.4	0.16*
Georgia	990	50.8	47.9	50.0	34.9	47.7	0.10*
Louisiana	620	45.0	62.5	64.0	40.8	52.1	0.05
Massachusetts	381	21.1	13.1	27.0	5.0	23.8	0.28*
Michigan	1,412	40.4	33.4	36.6	7.8	25.5	0.19*
Minnesota	833	51.7	32.4	31.4	8.8	17.9	–0.07
North Carolina	1,215	56.6	46.1	45.2	35.1	41.4	0.06
Pennsylvania	1,267	40.3	25.9	29.9	4.6	20.6	0.16*
South Carolina	573	54.5	59.6	54.9	49.9	48.3	–0.21*
Texas	2,344	34.9	47.0	48.1	39.5	55.5	0.16*
Wisconsin	1,103	54.1	25.1	28.2	6.0	17.4	0.20*

* $\rho < .05$, two-tailed test of z-score = 0

NOTE: Arizona's poverty data are from 2001. Test scores collected from each state's department of education.

Source: Demographic data from the National Center for Educational Statistics (NCES), *2002 Common Core of Data*.

support for their schools as excellent or pretty good. Approximately 51% of suburban students and 44% of urban students offered such a positive assessment of support for their schools. Compared to suburban and urban students, rural students were also more likely to give their teachers high grades on such critical aspects of teaching as understanding subject matter, treating students with respect, helping students, and maintaining control and discipline in the classroom.[9] A recent study by Richard Ingersoll found that rural schools have lower teacher turnover than other schools nationally. Relatively stable teaching staffs may contribute to the confidence that local residents have in rural schools.[10]

Achievement

How do rural students perform on state achievement tests? Table 1-6 displays 2002 test data from fourteen states. Reading and math scores were combined for grades 4, 8, and 10. Because the states give different tests and report scores on different scales, Brown Center researchers converted school test scores to z-scores, which designate where schools fall on the distribution of all scores within a state. By definition, z-scores have a mean of 0.00 and standard deviation of 1.00. For each of the fourteen states, the average z-score of rural schools is reported in the final column of Table 1-6.

Rural schools are generally performing quite well, scoring above average in all states except for Arizona, Minnesota, and South Carolina. Solid test scores may be a key reason why rural schools enjoy broad community support. It is impossible for these data to tell us much about why rural students do so well. Almost all of the test score advantage washed out when regression analyses controlled for schools' racial composition and percentage of students in poverty. Those demographic statistics are also listed in the table.

Federal NAEP data provide another source of data on rural school achievement. Figure 1-3 displays the 2002 NAEP reading scores by grade level and location. At fourth grade, students in rural schools achieve at levels similar to students in suburban schools, scoring one point above the national average of 219. By twelfth grade, rural students score about the same as urban students, two points below the national average of 287. This slight slippage in rural students' scores from fourth to twelfth grades shows up in previous NAEP tests—in reading as well as other subjects. Rural students appear to do better on achievements tests in elementary school than in high school.

A more profound cause for concern can be found in data gathered by the National Center for Education Statistics in 1993-94. First, the good news (see Figure 1-4). In a survey of schools with a twelfth

grade, rural schools reported a low drop-out rate in the senior year. Of students who started their senior year in the fall, 94.6% in rural schools graduated in June, compared to 92.5% in suburban schools and 89.7% in urban schools. However, the bad news is that the promising graduation rate does not convert to a high college application rate. Only 54.3% of rural seniors apply to college, compared to 56.5% of urban and 61.6% of suburban seniors. Put another way, for every 100 suburban high school graduates, 67 students apply to college. The comparable figure for urban students is 63 students. For rural schools, it is 57 students.

Nationwide, tens of thousands of rural students are slipping through the cracks in the transition from high school to college. As reported by a recent University of Chicago study, college matriculation rates may be pushed down by students wanting to stay close to home after high school. In many rural areas, post-secondary institutions simply may not exist. Moreover, rural students frequently believe that local community colleges offer the same college experience as far-away four-year institutions.[11]

Summary and Discussion

This section of the Brown Center Report analyzed the most recent data on reading and math achievement. Overall, test scores are rising. Students continue to make solid progress in mathematics, but reading achievement is, at best, only inching forward. Younger students are making greater academic gains than older students.

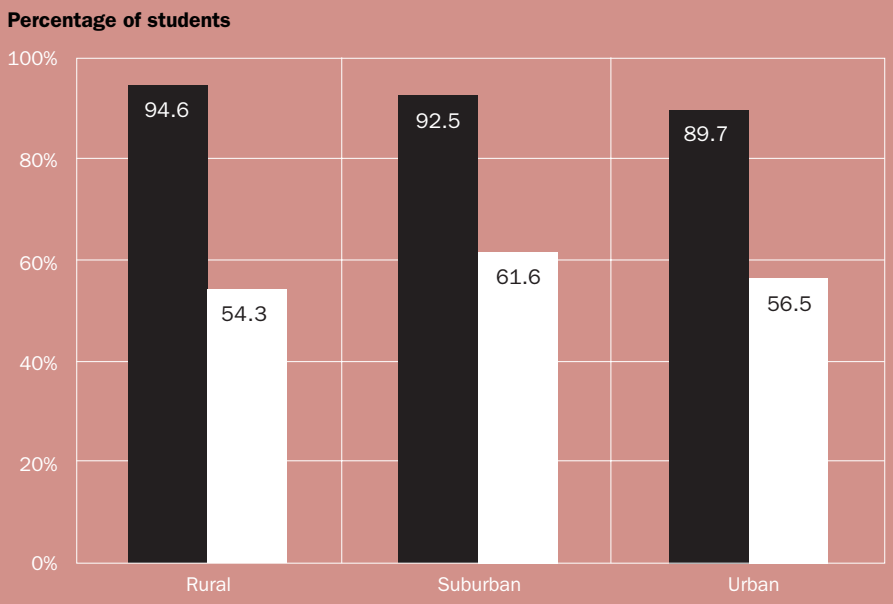
Students in rural schools score well above average on state tests of academic achievement. Rural students who begin their

Rural 12th graders graduate from high schools in large numbers…

Fig 1-4

But they are under-represented among college applicants.

Source: Data obtained from the NCES website "Navigating Resources for Rural Schools": http://nces.ed.gov/surveys/ruraled



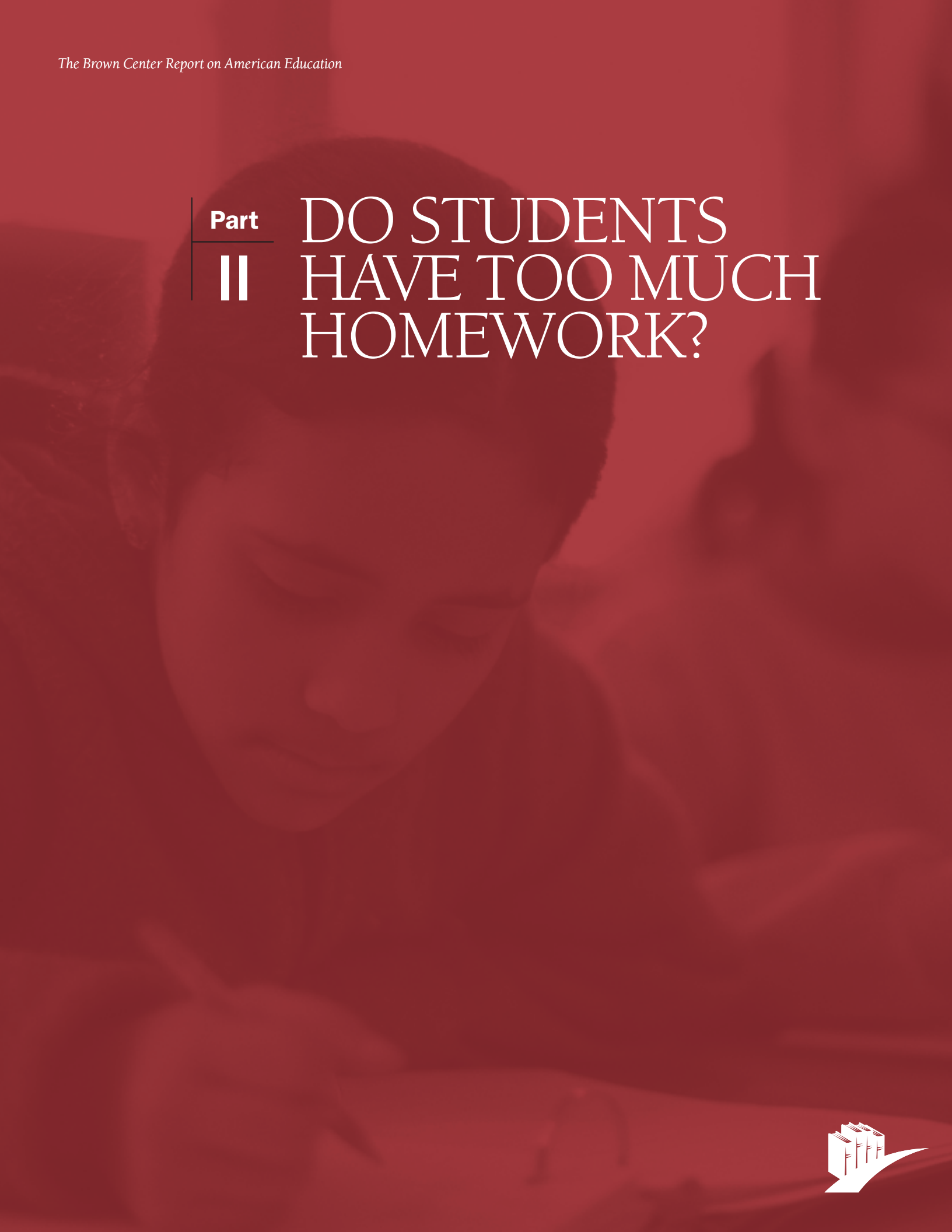
Nationwide, tens of thousands of rural students are slipping through the cracks in the transition from high school to college.

senior year in high school are also more likely to graduate in June than seniors in urban or suburban schools. But the high test scores and graduation rates are not reflected in high rates of applying to college. Rural students are less likely to apply to college than urban and suburban students. The result is the loss of potential for rural youth and a loss of talent for the nation's colleges and universities.

Recent studies have highlighted several unique challenges facing rural schools. Schools in rural areas find recruiting new teachers difficult. Rural states have many teachers who teach several subjects, making it hard to meet the requirement of No Child Left Behind that teachers major in the academic subject they teach or pass a test demonstrating mastery of the subject. The stipulation that parents whose children attend failing schools be given the choice of attending another school nearby is a daunting endeavor for some rural schools. On a visit to Alaska in May 2003, Secretary of Education Rod Paige visited a public school located on an island where the closest public school is 164 miles away—across the Bering Sea.[12]

These are legitimate problems, and policymakers should make every effort to see that they are solved. Policymakers should also consider programs designed to boost the rate of rural students applying to colleges and universities. The academic futures of rural youth should not end upon completion of high school.

Part II DO STUDENTS HAVE TOO MUCH HOMEWORK?



SEVERAL MAJOR NEWSPAPERS AND MAGAZINES HAVE RUN ARTICLES describing a backlash against homework. The typical story is that dramatic increases in the amount of homework are robbing American students of their childhood, turning kids off learning, and destroying family life. A revolution is brewing. Kids are buried in homework. Parents are hopping mad, and they're going to do something about it.

Almost everything in this story is wrong. A wealth of data exists on the topic of homework. The evidence paints a more placid picture than the stories in the press. The most reliable data support the following conclusions: 1) the typical student, even in high school, does not spend more than an hour per day on homework, 2) the homework load has not changed much since the 1980s, 3) the students whose homework has increased in the past decade are those who previously had no homework and now have a small amount, 4) most parents feel the homework load is about right and, of those who would like to change it, more parents would rather see homework increased than decreased.

Why is it important to get the homework story right? Mainly because it is positively associated with student learning. Research shows that the relationship of homework with student achievement is positive for both middle and high school students and neutral for elementary school students. The research does not prove causality, an ever-present difficulty with research on many educational practices. High-achieving students in high school, for example, may do more homework because they enjoy studying. They take tough classes that require a lot of work. That does not necessarily mean that homework is boosting their achievement. Low-achieving students in elementary school, on the other hand, may do more homework because they are struggling to catch up. The homework is not causing their learning problems.[13]

Despite these limitations, the evidence is convincing enough to provide sober guidance on the current controversy. Excessive homework is not a common problem. The critics of homework need to produce some very powerful evidence before policymakers start mandating reductions in homework or even banning it altogether. To date, the evidence put forth by homework critics has been weak.

So where has the notion of a crushing homework burden come from? And why has the press latched onto it with such zeal? Note that the summary above employs terms such as "typical student" and "most parents." There are children with too much homework. There are also parents who believe, correctly, that their kids are overworked. Generalizations, however, are meant to apply generally. Anecdotes can be woven together to create dramatic stories, but if they apply only to a small minority of people, they should not be construed to depict the experience of the average person. Most parents and

Schools piling it on. Kids exhausted. Parents fighting back. Families being eaten. Is this the truth about homework?

children are comfortable with the current amount of homework. The amount of homework assigned today does not appear out of line with the amount of homework assigned in the past.

Yet dramatic stories abound. In 1998, *Newsweek* ran an article called "Homework Doesn't Help," which begins by telling the story of Adam, whose "long, sad battle with homework" reached a crescendo of three hours per night in fourth grade. The article warns that "the trend among schools to pile on more homework, starting in kindergarten, could backfire." Then *Time* published a 1999 piece, "The Homework Ate My Family: Kids Are Dazed, Parents Are Stressed, Why Piling It On Is Hurting Students." In 2003, *People* produced "Overbooked: Four Hours of Homework for a Third Grader? Exhausted Kids (and Parents) Fight Back." Newspapers have contributed, too. Since 2001, feature stories about onerous amounts of homework have appeared in the *New York Times, Washington Post, Chicago Sun-Times, Los Angeles Times, Seattle Times, Raleigh News and Observer, The Tennessean, Lexington Herald Leader,* and *Tampa Tribune*.

Schools piling it on. Kids exhausted. Parents fighting back. Families being eaten. Is this the truth about homework? Let's examine data addressing two questions. How much homework do today's students have? Has the amount changed appreciably over time?

The Michigan Study

The study most often cited to support the idea that homework has gotten out of control was conducted by the Population Studies Center at the Institute for Social Research, University of Michigan. The research was led by Sandra L. Hofferth and John F. Sandberg and focused on how families spend their time. Analyzing twenty-four hour time diaries recorded by randomly selected families, the researchers compared data on the activities of children ages 3-12 in 1981 and 1997. Table 2-1 shows the average number of minutes devoted to activities that consume at least two hours of children's time per week.[14]

Note that the relevant response category is "studying," which certainly includes homework but could also include self-initiated studying or studying that parents insist children do, irrespective of whether the school sends work home. It ranks quite low on the list of activities that absorb children's time at home. More than studying, kids are sleeping, going to school, playing, eating, attending to personal care, participating in sports, going to daycare, shopping, visiting, and working around the house. To put it in perspective, studying ranks close to the category "other passive leisure"—board games, collecting baseball cards, and the like.

For all ages, the amount of weekly time devoted to studying increased from one hour 53 minutes in 1981 to two hours 16 minutes in 1997, an increase of 23 minutes. That is 19 to 27 minutes per day of studying in 1997 and an increase of about 3-5 minutes per day since 1981, depending on

AN ERRONEOUS VIEW FROM THE POPULAR PRESS

© 1999 TIME Inc., reprinted by permission.

Weekly Time Spent on Activities by Age
(hours:minutes)

Table 2-1

	Age 3-5			Age 6-8			Age 9-12			All Ages		
	1981 (N=61)	1997 (N=665)		1981 (N=60)	1997 (N=602)		1981 (N=101)	1997 (N=851)		1981 (N=222)	1997 (N=2119)	
Sleeping	77:19	76:11		70:04	70:49		65:36	67:24	**	70:01	71:07	*
School	14:30	12:05		27:52	32:46	**	29:02	34:03	***	24:45	26:48	**
Television	15:14	13:52		15:55	12:54	*	20:01	13:36	***	17:35	13:29	***
Playing	25:50	17:21	***	14:58	11:10	**	7:24	8:54	*	14:30	12:12	***
Eating	9:43	9:24		9:08	8:05	**	8:13	7:23	**	8:52	8:13	***
Personal Care	6:18	8:32	***	6:13	7:53	***	6:21	7:53	***	6:18	8:05	***
Sports	1:31	4:08	***	6:01	5:13		4:51	6:33	**	4:15	5:25	
Daycare	0:10	7:30		0:12	1:33	***	0:18	0:24		0:14	2:57	***
Shopping	2:35	3:44	*	0:59	2:38	***	1:57	2:24		1:52	2:53	
Visiting	2:58	3:04		3:40	2:48		3:48	2:40	**	3:32	2:50	**
Household Work	2:09	2:20		2:49	2:07		5:18	3:42	***	3:46	2:49	***
Studying	0:25	0:36		0:52	2:08	***	3:22	3:41		1:53	2:16	*
Other Passive Leisure	2:59	2:35		1:58	1:33		3:24	2:19	*	2:53	2:11	***

*ρ< .05, **ρ<.01, ***ρ<.001, for 1981-1997 changes

Source: Data resorted from Table 2, Sandra L. Hofferth and John F. Sandberg, "Changes in American Children's Use of Time, 1981-1997," *Children at the Millennium: Where Have We Come From, Where Are We Going?* edited by S. Hofferth and T. Owens, (Elsevier Science Ltd., 2001), pp. 193-229.

whether weekends are counted. It does not seem like a backbreaking load. Nor an extraordinary increase. Time spent on personal care and sports increased much more. Watching television decreased by four hours per week, and some of this freed-up time may have gone to the 23 minutes of increased study time. That sounds like cause for celebration, not hand wringing. Children have not abandoned TVs. The thirteen and a half hours that children continue to devote to television each week is more than six times the amount of time spent studying.

Changes in time devoted to studying were driven by a large change for ages 6-8, mostly first through third graders. The average amount of study time for that age group rose from 52 minutes a week to two hours and 8 minutes, an increase of 76 minutes. Based on a seven day week, the daily equivalents are about 7 minutes of homework in 1981 and 18 minutes in 1997, an increase of 10-11 minutes per day. For other age groups, changes in the homework load have been trivial.

Now we've reached the nub of the matter. If one is determined to use the Michigan data to argue that homework is onerous, the analysis must be limited to changes that occurred with ages 6-8. Even for that age group, the change in study time was less than meets the eye. The total increase was no more than 11 minutes per day. And the average went up primarily because the percentage of children who had no homework at all declined. In 1981, only a third of children ages 6-8 spent any time at all on studying. In 1997, about half did. So the rising average has nothing to do with a crushing homework burden. It is largely attributable to children with no homework now receiving a small amount.

A remarkable story—overlooked in press coverage of the Michigan study—is found in the other age groups. In every case, fewer children were doing homework in 1997 than in 1981 (see Figure 2-1, page 20). Even among children ages 9-12, the oldest group in the study, only 62% spent time studying at home in 1997, down from 82% in 1981. In other words, more than one-third of American school children ages 9-12, who are mostly attending fourth through seventh grades, do not do any

homework. For the broader group of children in the Michigan study, ages 3-12, half did no homework in 1997.

The Michigan study is an example of carefully conducted social science and the researchers' dispassionate reporting of results. The authors explain that fluctuations in the amount of time that children engage in various activities should be understood in the larger context of change occurring in families. Compared to 1981, children now spend less time in discretionary activities such as playing and watching television and more time in structured activities such as studying, reading, and participating in arts and sports programs. With both parents working and more things to accomplish during the day, today's families manage children's schedules more carefully. Nevertheless, the study's findings have been used to give the impression that a rising homework burden is swamping families. "Homework Hours Tripled Since 1980," ran the Associated Press headline.[15]

AN ERRONEOUS VIEW FROM THE POPULAR PRESS


Homework Doesn't Help

Every night, millions of parents and kids shed blood, sweat and tears over the kitchen table. Now some researchers say these dreaded lessons are generally pointless until middle school. By Sharon Begley

From Newsweek, March 30 © 1998 Newsweek, Inc. All rights reserved. Reprinted by permission.

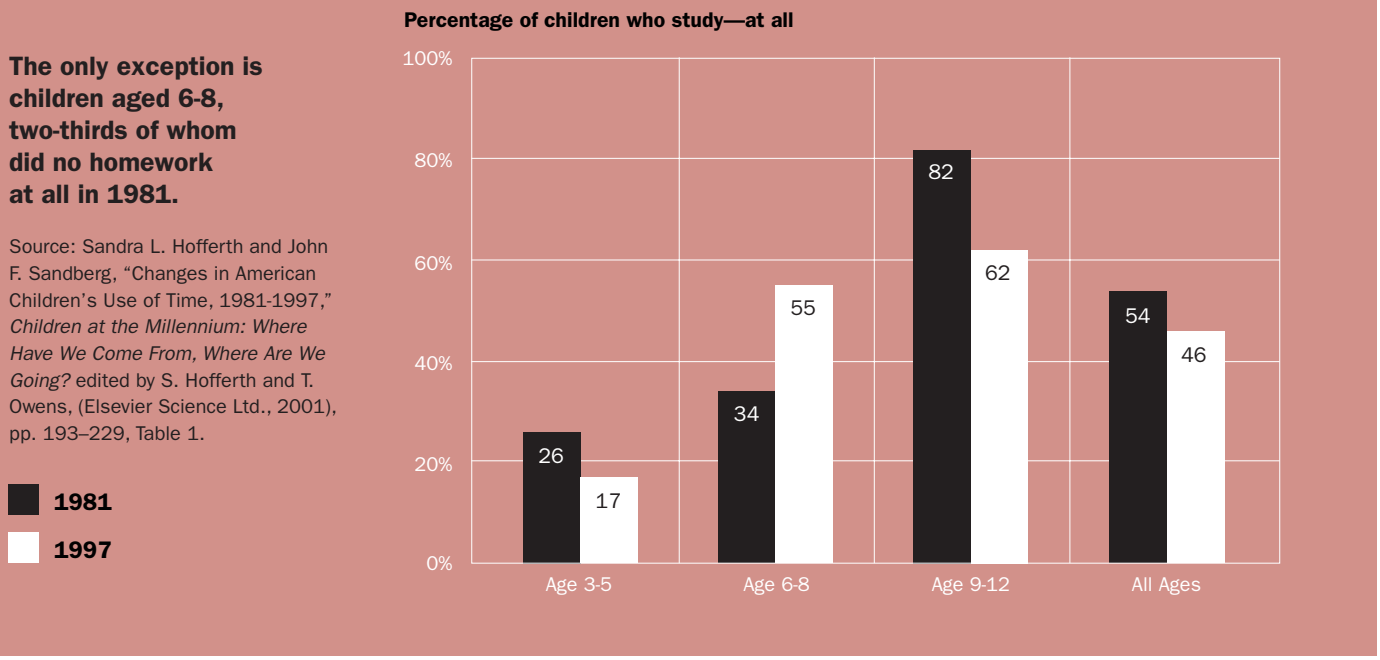
This impression does not reflect how the Michigan study's authors interpret their own findings. As to whether the amount of time studying is large or small, Hofferth and Sandberg conclude, "While time spent studying increased significantly between

Fewer children were doing homework in 1997 than in 1981.

Fig 2-1

The only exception is children aged 6-8, two-thirds of whom did no homework at all in 1981.

Source: Sandra L. Hofferth and John F. Sandberg, "Changes in American Children's Use of Time, 1981-1997," *Children at the Millennium: Where Have We Come From, Where Are We Going?* edited by S. Hofferth and T. Owens, (Elsevier Science Ltd., 2001), pp. 193–229, Table 1.



Students Were Asked:
How much time did you spend on homework yesterday?
(percentage of students)

Table 2-2

Age 9

	1984	1988	1992	1996	1999
None Assigned	36	29	32	26	26
Did Not Do It	4	4	4	4	4
< 1 hr.	41	47	47	53	53
1-2 hrs.	13	13	12	13	12
> 2 hrs.	6	7	5	4	5

Age 13

	1980	1984	1988	1992	1996	1999
None Assigned	30	23	17	21	22	24
Did Not Do It	6	4	4	4	5	5
< 1 hr.	32	36	37	36	37	37
1-2 hrs.	24	29	30	29	27	26
> 2 hrs.	7	9	11	10	8	8

Age 17

	1980	1984	1988	1992	1996	1999
None Assigned	32	22	21	22	23	26
Did Not Do It	12	11	13	12	13	13
< 1 hr.	24	26	28	29	28	26
1-2 hrs.	23	27	26	25	24	23
> 2 hrs.	10	13	12	11	11	12

NOTE: Age 9 students were not surveyed on homework until 1984.

Source: NAEP 1999 Long-term Trend Reading Summary Data Tables for ages 9, 13, and 17.

1981 and 1997, the time spent studying is still small, only about two hours per week, and the increase was concentrated among 6-8 year olds." As to the cause of the increase among 6-8 year olds, the researchers explain, "The main reason for the increase in studying among 6-8 year olds was an increase in the proportion who did some studying at all, from one-third to more than half." Of the dozens of press accounts that cited figures from the Michigan study and were reviewed for this Brown Center Report, not a single one quoted how the researchers themselves interpreted their data.[16]

Asking Kids How Much Homework They Have

As just reported, about 50% of kids have no homework at all, which means that a lot of zeros are going into computing the average student's homework load. Even a trivial increase in the average could hide the fact that students who once had some homework are suddenly getting a lot more. An excellent source of data to explore whether this is happening is the National Assessment of Educational Progress (NAEP), which for two decades has been asking a nationally representative sample of students how much homework they had the previous day. Table 2-2 shows the responses for ages 9, 13, and 17 since the early 1980s.[17]

The NAEP data reinforce the notion that it is students who once had no homework who have experienced a change. They now have some, but not a lot. For 9 year olds, the question about homework was first asked in 1984. The proportion with no assigned homework declined by ten percentage points between 1984 and 1999, while those with less than one hour, the lowest category indicating any homework, increased by twelve points. The same shift, although less pronounced, is evident at age 13. Students without assigned homework declined by six percentage points from 1980 to 1999, and there was a five point rise in students with less than an hour.

Seventeen year olds' homework appears to have peaked in the surveys conducted from 1984 through 1992, with slight decreases since then. Across all three age groups, the percentage of students with an hour or more of homework—the category where the horror stories should show up—has declined since 1984. In 1999 only about one-third of students at ages 13 and 17 had an hour or more per

Table 2-3

Percentage of Students Reporting Less Than an Hour of Daily Homework

Age	Percent
9 Year Olds	83%
13 Year Olds	66%
17 Year Olds	65%

Source: NAEP 1999 Long-term Trend Reading Summary Data Tables for ages 9, 13, and 17.

night. And combining the responses "none assigned," "did not do it," and "less than 1 hr" yields the percentage of children with less than an hour of daily homework. For 1999, the figures are 83% at age 9, 66% at age 13, and 65% at age 17 (see Table 2-3).

Based on these statistics, it appears that less than one hour per day is the typical amount of homework for American children, even for students in high school. Remember the third grader in the *Newsweek* story with three hours of homework? Or the families in the *Time* article, "The Homework Ate My Family?" Or *People* asking whether four hours was too much homework for a third grader? These tales, though very real to the children and parents experiencing them, are what statisticians refer to as "outliers." They are not representative. A whopping 83% of 9 year olds have an hour or less of daily homework. Students with more than two hours constitute only 5% of 9 year olds. Reasonable people could argue that two hours is too much homework for a third grader, at least on a regular basis. But according to survey data, that amount of homework is quite rare.

High School Students

Interestingly, high school students are usually left out of the public discussions of homework. Most of the stories of schools "piling it on" focus on young children. The NAEP data give a hint that high school students' homework load might be considered light, with only about a third of 17 year olds having an hour or more of daily homework. That does not sound like a lot for students who are within a year of graduating from high school. How does it compare with students in other countries? It is an extraordinarily light load. The Third International Mathematics and Science Survey in 1995 asked students in their final year of secondary school how many hours per day they spent studying or doing homework. Of twenty nations, the U.S. ranked near the bottom, tied for the next-to-last position. Students in France, Italy, Russia, and South Africa reported spending at least twice as much time on homework as American students.[18]

Even when surveys are restricted to the top high school students in the country, those who go on to attend college, the homework load does not appear heavy. Researchers at UCLA have been surveying college freshmen nationwide annually since 1966. The researchers began asking a question about homework in 1987. That year, 47% of respondents reported that they spent more than five hours per week studying or doing homework during the senior year of high school. The figure has dropped every year since then, hitting a record low of 34% in 2002 (see Figure 2-2). That means two-thirds of college-bound high school seniors have no more than one hour of homework per night and none on weekends. And remember that these are students who were preparing for college and probably took the toughest courses that high schools have to offer—honors, Advanced Placement, and International Baccalaureate.[19]

Two additional findings from the UCLA survey stand out. First, at the same time students are reporting record lows in the amount of homework given in high school, they are reporting record high grade point averages. Almost half, 46%, of the college freshmen reported graduating from high school with an A average. Second, in a pattern remarkably similar to the young children in the Michigan study, college students in the UCLA survey seem to live well-rounded lives. Socializing with friends, working at paid employment, and exercise and sports took up more of the students' time as high school seniors than

Most parents are satisfied with the amount of homework, and of those who favor a change, more parents would increase rather than decrease the amount.

studying and homework. About one-fourth of college freshmen report that they spent more than five hours per week partying or watching television as high school seniors, a little less than the one-third who spent that much time studying (see Figure 2-3, page 24).

What Do Parents Think?

Impressions matter, and despite the large amount of empirical evidence to the contrary, parents may think children have too much homework. If so, that would explain the reports of rebellions cropping up in local areas. What do parents think about the homework load? Public Agenda Foundation conducted a poll on the matter in 2000, surveying a representative sample of parents. They were asked to evaluate their children's homework load (see Figure 2-4, page 25). Almost two-thirds, 64%, described the amount of homework as "about the right amount," 25% said there was "too little homework," and 10% responded that there was "too much homework" (2% responded "don't know").[20] These attitudes are the opposite of those expressed by parents in the anti-homework articles. Most parents are satisfied with the amount of homework, and of those who favor a change, more parents would increase rather than decrease the amount. Only one out of ten parents believe there is too much homework.

Summary and Discussion

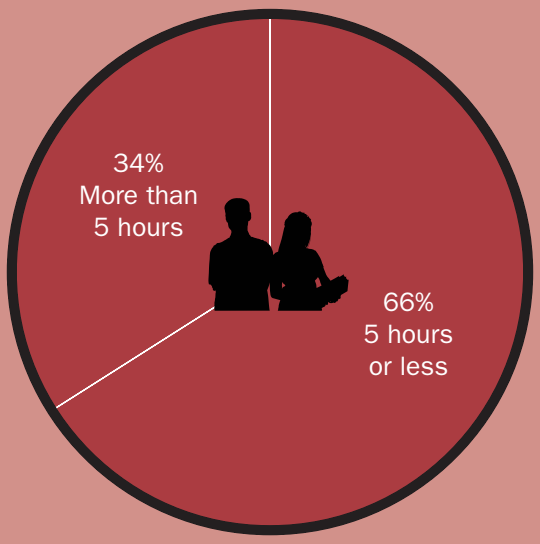
In recent years, newspapers and magazines have published several stories about a growing amount of homework in the United States. Facing mounting pressures to perform, schools are piling on the homework,

Two-thirds of college-bound seniors do five hours or less of homework per week.

Fig 2-2

College freshmen were asked: During your last year in high school, how many hours did you spend in a typical week studying or doing homework?

Source: Linda Sax, J.A. Lindholm, A.W. Astin, W.S. Korn, and K.M. Mahoney, *The American Freshman: National Norms for Fall 2002,* (Higher Education Research Institute, UCLA, 2002).



According to UCLA's annual survey of college freshmen, the homework required in the senior year of high school is particularly light. And it has been declining since the late 1980s.

kids are stressed out, and parents are demanding relief.

The stories are misleading. They do not reflect the experiences of a majority—or even a significant minority—of American school children. The best social science on the topic, which consist of studies collecting data from nationally representative samples of students, are in general agreement. A University of Michigan study shows that homework for elementary schoolchildren has increased slightly since the early 1980s. But the increase was due to fewer children ages 6-8 getting no homework and more children receiving some homework. Homework has not become overwhelming. Data from NAEP indicate that more than 80% of children at age 9 have less than an hour of homework per day. Only one out of twenty have more than two hours. For students in middle school and high school, the amount of homework has remained stable—and hardly burdensome. According to UCLA's annual survey of college freshmen, the homework required in the senior year of high school is particularly light. And it has been declining since the late 1980s. According to the TIMSS international survey, American high school students have one of the lightest homework loads in the world. Parents are not concerned about too much homework. According to a study by the Public Agenda Foundation, only one of ten parents want less homework for their children, 25% want more, and two-thirds describe the home work load as about right.

OK, we can all relax; kids aren't being worked to death. But what about parents with legitimate concerns? What should they make of the homework controversy? The problem

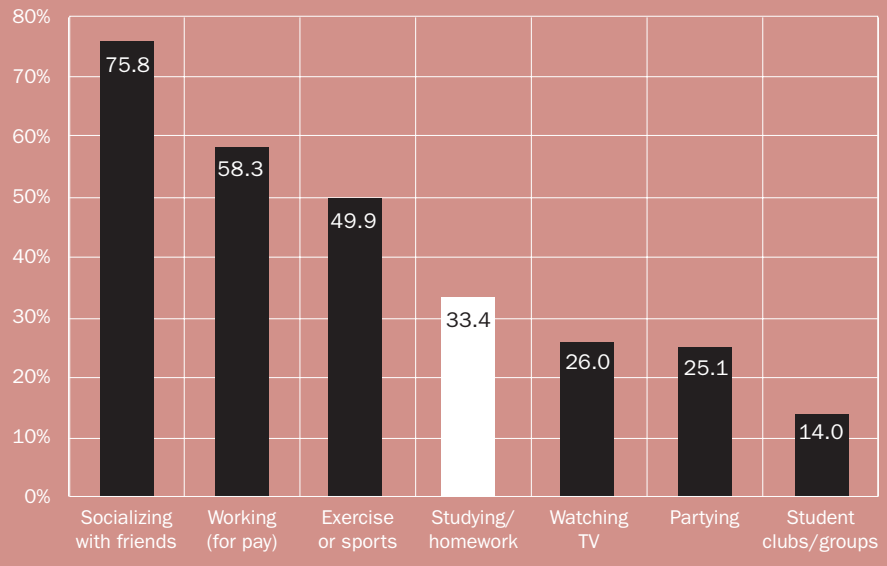
Studying does not dominate the lives of high school seniors.

Fig 2-3

Socializing, working, and sports command more time than studying.

Source: Linda Sax, J.A. Lindholm, A.W. Astin, W.S. Korn, and K.M. Mahoney, *The American Freshman: National Norms for Fall 2002,* (Higher Education Research Institute, UCLA, 2002).

Students spending more than five hours per week on activities in their last year of high school (percentage)




Overbooked

of too much homework may be exaggerated in the press, but it can exist. On any particular school night, the most diligent student in the world may come home with an unmanageable amount of homework. Or the most reasonable teacher in the world may assign an unreasonable amount. Teachers are human and they make mistakes. What can parents learn from the homework controversy that will help them monitor their children's workloads? The following suggestions make the most sense.

1. Take anti-homework articles with a grain of salt.

Opposition to homework has been a mainstay of progressive education for the past 100 years. Edward Bok, editor of *The Ladies Home Journal*, launched a campaign against homework in 1900. Bok argued that children under the age of 15 shouldn't be assigned any homework.[21] After an intensive media campaign in the early twentieth century, progressives managed to persuade lawmakers in one state, California, to ban homework. Progressives charged that staying indoors, reading books, and engaging in other intellectual activities were unhealthy for children.

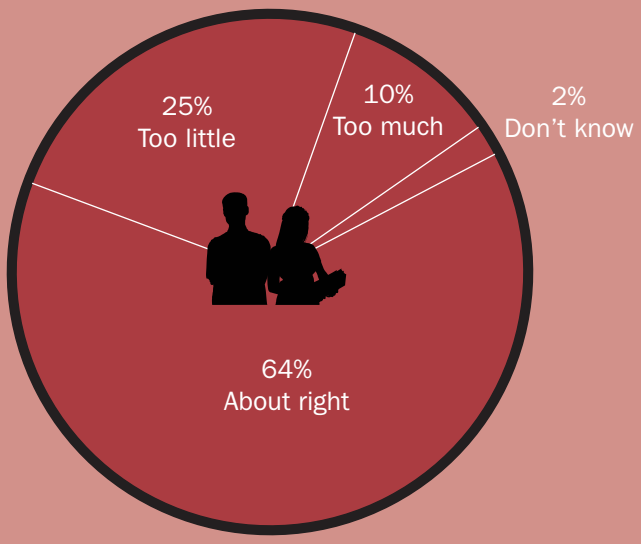
Progressives revere children's natural development, which they believe unfolds through play and self-guided exploration. Homework is work. It interferes with play. It is assigned by an adult. Progressives are hostile to homework because "children need time to be children." Progressives also believe that education is best left to experts. Children who take home schoolwork might be taught "incorrectly" by their parents. And parents who scrutinize their children's homework will have a good idea of what's being

Parents are not concerned about too much homework.

Fig 2-4

Parents of K-12 students were asked what they thought about their children's homework load.

Source: Public Agenda Foundation, *Questionnaire and Full Survey Results, National Poll of Parents of Public School Students*, (Public Agenda Foundation, September 2000).



taught at school, an invitation for parental meddling in school affairs.[22]

2. Follow the PTA guidelines on homework.
Based on the work of Harris Cooper at the University of Missouri, the Parent-Teacher Association offers as a rule of thumb 10 minutes of homework per grade—for example, 30 minutes a night for third graders, 60 minutes for sixth graders, 90 minutes for ninth graders. That seems reasonable. However…

3. Understand that homework varies.
Homework fluctuates from day to day. Teachers assign different amounts depending on what is being studied. Kids have days when they are extremely productive and get a lot of work done at school. Other days they are not productive, and the work comes home. Homework also naturally varies from child to child. Some kids use every spare minute at school to complete their work. They take home virtually nothing. Other kids enjoy socializing at school. Companions are sitting next to them when they are at school, not when they are at home in the evenings. Others simply prefer to work at a leisurely pace. These students take home full backpacks. Plus, once at home, some kids spend an hour just to get ready to do homework—not actually to do it, mind you, but to get ready—sharpening a pencil, getting the lighting just right, making sure that the pet dog is in his proper place, adjusting the mirror on the wall, pouring a glass of water, sharpening a back-up pencil...and on and on. Some kids get right to work and finish quickly. The upshot is that individual circumstances must be considered when hearing about huge amounts of homework. Children do not all possess the same study habits.

4. If a homework problem exists, solutions should come from parents and teachers, not policy interventions.
This recommendation flows from the previous point. Homework loads vary by student. Even in the same family, children experience homework differently. If parents believe their child has too much homework, they should talk to the teacher, or teachers in the case of high school. It is a conceptual mistake to try to standardize school assignments in units of time. If the page you are currently reading were assigned to thirty high school students to read, they would take varying amounts of time to complete the task. Teachers should try to standardize the content of schoolwork, not the time to complete it. Only teachers and parents working together can assess the individual circumstances regarding homework and determine whether children's homework loads are appropriate. Making such decisions away from classrooms is inappropriate. For school districts to place limits on homework, such as the Piscataway District in New Jersey recently did, seems unwise.[23] For state legislatures to pass laws on homework seems downright silly.

Only teachers and parents working together can assess the individual circumstances regarding homework and determine whether children's homework loads are appropriate.

Part III

CHARTER SCHOOLS: ACHIEVEMENT, ACCOUNTABILITY, AND THE ROLE OF EXPERTISE

LAST YEAR'S BROWN CENTER REPORT INCLUDED AN ANALYSIS of charter school test scores from 1999 through 2001. Following on the heels of several state-specific studies, the study was the first to assess charter school achievement nationwide. Brown Center researchers computed z-scores for charter schools—indexing charter schools' test scores relative to the mean and standard deviation of test scores within each state—and then examined the z-scores nationally. This strategy, although possessing its own limitations, gets around the problem that states use different achievement tests and report scores in different metrics.[24]

The study combined data over three years to form a composite achievement score for each school. A three-year composite smoothes out some of the year to year fluctuations in test scores. The study discovered that charters score –.24 z-scores or approximately one-fourth standard deviation below regular public schools with similar demographic profiles.

As was cautioned last year, examining test score levels is not conclusive in evaluating the effectiveness of charter schooling. Many parents pull their children out of regular public schools and send them to charter schools because of unhappiness with how much their children are learning. Researchers call this a "selection effect." When low achievers select charter schools, the effect depresses charter school test scores irrespective of the quality of education charters are providing. Charter schools may also experience a positive selection effect by attracting parents who are extraordinarily concerned about their children's success at school and are highly motivated to intervene on their children's behalf. Selection effects limit the ability of analysts to make causal inferences from charter schools' test scores. That said, an analysis of scores does give a reasonable estimate of how well students in charter schools—or any other type of school—are functioning academically at a given point in time. In discussing charter schools and academic

achievement, test score levels are a starting point, not the final word.[25]

This year's report offers a follow up study with several new elements. (Last year's sample will be referred to as the 1999 cohort and this year's as the 2000 cohort.) The 2000 cohort consists of all charter schools that were open in 2000 and have three years of test data—through 2002—in state databases. The sample size grew from 376 schools in the 1999 cohort to 569 schools in the 2000 cohort. Last year's analysis focused on test score levels, with math and reading scores combined for each year. This year's study includes an analysis of both levels and test score changes from 2000 to 2002. The latter will be referred to as "gains" or "gain scores" even though losses may occur. Gain scores indicate whether students in a particular year are scoring higher or lower than students at the same school in a previous year.

Both levels and gains play important roles in accountability systems. The federal government's No Child Left Behind Act requires states to use a school's achievement level from a starting year (or "baseline") and calculate the annual gains needed for 100% of students to reach academic proficiency by 2014. This statistic becomes the standard by which schools demonstrate Adequate Yearly Progress (AYP), the key accountability measure in the act. Adequate progress is not the same for all schools. Schools with low baseline scores have more improvement to make to get to 100% proficiency and as a consequence have higher AYP targets; those with higher baseline scores do not have to improve as much and have lower AYP targets. Schools failing to meet their AYP targets face sanctions.

The main lesson from last year's study of charter schools was that, compared to regular public schools, charter schools have more ground to make up and as a consequence are more likely to be subjected to sanctions in accountability systems. States issue annual lists of failing schools facing possible sanctions. Below, we examine how often charters appear on the 2003 lists.

This year's study concludes by scrutinizing two forms of expertise found in charter schools. Conversion charters—schools that have converted from regular public schools to charter status—constitute about one-third of the charter schools in California. The test scores of conversion charters in California are analyzed. When a regular public school converts to a charter school, the expertise of teachers and administrators who stay at the school carries over. Conversion schools are fundamentally different from charters that start from scratch.[26]

A second form of expertise can be found in educational management organizations (EMOs). A 2003 study by the Education Policy Studies Laboratory at Arizona State University identified 47 companies managing 417 schools in 24 states. Chancellor Beacon Academies, Edison Schools, The Leona Group, and National Heritage Academies are among the most prominent EMOs.[27] These firms usually operate for profit. They either contract to manage charter schools or hold charters outright, with authority over hiring and firing personnel, developing curricula, and providing instruction. Proponents of EMOs claim that they inject new blood into the educational system by bringing entrepreneurs onto school campuses who may otherwise not be involved with public education. The study compares test scores of EMO-managed charter schools to scores of other charters and regular public schools.

Conversion charters

Schools that have converted from regular public schools to charter schools.

EMO (educational management organization)

A firm dedicated to operating schools or districts, usually on a for-profit basis.

A caveat. The study is not meant to serve as an evaluation of charter schools. The most reliable way to do that is through a randomized field trial. The fact that seats in over-subscribed charter schools are granted by lottery allows for the creation of randomly selected treatment and control groups, thereby making it less likely that selection effects are tainting achievement outcomes. Randomized field trials are extremely expensive to conduct, however, and as of the summer of 2003, one has not yet been conducted with charter schools.

Charter School Achievement

The study focuses on ten states with significant numbers of charter schools. Technical details can be found in the 2002 Brown Center Report. Here are the basics. The ten states administer several different tests to measure student achievement, so analyzing raw test scores is only possible within a single state. To examine the performance of schools across states, scores must be expressed in the same metric. Brown Center researchers converted raw scores to z-scores for the 569 charter schools and 25,614 regular public schools in the ten states.

The z-score of a school reveals the school's performance relative to the state average—negative scores indicating how far below average in standard deviation units, positive scores, how far above average. By definition, in any particular year, the average z-score for all schools in a state is 0.00. After adjusting the z-scores for poverty and racial composition, we found the average z-score for the 569 charters in the study. The average score of –.31 in 2002 means that charter schools score significantly lower than regular public schools in their own states with comparable demographic characteristics.

In terms of percentile ranks, a z-score of –.31 is equal to the 38th percentile. Percentiles range from 1 to 99, with 50 being the median score, the point at which half rank above and half rank below. The 50th percentile is also the average score. A score at the 38th percentile indicates that about 62% of schools with similar demographic characteristics have higher test scores than the average charter school.[28]

Table 3-1 also reveals that charter schools made steady improvements in scores each year, from –.53 in 2000, to –.40 in 2001, to –.31 in 2002. The positive gains registered by the 2000 cohort of charter schools are a significant change from last year's study. Gains registered from 1999 to 2001 for the 1999 cohort were insignificant from zero (+.02). Charters' test scores rose, but by the same amount as regular public schools. Test scores for the 2000 cohort of charters, on the other hand, are rising sharply and the +.22 z-score gain exceeds the gains made by all public schools (which also is 0.00 by definition).

What is different about the two cohorts? The new charters that opened in 2000 did not experience the negative "two year effect" described in last year's study. In the 1999 cohort, test scores were depressed for the first two years that new charters were open. In the current study, the 126 charter schools that opened for the first time in 2000 gained .18 z-scores by 2002.

Charters and Accountability

How are charter schools faring under state accountability systems? Table 3-2 displays the proportion of charters on state lists of failing schools, based on lists that were available on state websites in August, 2003. Charters are over-represented. The table displays data for the ten states in the study. Of 569 charters, 140 schools (24.6%) were failing. Among all public schools in the same ten states, 21.3% were failing. This is

Conversions are more likely to be located in urban areas than other charters or regular public schools and more likely to serve black students and students in poverty.

Charter School Achievement
(scores expressed as adjusted z-scores, N=569)

Table 3-1

	2000	2001	2002	2000-2002 Z-score Gain
Z-score	–0.53* (0.05)	–0.40* (0.05)	–0.31* (0.05)	+0.22* (0.04)

* $\rho < .05$, two-tailed test of z-score = 0

NOTE: Z-scores adjusted for poverty and racial composition. Standard error in parentheses.

Number of Failing Charter Schools
(August 2003)

Table 3-2

	Charter Schools			*All Public Schools*		
State	Schools in Study	Number Failing	Percent Failing	Schools in State	Number Failing	Percent Failing
Arizona	71	8	11.2%	1,489	346	23.2%
California	132	69	52.2%	8,238	3,715	45.1%
Colorado	51	1	2.0%	1,516	86	5.7%
Florida	59	0	0.0%	2,616	10	0.3%
Massachusetts	26	9	34.6%	1,858	209	11.2%
Michigan	111	13	11.7%	3,512	121	3.4%
Minnesota	21	7	33.3%	1,969	265	13.4%
Pennsylvania	32	25	78.1%	3,172	1,279	40.3%
Texas	48	6	12.5%	6,894	1,000	14.5%
Wisconsin	18	2	11.1%	2,065	72	3.5%
Total	569	140	24.6%	33,329	7,103	21.3%

NOTE: Each state has its own criteria, based on individual state tests, for determining whether or not a school is failing.

Source: Data compiled from respective state department of education websites.

the second year in a row that we have found charters over-represented on state failure lists. The comparable figures in 2002 were 18.6% for charters and 12.3% for all public schools, so the over-representation is shrinking.[29] A cautionary word. States may change policies regarding how failing schools are identified, and a single state can strongly influence the national average. Pennsylvania ratcheted up its standards in 2003. In the cohort of charter schools studied last year, none from Pennsylvania were failing. This year, 25 out of 32 charters appear on the state's failing schools list. The statewide failure rate for all public schools in Pennsylvania increased from 8.4% to 40.3%.

As noted above, failure in accountability systems is predicated on two aspects of test scores—level and gain. For the 1999 cohort, findings were negative in terms of levels and neutral in terms of gains. So it is not surprising that a larger share of charters than regular public schools were found on lists of failing schools. The 2000 cohort fares a little better. The news is again negative in terms of levels, but the significant gains that charters have made on achievement tests have kept many of them off failing schools lists.

California Conversions

California has the largest proportion of conversion charter schools of any state in the nation. After the state's 1992 charter law was enacted, most of the schools chartered in the first few years were conversions. Since then start-ups have dominated as new, independent schools were launched by parents, teachers, concerned citizens, and entrepreneurs. Conversions constituted about one-third of the state's charters operating in 2000.[30] Schools may petition local school boards for permission to convert to charter status. If the petition is denied, schools may appeal to the local county board of education. Unlike several states, California prohibits private schools from becoming charters. Conversions are freed from district regulations beyond those that are negotiated with districts during the conversion process and stipulated in the charters. Some charter schools contract with former districts to provide food services, transportation, or administrative services.[31]

Table 3-3 displays characteristics of the conversions. They are much larger than other charters. With a median enrollment of 633 students, conversions resemble California's traditional public schools in size. Conversions are more likely to be located in urban areas than other charters or regular public schools and more likely to serve black students and students in poverty. Although conversions are only about one-third of charters in California, they constitute exactly one-half of the current study's 2002 cohort of charters. Conversions are more likely to show up in this sample because they tend to be older, larger charters and therefore more likely to have met the requirements for the study (i.e., have three consecutive years of test data).

Table 3-4 exhibits the z-scores of the different types of schools, adjusted for racial composition and poverty. Conversions' test scores are higher than those of other charters and regular public schools. In 2002, conversions scored .20 z-scores above the average school in California with similar demographic characteristics. This is equal to about the 58th percentile. Start-up charters scored significantly below average (–.40), at approximately the 34th percentile. Charters as a whole scored –.10, which is statistically indistinguishable from 0.00, the average for California's regular public schools. The change in scores from 2000 to 2002 is essentially the same for conversions, start-ups, and regular public schools.

This raises an important drawback of using z-scores to track changes in test scores. Z-scores are relative scores. They tell us how one competitor is doing in a race—outdistancing the others or falling far behind—but they do not reveal whether the participants as a group are running or walking. In other words, by themselves z-scores cannot tell us whether test scores are going up, down, or sideways. In Table 3-4, they only tell us that—whatever the direction—the scores of conversion charters, start-up charters, and regular public schools have changed approximately the same amount. None of the three types of schools stand out as having improved or declined more than the others.

Granting charter status to existing schools, in other words, has probably functioned more as a reward for demonstrating success than as a turn-around or intervention strategy for low performance.

David Rogosa of Stanford University has written extensively on achievement in California schools. Rogosa cautions that making comparisons based on residuals from regression equations, as the z-scores presented here do to control for demographic characteristics, may produce misleading results—especially when applied to changes in test scores. He points out that researchers often imply that they are answering the question, "How much would the school have changed if all schools had started out equal? rather than the answerable question, how much did the school improve?"[32] As useful as regression analysis may be, it cannot answer questions about imagined conditions. And packing several variables into regression equations in order to isolate the effects that are of primary interest may increase the chances of getting the story wrong.

As a check on the preceding analysis, we examined the national percentile rankings (NPRs) of conversion charters on the Stanford Achievement Test (SAT-9) from 2000-2002 and the gains schools registered

Characteristics of California Conversion Charter Schools
(2002)

Table 3-3

	Conversion Charters (N=66)	Start-up Charters (N=66)	California Regular Public Schools (N=6,623)
Enrollment (median)	633	234	669
Poverty	58%	42%	49%
White	33%	57%	38%
Black	19%	13%	8%
Hispanic	41%	23%	41%
Asian	6%	4%	11%
Urban	55%	40%	34%
Suburban	36%	38%	55%
Rural	8%	22%	12%

NOTE: Mean enrollments: Conversion = 746, Start-up = 487, CA Regular Public School = 837

California Charter School Achievement
(scores expressed as adjusted z-scores)

Table 3-4

	2000	2001	2002	2000-2002 Z-score Gain
Regular Public Schools (N=6,623)	0.00 (.01)	0.00 (.01)	0.00 (.01)	0.00 (.01)
All Charters (N=132)	–0.08 (.07)	–0.07 (.07)	–0.10 (.08)	–0.02 (.06)
Conversion Charters (N=66)	0.24* (.08)	0.24* (.07)	0.20* (.08)	–0.04 (.07)
Start-up Charters (N=66)	–0.39* (.11)	–0.39* (.12)	–0.40* (.12)	–0.01 (.08)

* $\rho < .05$, two-tailed test of z-score = 0

NOTE: Conversion charter scores are statistically significantly different ($p < .05$) from start-up charter scores in all years. Z-scores adjusted for poverty and racial competition. Standard error in parentheses.

California Charter School Achievement
(scores expressed as unadjusted national percentile ranks)

Table 3-5

	2000	2001	2002	2000-2002 NPR Gain
Regular Public Schools (N=6,623)	49.2 (0.2)	51.2 (0.2)	52.7 (0.2)	+3.5 (0.1)
All Charters (N=132)	46.5 (1.7)	48.9 (1.7)	50.1 (1.7)	+3.6 (0.9)
Conversion Charters (N=66)	46.3 (2.5)	48.6 (2.5)	50.2 (2.4)	+3.9 (1.3)
Start-up Charters (N=66)	46.7 (2.3)	49.1 (2.3)	50.0 (2.3)	+3.3 (1.3)

NOTE: SAT-9 scores used to measure achievement. Standard error in parentheses.

in NPRs during the same period. Table 3-5 presents the data. In 2002, charters scored at about the 50th percentile. Regular public schools scored slightly higher, at the 52.7 percentile. From 2000 to 2002, the different types of schools all gained 3 to 4 percentile points.

These results clarify the findings presented above. Let's sum them up. From 2000 to 2002, test scores of charter schools in California were lower than those of regular public schools. During the same period, scores rose by about the same amount in California's charter and regular public schools—3 to 4 percentile points on the SAT-9. Among the charters, conversions and start-ups scored at about the same level, and their scores increased about the same amount from 2000 to 2002. Any analysis that controls for demographic characteristics will find conversions scoring significantly higher than both start-ups and regular public schools. This is because conversions serve large numbers of students with socioeconomic characteristics that are correlated with low test scores. Gain scores look about the same for conversions and start-ups when demographic controls are employed with the data.[33]

Many conversion charters are producing average test scores with populations of children historically associated with low test scores. These schools may be doing something that is worth identifying and disseminating to others. The phenomenon may also be related to how conventional public schools convert to charter status. Local school boards grant charters in California. They are probably reluctant to approve charter petitions coming from a district school unless the petitioners have a solid track record. Granting charter status to existing schools, in other words, has probably functioned more as a reward for

demonstrating success than as a turnaround or intervention strategy for low performance. This is important for researchers to note. The selection factors that plague the evaluation of charter school achievement may play out differently with conversions, especially if a school has institutional prestige that precedes its charter status.

Educational Management Organizations (EMOs)

EMOs operate 90 charter schools in the study's sample of ten states (see Table 3-6). Michigan dominates the EMO landscape, with 62 of the 90 schools located there. Like California's conversions, the EMO schools are larger than the average charter. Compared to both other charters and regular public schools, they serve a larger proportion of black children and children in poverty and are more likely to be located in urban communities. They are less likely to serve Hispanic students, which is due to relatively few EMOs operating in states such as California, Florida, and Texas with large Hispanic populations.

Charters run by EMOs typically target low-achieving students. Table 3-7 reveals that EMOs scored significantly below non-EMO charters and further yet below regular public schools, with controls in place to compare schools with similar demographic characteristics. The EMO charters' z-score in 2000 (–1.00) was equal to about the 16th percentile. In contrast to conversion charters, EMO-operated charters apparently are not brought in to manage schools in recognition of schools' success, but to intervene in the case of school failure.

EMOs are controversial. Many people are hostile to the notion of firms profiting financially from public schools. When charter authorizers consider approving an EMO-operated charter, it often generates intense political opposition. The test score data suggest that in situations where student achievement is extremely low, the political opposition to EMOs may be weakened.[34]

EMO-operated charters registered solid gains in test scores from 2000 to 2002 (see last column, Table 3-7), significantly out-gaining non-EMO charter schools with similar demographic profiles. In 2002, the test scores of the 90 EMO charters in the study had moved up to approximately the 28th percentile (z-score of –.58). To run a check on the analysis using raw test scores, we analyzed the scores of EMO-operated charters in Michigan on the Michigan Educational Assessment Program (MEAP). The z-score and raw score treatments yielded essentially the same results. EMO-operated charters score significantly lower than regular public schools and non-EMO charters but registered greater test score gains from 2000 to 2002.

Summary and Conclusion

This section of the report analyzed test score data of charter schools. As was found last year in the first segment of the study, test scores in charter schools lag behind the scores of regular public schools. Charter schools in this year's study—contrary to the charters in last year's—registered significant gains in test scores from 2000 to 2002. On the lists of failing schools that states compiled in both 2002 and 2003, charter schools are over-represented.

Two forms of expertise were examined by analyzing achievement data from conversion charters in California and EMO-operated charters in several states. In 2002, the conversion charters scored at approximately the 50th percentile on reading and

Future research should focus on identifying the broadest range of policies and practices that are capable of creating achievement successes out of achievement failures.

Characteristics of EMO Charter Schools
(2002)

Table 3-6

	EMO (N=90)	Non-EMO (N=479)	Regular Public School (N=25,614)
Enrollment (median)	498	248	546
Poverty	53%	47%	42%
White	43%	51%	57%
Black	41%	25%	12%
Hispanic	14%	19%	25%
Asian	1%	3%	5%
Urban	45%	52%	30%
Suburban	41%	33%	40%
Rural	15%	15%	29%

NOTE: Mean enrollments are: EMO = 507, Non-EMO = 369, Regular Public School = 664

EMO Charter Achievement
(scores expressed as adjusted z-scores)

Table 3-7

	2000	2001	2002	2000-2002 Z-score Gain
Regular Public Schools (N=25,614)	0.01 (.01)	0.01 (.01)	0.01 (.01)	0.00 (.01)
All Charters (N=569)	–0.53* (.05)	–0.40* (.05)	–0.31* (.05)	+0.22* (.04)
EMO Charter (N=90)	–1.00* (.10)	–0.69* (.09)	–0.58* (.08)	+0.41* (.08)
Non-EMO Charter (N=479)	–0.44* (.06)	–0.35* (.06)	–0.26* (.05)	+0.18* (.05)

* $\rho < .05$, two-tailed test of z-score = 0

NOTE: Z-scores adjusted for poverty and racial composition. Standard error in parentheses.

math tests. From 2000 to 2002, they made gains comparable to those of start-up charters and regular public schools. Conversions produced average test scores despite a demographic profile that is usually correlated with low scores.

A recent study by Bruce Fuller at the University of California, Berkeley found that charter schools have fewer fully certified teachers than regular public schools.[35] Conversion charters are an exception, with their teachers comparable to those of regular public schools in experience and certification. Can the conversions' solid test scores be attributed to teachers' expertise? Perhaps, but not necessarily. The test scores of non-conversion charters are improving just as much. And, as noted above, neither Fuller's nor this study can control for selection effects—in terms of which schools were allowed to convert or the students who chose to attend conversions and start-ups. Much more research is needed comparing the performance of conversion and start-up charters.

The test scores of charters operated by educational management organizations were also examined. Compared to regular public schools and to other charters serving students with similar socioeconomic characteristics, EMO-operated charters have much lower test scores. This is almost certainly because companies have been chartered to run already low-performing schools or to create new schools serving low-performing students. Gains made from 2000 to 2002 have been significantly larger than those of both non-EMO charters and regular public schools. Again, causality cannot be determined conclusively. However, importing management expertise from the private sector should be explored further as an option for improving low-achieving schools. The results presented here are quite positive for EMOs. The findings raise doubts about a strain of thought in the charter school movement: that anyone can successfully start and operate a school if he or she merely possesses abundant energy and a love of children. In the extreme, this form of romanticized amateurism dismisses the importance of educational expertise. That appears unwise. Future research should focus on identifying the broadest range of policies and practices that are capable of creating achievement successes out of achievement failures.

ENDNOTES

1 Approximating one year's growth on NAEP is explained in the *2000 Brown Center Report on American Education*, p. 7.

2 Richard L. Allington, "Does State and Federal Reading Policymaking Matter?" in *The Great Curriculum Debate: How Should We Teach Reading and Math?* edited by Tom Loveless, (Brookings Institution Press, 2001), pp. 268-298.

3 Linda Dager Wilson and Rolf K. Blank, *Improving Mathematics Education Using Results from NAEP and TIMSS,* (Council of Chief State School Officers, 1999).

4 National Commission on the High School Senior Year, *The Lost Opportunity of Senior Year: Finding a Better Way,* (National Commission on the High School Senior Year, 2001).

5 The counts were stable across years.

6 School funding data reported in "Public Elementary and Secondary Students, Schools, Pupil/Teacher Ratios, and Finances, by Type of Locale: 1998 and 1999" on the National Center for Education Statistics "Navigating Resources for Rural Schools" website (http://nces.ed.gov/surveys/ruraled). Cost of living figures from Mark Nord, "Does It Cost Less to Live in Rural Areas? Evidence from New Data on Food Security and Hunger," *Rural Sociology,* vol.65, no.1 (March, 2000), pp. 104-125.

7 The Rural School and Community Trust, *Why Rural Matters 2003,* (The Rural School and Community Trust, 2003).

8 "Navigating Resources for Rural Schools," National Center for Education Statistics website: http://nces.ed.gov/surveys/ruraled

9 Dana Markow and Marc Scheer, *The MetLife Survey of The American Teacher 2002: Student Life: School, Home, and Community,*(MetLife, Inc., 2002); Lowell Rose and Alec Gallup, "The 34th Annual Phi Delta Kappa/Gallup Poll Of the Public's Attitudes Toward the Public Schools," *Phi Delta Kappan* supplement (September, 2002).

10 Richard Ingersoll, "Teacher Turnover and Teacher Shortages: An Organizational Analysis," *American Educational Research Journal,* vol. 38 no. 3 (Fall, 2001), pp. 499-534; also see U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics* 2001, (NCES 2002-130, U.S. Government Printing Office, 2002), Table 75.

11 Mihaly Csikszentmihalyi and Barbara Schneider, *Becoming Adult: How Teenagers Prepare for the World of Work,* (Basic Books, 2001). Also see U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2001,* (NCES 2002-130, U.S. Government Printing Office, 2002), Table 186.

12 CNN.com, "Alaskan Schools Mired in Rustic Conditions," May 14, 2003.

13 Harris Cooper, *The Battle Over Homework: Common Ground for Administrators, Teachers and Parents,* (Corwin Press, 2001).

14 Sandra L. Hofferth and John F. Sandberg, "Changes in American Children's Use of Time, 1981-1997," *Children at the Millennium: Where Have We Come From, Where Are We Going?* edited by S. Hofferth and T. Owens, (Elsevier Science Ltd., 2001), pp. 193-229.

15 The website for CBS Evening News lists a story for December 10, 2002, "Study Says Kids' Homework Load Bigger," which includes the following, "Since 1981, homework has stayed about the same for high school students—but for 6- to 9-year olds, it's tripled." The report does not list a source. The Michigan study did not include high school students, but the CBS report's reference to 1981 and ages 6 to 9, reasonably close to the ages 6 to 8 category in the study, indicates it probably was the source. The website for CNNfyi.com includes an AP story, July 25, 2001, "Homework Hours Tripled Since 1980," stating the following, "One University of Michigan study suggests that young children are seeing up to three times as much homework as children did 20 years ago."

16 Sandra L. Hofferth and John F. Sandberg, "Changes in American Children's Use of Time, 1981-1997," *Children at the Millennium: Where Have We Come From, Where Are We Going?* edited by S. Hofferth and T. Owens, (Elsevier Science Ltd., 2001), pp. 218, 226.

17 NAEP Reading 1999 Long-term trend summary data. Other NAEP surveys ask for a daily estimate using different response categories. The results lead to essentially the same conclusions reached here.

18 Maryellen Harmon, Teresa A. Smith, Michael O. Martin, Dana L. Kelly, Albert E. Beaton, Ina V.S. Mullis, Eugenio J. Gonzalez, and Graham Orpwood, *Performance Assessment in IEA's Third International Mathematics and Science Study,* (The International Study Center at Boston College, 1997).

19 Linda Sax, Jennifer Lindholm, Alexander Astin, William Kirn, and Kathryn Mahoney, *The American Freshman: National Norms for Fall 2002,* (Higher Education Research Institute, UCLA, 2002).

20 Public Agenda Foundation, *Questionnaire and Full Survey Results, National Poll of Parents of Public School Students*, (Public Agenda Foundation, 2000).

21 Diane Ravitch, *Left Back: A Century of Failed School Reforms,* (Simon & Schuster, 2000), p. 90.

22 Brian Gill and S.L. Schlossman, " 'A Sin Against Childhood': Progressive Education and the Crusade to Abolish Homework, 1897- 1941," *American Journal of Education,* vol. 105, no. 1 (November, 1996), pp. 27-66; Gill and Schlossman, "Parents and the Politics of Homework: Some Historical Perspectives," *Teachers College Record,* vol. 105, no. 5 (June, 2003), pp. 846-871.

23 CNN.com "Restrictions on Homework Put New Jersey School District in Spotlight," October 23, 2000.

24 Some limitations: z-scores do not tell whether test scores are rising or falling statewide; and they may imply that one standard deviation in one state is equal to one SD in another.

25 Gains provide a better control if the basis on which selection occurs remains stable from the start and end point of the time period for which the gain is calculated.

26 For the challenges facing start from scratch charters, see Tom Loveless and Claudia Jasin, "Starting from Scratch: Organizational and Political Obstacles Facing Charter Schools," *Education Administration Quarterly*, vol. 34, no. 1 (February, 1998), pp. 9-30.

27 Alex Molnar, Glen Wilson, and Daniel Allen, *Profiles of For-Profit Education Management Companies: Fifth Annual Report 2002-2003,* (Education Policy Studies Laboratory, Arizona State University, 2003)

28 Last year's calculations were weighted by enrollment to give larger schools more influence than smaller schools. For the sake of simplicity, we did not weight the means reported this year. Two reasons: (1) The three-year composite already smoothes out fluctuations that are endemic to small schools' test scores. (2) When we ran the analyses using weights, the results were not significantly different from the outcomes reported here.

29 Failing lists for 2002 are analyzed in Tom Loveless "Charter School Accountability and Achievement," in *Leave No Child Behind: The Politics and Practice of School Accountability*, edited by Paul Peterson and Martin West, (Brookings Institution Press, forthcoming).

30 Priscilla Wohlstetter, Noelle C. Griffin, and Derrick Chau "Charter Schools in California," in *The Charter School Landscape,* edited by Sandra Vergari, (University of Pittsburgh Press, 2002), pp. 32-53.

31 Web information on California conversions is available at: http://www.cde.ca.gov/charter/about.html

32 David Rogosa, "Student Progress in California Charter Schools, 1999-2002," (California Department of Education, 2003).

33 Rogosa finds, and our data confirm, that gain scores have a modestly *positive* association with indicators of poverty. This is enormously intriguing, and we hope to explore it in greater depth in the future. See Rogosa, 2003, for his discussion.

34 For an example of strong public backlash against EMO-operated schools, note the case of Edison Schools' withdrawal from San Francisco in Julian Guthrie, "S.F. Schools Vote to End Edison Compact," *San Francisco Chronicle,* June 29, 2001.

35 See the working paper by Bruce Fuller, Marytza Gawlik, Emlel Kuboyama Gonzales, Sandra Park, and Gordon Gibbings, "Charter Schools and Inequality: National Disparities in Funding, Teacher Quality, and Student Support," (Policy Analysis for California Education, 2003).

Designed by Lipman Hearne, Chicago/Washington

The Brookings Institution

1775 Massachusetts Avenue, NW • Washington, DC 20036
Tel: 202-797-6000 • Fax: 202-797-6004
www.brookings.edu

The Brown Center on Education Policy

Tel: 202-797-6426 • Fax: 202-797-2968
www.brookings.edu/browncenter