Still Left Behind

HOW AMERICA'S SCHOOLS KEEP FAILING OUR CHILDREN

Katharine B. Stevens and Meredith Tracy

with Martha Baker & Benjamin Wolters

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Executive Summary

Over the five decades since the passage of the Elementary and Secondary Education Act (ESEA) in 1965, public schooling has assumed an increasingly prominent role in US domestic policy, now constituting the nation's core strategy for promoting social and economic mobility across generations and a major proportion of human capital development spending. Yet, even as K–12 schools have become ever more central to US society, the nation has continued to grapple with persistently low achievement among disadvantaged children and large achievement gaps between more and less advantaged student subgroups.

This report explores one dimension of this pervasive problem, focusing especially on the period from 2003 to 2017 when the federal No Child Left Behind (NCLB) school reform law was in effect. The report examines eighth-grade achievement as the outcome of substantial time—usually nine years—spent in school, using data from the National Assessment of Educational Progress (NAEP), long viewed as an important barometer of student achievement across the nation and a key measure of school reform success.

The report focuses particularly on achievement gaps based on socioeconomic status, which have endured for decades. It describes the proportions of lower-income and higher-income eighth graders in each state and the District of Columbia who failed to demonstrate basic levels of reading and math competence in 2003 and 2017, the achievement gap between the two groups at both points in time, and changes in both performance and gaps over that period. The report documents the strikingly poor performance of lower-income children in 2017 and the wide achievement gaps that persisted in every state in 2017.

While improvement in children's NAEP results over the NCLB period fell short of what reformers had hoped for, it is generally asserted that NCLB, together with prior reforms, raised achievement for disadvantaged children, particularly the lowest-performing children and children of color. Yet media reports and commentary on NAEP trends have typically stressed a limited set of metrics, leaving important outcomes insufficiently examined.

First, a tendency to headline national averages has drawn attention away from large variation among states. Second, descriptions of student subgroup performance often emphasize differences in average NAEP scores, excluding crucial data on the actual performance levels that children have achieved. Third, reports on the percentages of students scoring at NAEP's three achievement levels commonly lump all students together, obscuring large achievement gaps among student subgroups. Finally, state NAEP outcomes are almost always reported without the policy-relevant context of state-level per-student expenditures that those outcomes cost to produce.

This report aims to fill these gaps, revealing a more nuanced picture than typical accounts present. As often noted, the average national percentage of eighth graders identified as lower income who scored below NAEP's lowest level of Basic on reading and math assessments declined from 2003 to 2017. But performance across states was highly uneven. Declines in most states were small, and achievement gaps between lower-income and higher-income eighth graders remained substantial.

Moreover, in almost all states, the group categorized as "lower income" included a much larger percentage of higher-income children in 2017 than in

2003. It is therefore not clear to what degree the gains of that group resulted from improved performance of children who were actually low income rather than changes in the group's composition due to the addition of higher-income, higher-performing children to that group.

The report's most important finding is that large proportions of lower-income eighth graders in 2017 still failed to demonstrate even minimum levels of competence in reading and math, as indicated by scoring below NAEP Basic. This was the case in every state—even those that appeared to have improved the most from 2003 to 2017. That is, more than 50 years after President Lyndon B. Johnson signed the Elementary and Secondary School Act into law as a cornerstone of his War on Poverty legislation and close to 14 years since the nation's most far-reaching school reform initiative was launched, the disadvantaged children long targeted by reforms and increased spending were still failing in large numbers.

Despite initial appearances, this report does not contradict accounts of notably improved school performance over the past decades. Rather, it directs attention to an under-examined aspect of public schooling: the persistently low achievement outcomes of lower-income students, often obscured by a prevailing focus on incremental improvements in average scores. The degree to which all children achieve at least basic levels of competence in reading and math over eight or nine years in school, as described in this report, warrants greater public and policy attention.

Still Left Behind: How America's Schools Keep Failing Our Children

Katharine B. Stevens and Meredith Tracy

> We owe the children of America a good education. And today begins a new era, a new time in public education in our country. As of this hour, America's schools will be on a new path of reform and a new path of results.
>
> —George W. Bush, "Remarks on Signing the No Child Left Behind Act of 2001," January 8, 2002[1]

The idea that public schools would ensure equal opportunity for all children and serve as the nation's primary vehicle for social and economic mobility is relatively new in America's history. In 1900, only about 10 percent of children from ages 14 to 17 were even enrolled in high school. It was not until the 1920s that state laws requiring children to attend elementary school were in place and enforced across the US. In 1940, less than half the adult population had more than an eighth-grade education, and by 1960, the high school graduation rate had reached just 70 percent.[2]

Indeed, until the mid-1960s, public schools were largely viewed as a means to assimilate immigrants and produce capable workers and citizens, not as a strategy to advance mobility and opportunity for all. A 1951 US Office of Education publication, for example, noted that "most boys and girls are headed for jobs that require little training," encouraging schools to lower students' expectations of their career choices rather than "inspir[ing] glamorous hopes that may not be justified."[3]

But President Lyndon B. Johnson advocated a groundbreaking new role for America's public schools, proposing they serve as the means for breaking the cycle of poverty and bettering poor children's lives. "Education is the only valid passport from poverty," he maintained.[4] "Universal, free, public education is the very foundation upon which our entire society rests today."[5] In 1965, Johnson signed the Elementary and Secondary Education Act (ESEA) into law as a cornerstone of his War on Poverty legislation, describing it as "the core of all our hopes for a Great Society."[6] "No law I have signed or will ever sign means more to the future of America," he declared.[7]

The ESEA thus established a new purpose for K–12 schooling, accompanied by an unprecedented federal role in its funding and delivery. For the first time in history, it called for *schools* to close gaps between disadvantaged and advantaged children, giving every child a fair start regardless of family income and ZIP code.

Since then, the nation's investment in public-schooling has grown substantially. Total public spending on elementary and secondary schools has reached over $700 billion annually. From 1970 to 2017, average total expenditures per student more than doubled, rising from $4,943 to $12,783 in constant 2019 dollars. Almost half (47 percent)

of school spending is funded by states—ranging from 32 percent in New Hampshire to 90 percent in adjacent Vermont—and K–12 schools are now states' single-largest general-fund expenditure, consuming an average of more than one-third of state general funds.[8] Sixteen states spend 40 percent or more of their general funds on their public schools.[9]

Over the past half century, public schools have thus come to assume a prominent role in US domestic policy. K–12 schooling now constitutes the nation's core strategy for promoting social and economic mobility across generations and accounts for a major proportion of human capital development spending, especially at the state and local levels.

Yet, 55 years after President Johnson signed the ESEA into law, his hopes for the nation's public schools remain unrealized. Indeed, for decades, the school enterprise has been characterized by chronically inadequate performance and large, persistent achievement gaps between economically advantaged and disadvantaged children.[10] *A Nation at Risk: The Imperative of Education Reform* was published in 1983, less than 20 years after the ESEA was signed and soon after the US Department of Education was established by President Jimmy Carter in 1979. Already, the report declared that America's public schools had failed and—in what would come to be a familiar refrain—that the US needed "to generate reform of our educational system in fundamental ways."[11]

A Nation at Risk was soon followed by "America 2000: An Education Strategy," launched in 1989 by President George H. W. Bush and a coalition of state governors, calling for urgent action to improve America's public schools.[12] The group adopted six "national education goals" to be achieved by 2000—along with "a bold, complex, and long-range plan" to accomplish them—including that "all children in America will start school ready to learn" and "will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter" in core subjects.[13]

"America 2000" evolved into the Goals 2000: Educate America Act, which President Bill Clinton signed into law in 1994. That same year, Congress reauthorized the ESEA as the Improving America's Schools Act of 1994, stipulating "comprehensive systemic school reform . . . to improve education for ALL children."[14]

By the end of the 20th century, however, concerns about low school performance had only escalated. Growing numbers of analysts argued that inadequate attention was being paid to disadvantaged students, in particular, and the wide achievement gaps between those students and their more advantaged peers.

The No Child Left Behind Act of 2001

In 2002, President George W. Bush echoed his predecessors from previous decades, signing the 650-page No Child Left Behind Act of 2001 (NCLB) into law to give "every child, of every background . . . a chance to learn and strive and rise in the world."[15] Noting that "a huge percentage of children in poverty can't read at grade level," despite nearly $200 billion in federal education funds targeting disadvantaged children since passage of the ESEA, President Bush described NCLB's goal as improving schools so that "no child—not one single child in America—is left behind." "We've spent billions of dollars with lousy results," he declared. "Now it's time to spend billions of dollars" to get good ones.[16]

The culmination of decades of evolving school reform, NCLB was described at the time as "the most sweeping education-reform legislation since 1965."[17] It was the product of a bipartisan collaboration among civil rights and business groups, congressional Democrats and Republicans, and the Bush administration, reflecting growing national investment in schooling even as public schools' inadequacy became an increasingly urgent concern.[18]

NCLB had two primary goals. It aimed for all students to attain proficiency or above on "challenging" state achievement standards in math and reading, as measured by state tests, by 2014. It also sought to close achievement gaps between advantaged and disadvantaged children.[19]

To accomplish these goals, NCLB stipulated two strategies to increase accountability and transparency in public schooling. First, it defined an amplified new role for the federal government to hold states, districts, and schools accountable for student

outcomes. Second, it required that each state administer reading and math tests to every student in grades three through eight annually and at least once in high school, using state-developed tests aligned with the state's academic performance standards. States were further required to collect and report school- and district-level test outcomes disaggregated by a range of demographic subgroups.

This unprecedented mandate to collect and report achievement data for specified subgroups was intended to expose the characteristically low performance of disadvantaged children, which had "too often been ignored in the past."[20] It also aimed to hold schools accountable for closing the gaps between those children and their more advantaged peers, which had long been obscured by reliance on achievement averages. Schools that failed to make "Adequate Yearly Progress" toward proficiency for specified student subgroups and close achievement gaps among higher- and lower-performing children faced sanctions that increased over time.[21]

The National Assessment of Educational Progress. The federally run National Assessment of Educational Progress (NAEP), known as "the Nation's Report Card," was charged with a central role in implementing NCLB reforms. Developed in 1969, NAEP is a nationally representative, standardized assessment of student achievement administered by the National Center for Education Statistics (NCES) in the US Department of Education's Institute of Education Sciences. NAEP reports performance data for the nation, each state, and selected large urban districts, for all students and various demographic subgroups.[22]

NCLB required biennial NAEP assessments in reading and math for fourth and eighth graders in each state beginning in 2003 and mandated that NCES report achievement data separately for NAEP's "Reporting Groups," defined by race and ethnicity, gender, economic status, parental education, disability status, and status as an English language learner.[23] Since 2003, the results of NAEP's assessments have been reported every two years, for all students and each reporting group.[24] Results are presented both as average scores on a 0- to 500-point scale and as the percentage of students scoring at each of NAEP's three achievement levels—Advanced, Proficient, and Basic—based on defined score cutoffs for each level. (See Table 1.)[25]

Table 1. Cutoff Scores for NAEP Reading and Mathematics Achievement Levels

READING		MATHEMATICS	
Advanced	323–500	Advanced	333–500
Proficient	281–322	Proficient	299–332
Basic	243–280	Basic	262–298

Source: National Center for Education Statistics.

The purpose of administering biennial NAEP math and reading assessments for fourth and eighth graders in every state was twofold. The first purpose was to monitor NCLB's success in accomplishing its goals: that all fourth and eighth graders attain a minimum of proficiency in reading and math by 2014 and that achievement gaps between advantaged and disadvantaged children be closed. Second, although state-defined "proficiency"—not "NAEP Proficiency"—was the standard by which states would be held accountable, NAEP assessments were intended to serve as a national yardstick for assessing the rigor of state achievement tests.[26]

This Study

In general, student outcomes over the NCLB period fell short of what Congress had intended and reformers had hoped, whether due to shortcomings of NCLB or other influences within or outside of schools.[27] Yet it is generally asserted that NCLB, together with prior reforms, raised achievement for disadvantaged children, particularly for the lowest-performing children and children of color. As analysts often emphasize, for example, in eighth-grade math, black students gained 23 points, and the lowest-performing decile of students overall gained 20 points from 1990 to 2017.[28]

Reports on NAEP trends, however, have typically focused on a limited set of metrics, leaving important outcomes insufficiently examined. First, a prevalent focus on NAEP's *average scores* has obscured crucial information on children's specific levels of

performance.[29] While average scores can be useful as a general indication of overall trends, they provide no information on the percentages of students performing at each of NAEP's three discrete achievement levels.[30]

Further, a focus on incremental, "statistically significant" changes in average scores over time has obscured crucial aspects of long-term trends—most notably, the practical outcomes for children from years spent in school. A gain of 23 points over the 27-year period from 1990 to 2017 is "significant" in a statistical sense. But from the point of view of families, taxpayers, and policymakers, it is much less meaningful.[31]

For example, the gains of black eighth graders in math—from 237 in 1990 to 260 in 2017—are frequently plotted on a graph with a y-axis scaled to highlight their technical significance, as shown in Figure 1.[32] Yet when those same gains are plotted on a y-axis reflecting the actual range of student scores on NAEP's 500-point scale, their real-world significance appears much smaller (Figure 1).[33] Most important, both graphs ignore that in 2017, over one-half (54 percent) of black eighth graders scored below NAEP Basic in math.

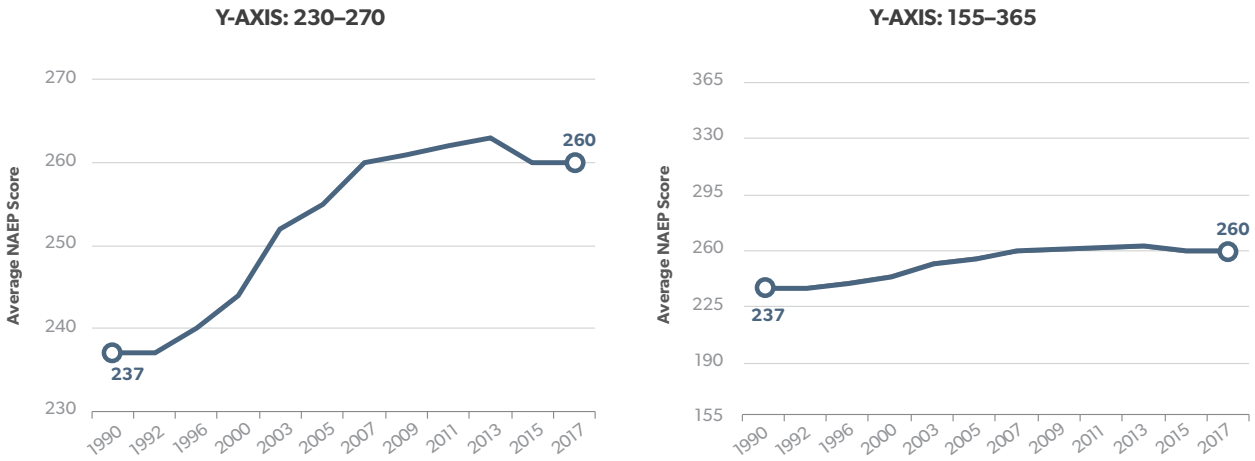
Second, a tendency to focus on *national averages* has drawn attention away from large state-to-state variation. For example, nationally, one-quarter of eighth graders scored below NAEP Basic on the 2017 NAEP reading assessment. At the state level, however, that percentage ranged from 15 percent in Massachusetts to 45 percent in the District of Columbia.

Third, a focus on the *average percentages* scoring at discrete achievement levels has obscured large achievement gaps among student subgroups—indeed, exactly the gaps NCLB aimed to close. While the average percentage of students who score below NAEP Basic has declined in both reading and math in most states, that percentage varies widely among subgroups.

For example, 15 percent of all eighth graders in Massachusetts scored below NAEP Basic on reading in 2017, as noted above. However, that average percentage conceals a large income-based achievement gap: 31 percent of lower-income children in Massachusetts scored below NAEP Basic, compared to 9 percent of higher-income children. Similarly, in the District of Columbia, an average of 45 percent of eighth graders overall scored below NAEP Basic on reading. But disaggregating that average by income reveals that 54 percent of lower-income children scored below NAEP Basic, compared to just 18 percent of higher-income children.

Study Questions. This descriptive study looks below the surface of oft-cited averages to examine achievement levels of lower-income children and gaps between lower- and higher-income children for

Figure 1. Average NAEP Mathematics Scores of Black Eighth Graders from 1990 to 2017



Source: National Center for Education Statistics.

each state and the District of Columbia.[34] The core questions the study addresses are: *In 2017, what proportion of lower-income children were still "left behind" as conceptualized by NCLB? To what extent, if any, was that proportion reduced over the NCLB era, as the NCLB legislation aimed to accomplish?*

Specifically, the study asks:

- In 2017, what percentages of lower-income eighth graders in each state were still failing to demonstrate minimum competence in reading and math, as indicated by scoring below NAEP Basic?
- To what degree did the proportion of lower-income eighth graders who scored below NAEP Basic in reading and math decline from 2003 (the first year NCLB was in effect) to 2017 (the last year of NAEP assessments under NCLB)?[35]
- How large was the gap between the proportions of lower-income and higher-income eighth graders who scored below NAEP Basic in 2017? Was that gap reduced from 2003? If so, by how much?
- How much do these findings vary across states?

Variables. The study examined these questions using the following variables.

Eighth Grade. The investigation focuses on eighth graders because that is the highest grade for which state-level NAEP results are available and their achievement represents the outcome of substantial time—usually nine years—spent in school. Twelfth-grade outcomes would be preferable because they represent the end product of K–12 schools. Unfortunately, 12th-grade NAEP scores are only reported nationally and are not available by state.[36]

"Lower Income." While NCLB defined several subgroups of historically low-performing students, analyses of achievement gaps have often focused on subgroups based on race and ethnicity. Although racial achievement gaps have narrowed over the past several decades, achievement gaps based on socioeconomic status have not.[37] Therefore, the study focused on gaps between lower-income and higher-income children, using *federal eligibility for free or reduced-price lunch* ("FRL eligibility") as a rough proxy for these two broad income groups.[38] For readability, the report uses the terms "lower income" and "higher income" to refer to the two groups of FRL-eligible and non-eligible children.[39]

Note on FRL Eligibility. Eligibility for free or reduced-price lunch (FRL) is commonly used in education research as a proxy for "poor" because it is usually the only available measure for student household income.[40] However, the measure has at least two important shortcomings as a proxy for economic disadvantage. First, under the federal National School Lunch Program, all children whose family income falls below 185 percent of the federal poverty level are eligible for free or reduced-price meals.[41] Many FRL-eligible children therefore have family incomes above 100 percent of the federal poverty level and are not "poor" as defined by the federal government.

Second, over the past decade, FRL eligibility has become an increasingly imprecise proxy for economic status in general, largely due to 2010 federal legislation that expanded FRL eligibility to include a greater number of higher-income students.[42] In particular, the Community Eligibility Provision of that legislation allows schools to provide free meals to all students—including those whose family incomes exceed 185 percent of the federal poverty level—if at least 40 percent of the school's students are from families receiving other means-tested government support, such as the Supplemental Nutrition Assistance Program (commonly known as food stamps) and Temporary Assistance for Needy Families.[43]

As a result, from 2003 to 2017, the FRL-eligible group expanded to include a substantially larger proportion of higher-income children. In 2003, an estimated 15 percent of eighth-grade children were poor (that is, with family incomes below 100 percent of the federal poverty level), and 33 percent were FRL eligible.[44] By 2017, the proportion of poor eighth graders had remained almost constant at around 16 percent. Yet the proportion of FRL-eligible eighth graders had increased to 46 percent—clearly including a substantial number of nonpoor children.[45]

Due to the increase of higher-income children included in the FRL-eligible group over the 14-year period from 2003 to 2017, the achievement of FRL-eligible students at those two points is not fully comparable, as discussed in more detail below.

Scoring Below NAEP Basic. As discussed above, NCLB's goal was that all children attain proficiency or above on state reading and math tests by 2014. Because the rigor of state tests varied widely, however, the percentage of students achieving at "NAEP Proficient and above" has widely been used as a benchmark for assessing outcomes.

By 2014, however, most students were still performing *below* NAEP Proficient in both reading and math.[46] Subsequently, a growing number of analysts have suggested that NAEP Proficiency is an unnecessarily high bar, arguing that NAEP Basic serves as a more appropriate indication of minimum competence in reading and math. NCES defines NAEP Basic as follows:

- *Reading.* "Eighth-grade students performing at the *NAEP Basic* level should be able to locate information; identify statements of main idea, theme, or author's purpose; and make simple inferences from texts. They should be able to interpret the meaning of a word as it is used in the text. Students performing at this level should also be able to state judgments and give some support about content and presentation of content."[47]
- *Mathematics.* "Eighth-grade students performing at the *NAEP Basic* level should exhibit evidence of conceptual and procedural understanding in the five NAEP mathematics content areas. This level of performance signifies an understanding of arithmetic operations—including estimation—on whole numbers, decimals, fractions, and percents."[48]

Eighth graders who score below NAEP Basic in reading and math have thus failed to demonstrate even a minimal level of NCES-defined competence in those two core skill areas, much less attained the goal of proficiency set by NCLB.[49] The study therefore uses the percentages of eighth graders scoring *below NAEP Basic in reading and math* as a reasonable proxy for students "left behind."

2003 to 2017. The study compares scores from the first NAEP assessment administered under NCLB in 2003, which was defined as NCLB's benchmark year, and the last assessment, administered in 2017, which was the final year of NAEP assessments before the Every Student Succeeds Act replaced NCLB.[50] While this approach conceals potential variability during that period, the investigation specifically aims to describe change from the beginning to the end of the NCLB era. (See Figure 3 in the state overviews for a graph showing continuous trends from 2003 to 2017.)

Methods. We began by using the NAEP Data Explorer to determine the *percentages of children* who scored below NAEP Basic on NAEP's eighth-grade reading and math assessments for both lower-income and higher-income—that is, FRL-eligible and -ineligible—children, in 2003 and 2017.[51]

We determined the *change in the proportion of lower-income eighth graders who scored below NAEP Basic* in reading and math from 2003 to 2017 by calculating the difference between the percentages scoring below NAEP Basic at those two points in time, divided by the percentage scoring below NAEP Basic in 2003:

$$\frac{(\%\text{ scoring below NAEP Basic in 2003}) - (\%\text{ scoring below NAEP Basic in 2017})}{(\%\text{ scoring below NAEP Basic in 2003})}$$

We then calculated the *achievement gap* between the lower-income and higher-income groups for both 2003 and 2017, by comparing the percentage of lower-income students who scored below NAEP Basic to the percentage of higher-income students who scored below NAEP Basic on eighth-grade reading and math assessments at each point in time.

Finally, we determined the *change in the achievement gap* between 2003 and 2017 for both reading and math, calculated as the difference between the 2017 and 2003 gaps divided by the 2003 gap:

$$\frac{(2017\text{ gap} - 2003\text{ gap})}{2003\text{ gap}}$$

The study defined a gap decrease of at least 5 percent as "gap narrowed," a gap increase of at least 5 percent as "gap widened," and a change of less than 5 percent in either direction as "gap unchanged."

Findings

The following is a brief overview of the investigation's findings for each of the 50 states and DC; detailed findings are described in the accompanying one-page reports.[52]

The findings reveal a more nuanced picture than that presented by typical accounts focused on average scores. As Figure 1 of each state report shows, average eighth-grade achievement scores in math and reading were close to flat from 2003 to 2017 across all states, despite steadily increasing per-student spending throughout the NCLB period and for decades prior.[53] Discouraging as these data are, however, the average scores hide several patterns that are even more disturbing.

First, in 2017, large percentages of lower-income eighth graders in every state failed to demonstrate even minimal competence in reading and math in 2017, as indicated by scoring below NAEP's lowest level of Basic on assessments of those core skills. (See Figure 2 of the state reports.)

In reading:

- The percentage of lower-income eighth graders scoring below NAEP Basic in reading ranged across states from 27 percent in Indiana and Idaho to 54 percent in the District of Columbia (averaging 36 percent nationally).
- In 36 states and the District of Columbia, one-third or more of lower-income eighth graders scored below NAEP Basic in reading.

In math:

- The percentage of lower-income eighth graders scoring below NAEP Basic in math ranged from 32 percent in Wyoming to 58 percent in Alabama and the District of Columbia (averaging 45 percent nationally).
- In 49 states and the District of Columbia, one-third or more of lower-income eighth graders scored below NAEP Basic in math.
- In nine states and the District of Columbia, more than one-half scored below NAEP Basic in math.

Second, changes from 2003 to 2017 in the proportion of lower-income eighth graders scoring below NAEP Basic were highly uneven across states. While most states saw a decrease in the percentage scoring below NAEP Basic over the 14-year period, in many that decrease was small. In a few states, the proportion of lower-income eighth graders scoring below NAEP Basic increased. Across the board, however, outcomes for lower-income children in 2017 remained strikingly poor. (See Figure 2 of the state reports.)

In reading, changes in the proportion of lower-income eighth graders scoring below NAEP Basic ranged from a decrease of 34 percent in Indiana to an increase of 24 percent in North Dakota. (See Table 2 on page 10.)

- In 16 states, the proportion of lower-income eighth graders scoring below NAEP Basic in reading decreased by 20–34 percent.
- In 32 states, the proportion decreased by 0–19 percent.
- In three states, the proportion increased by 10–24 percent.

In math, changes in the proportion of lower-income eighth graders scoring below NAEP Basic ranged from a decrease of 27 percent in the District of Columbia to an increase of 24 percent in North Dakota. (See Table 2.)

- In 13 states, the proportion of lower-income eighth graders scoring below NAEP Basic in math decreased by 20–27 percent.
- In 31 states, the proportion decreased by 0–19 percent.
- In seven states, the proportion increased by 2–24 percent.

Table 2. Decline in Proportion of FRL-Eligible Eighth Graders Who Scored Below "Basic" on NAEP Reading Assessments from 2003 to 2017 in 50 States and the District of Columbia

READING

STATE	2003	2017	Point Decline	Percentage Decline	
Indiana	41	27	14	34%	20%+
Florida	45	31	14	31%	
Arizona	49	34	15	31%	
California	53	37	16	30%	
Nevada	50	36	14	28%	
New Jersey	44	32	12	27%	
Washington	42	31	11	26%	
Georgia	46	34	12	26%	
Wisconsin	47	35	12	26%	
Pennsylvania	42	32	10	24%	
Hawaii	51	39	12	24%	
Idaho	34	27	7	21%	
Massachusetts	39	31	8	21%	
New Mexico	49	39	10	20%	
Tennessee	45	36	9	20%	
Illinois	41	33	8	20%	
Connecticut	44	36	8	18%	10–19%
Alaska	51	42	9	18%	
Maryland	49	41	8	16%	
Michigan	43	36	7	16%	
Colorado	40	34	6	15%	
Minnesota	44	38	6	14%	
North Carolina	44	38	6	14%	
Nebraska	37	32	5	14%	
Utah	38	33	5	13%	
Louisiana	46	40	6	13%	
Wyoming	33	29	4	12%	
New Hampshire	34	30	4	12%	
Texas	43	38	5	12%	
District of Columbia	61	54	7	11%	
New York	41	37	4	10%	
Vermont	33	30	3	9%	0–9%
Oregon	34	31	3	9%	
Alabama	48	44	4	8%	
Oklahoma	36	33	3	8%	
Iowa	37	34	3	8%	
West Virginia	37	34	3	8%	
South Carolina	42	39	3	7%	
Rhode Island	45	42	3	7%	
Arkansas	39	37	2	5%	
Mississippi	44	42	2	5%	
Montana	30	29	1	3%	
Maine	31	30	1	3%	
Kansas	36	35	1	3%	
Delaware	39	38	1	3%	
Ohio	40	39	1	3%	
Virginia	38	38	0	0%	
Missouri	34	34	0	0%	
Kentucky	31	34	–3	–10%	Below 0%
South Dakota	28	33	–5	–18%	
North Dakota	29	36	–7	–24%	

MATHEMATICS

STATE	2003	2017	Point Decline	Percentage Decline	
Massachusetts	51	33	18	35%	20%+
Tennessee	61	43	18	30%	
Georgia	61	44	17	28%	
Mississippi	67	49	18	27%	
District of Columbia	79	58	21	27%	
Hawaii	58	43	15	26%	
Arizona	55	41	14	25%	
New Jersey	56	42	14	25%	
Pennsylvania	55	42	13	24%	
Virginia	51	39	12	24%	
Illinois	57	45	12	21%	
Florida	55	44	11	20%	
New Mexico	61	49	12	20%	
California	62	51	11	18%	10–19%
Colorado	50	42	8	16%	
Wyoming	38	32	6	16%	
Nebraska	45	38	7	16%	
Wisconsin	52	44	8	15%	
Texas	46	40	6	13%	
Nevada	57	50	7	12%	
West Virginia	49	43	6	12%	
New Hampshire	42	37	5	12%	
Rhode Island	59	52	7	12%	
Washington	44	39	5	11%	
Oregon	45	40	5	11%	
Alabama	65	58	7	11%	
Maryland	58	52	6	10%	
Vermont	41	37	4	10%	
Indiana	42	38	4	10%	
Missouri	47	43	4	9%	0–9%
New York	48	44	4	8%	
Delaware	50	46	4	8%	
Oklahoma	50	46	4	8%	
Arkansas	53	49	4	8%	
Iowa	43	40	3	7%	
Utah	44	41	3	7%	
Kentucky	49	47	2	4%	
Connecticut	50	48	2	4%	
Idaho	40	39	1	3%	
Michigan	53	52	1	2%	
Montana	35	35	0	0%	
North Carolina	47	47	0	0%	
Louisiana	55	55	0	0%	
Ohio	46	46	0	0%	
South Carolina	49	50	–1	–2%	Below 0%
Alaska	49	50	–1	–2%	
Kansas	39	40	–1	–3%	
Maine	40	42	–2	–5%	
Minnesota	36	38	–2	–6%	
South Dakota	37	41	–4	–11%	
North Dakota	33	41	–8	–24%	

Source: Authors' calculations based on National Center for Education Statistics data.

Table 3. Decline in Proportion of FRL-Eligible Eighth Graders Who Scored Below "Basic" on NAEP Reading and Mathematics Assessments from 2003 to 2017 in 50 States and the District of Columbia

MATHEMATICS \ READING	20%+	10–19%	0–9%	Below 0%
20%+	Arizona, Florida, Georgia, Hawaii, Illinois, Massachusetts, New Jersey, New Mexico, Pennsylvania, Tennessee	District of Columbia	Mississippi, Virginia	
10–19%	California, Indiana, Nevada, Washington, Wisconsin	Colorado, Maryland, Nebraska, New Hampshire, Texas, Wyoming	Alabama, Oregon, Rhode Island, Vermont, West Virginia	
0–9%	Idaho	Connecticut, Louisiana, Michigan, New York, North Carolina, Utah	Arkansas, Delaware, Iowa, Missouri, Montana, Ohio, Oklahoma	Kentucky
Below 0%		Alaska, Minnesota	Kansas, Maine, South Carolina	North Dakota, South Dakota

Source: Authors' calculations based on National Center for Education Statistics data.

In 10 states, the proportion of lower-income eighth graders scoring below NAEP Basic decreased by at least 20 percent in both reading and math. In 13 states, the proportions for both were reduced by less than 10 percent; in two states, both increased. The remaining 26 states fell somewhere in between. (See Table 3.)

Across states, large achievement gaps persisted in 2017 between the proportions of lower- and higher-income children scoring below NAEP Basic. (See Figure 3 of the state reports.)

In reading:

- The achievement gap ranged from a 14-point gap in Delaware, Idaho, and Montana to a 30-point gap in Alabama, Mississippi, and Rhode Island and a 36-point gap in the District of Columbia. The gap was 20 points or more in 33 states and the District of Columbia.

In math:

- The achievement gap ranged from a 17-point gap in Hawaii to a 35-point gap in Ohio to a 41-point gap in the District of Columbia.
- The gap was between 20 and 30 points in 36 states and more than 30 points in nine states and the District of Columbia.

Changes in the achievement gap for both reading and math also varied widely across states from 2003 to 2017. Gaps narrowed in some states but widened or remained unchanged in others. Using the study's definition of gap change (described on pages 8–9),

reading gaps narrowed in 26 states and remained unchanged or widened in 24 states and the District of Columbia. Math gaps narrowed in 25 states and remained unchanged or widened in 25 states and the District of Columbia.[54] (See Table 4 on page 13.)

Changes in state-level achievement gaps for reading and math often moved in opposite directions within one state. (See Table 5 on page 14.)

- In 17 states, both reading and math gaps narrowed.
- In eight states and the District of Columbia, both reading and math gaps widened.
- In three states, both reading and math gaps remained unchanged.
- In the remaining 22 states, one gap widened while the other narrowed or remained unchanged.

Discussion

A basic level of competence in reading and math seems a reasonable outcome to expect from eight or nine years of full-time schooling. But this study illuminates the persistent failure of K–12 schooling to accomplish that outcome for large proportions of eighth graders, across all states.

Nationally, from 2003 to 2017 the average percentage of lower-income children scoring below NAEP Basic decreased by 8 percentage points in both reading (from 44 to 36 percent) and math (from 53 to 45 percent). Yet strikingly large percentages of lower-income eighth graders in 2017 still failed to demonstrate minimum levels of competence in core skills, as indicated by NAEP. This was true in all states, even those that improved the most from 2003.

Furthermore, substantial achievement gaps persisted across the board, with wide variation among states in both gaps and patterns of apparent improvement. From 2003 to 2017, the reading gap narrowed by at least 30 percent in only seven states, for example. And while the performance of both lower- and higher-income eighth graders improved in four of those seven states, in the other three states, the gap narrowed not because the performance of the lower-income group improved but because the performance of the higher-income group declined.

In Delaware, for instance, the percentage of lower-income eighth graders scoring below NAEP Basic in reading decreased by 1 percentage point, from 39 to 38 percent. At the same time, the percentage of higher-income eighth graders scoring below NAEP Basic in reading *increased* by 9 percentage points, from 15 to 24 percent. The achievement gap was thereby reduced by almost one-half—yet driven by lowered performance overall.

In nine states and the District of Columbia, the reading performance of lower-income eighth graders improved, but the reading gap still widened because the performance of higher-income children improved more. In other words, achievement rose for both income groups but improved disproportionately among the higher-income children who had already been performing at higher levels.

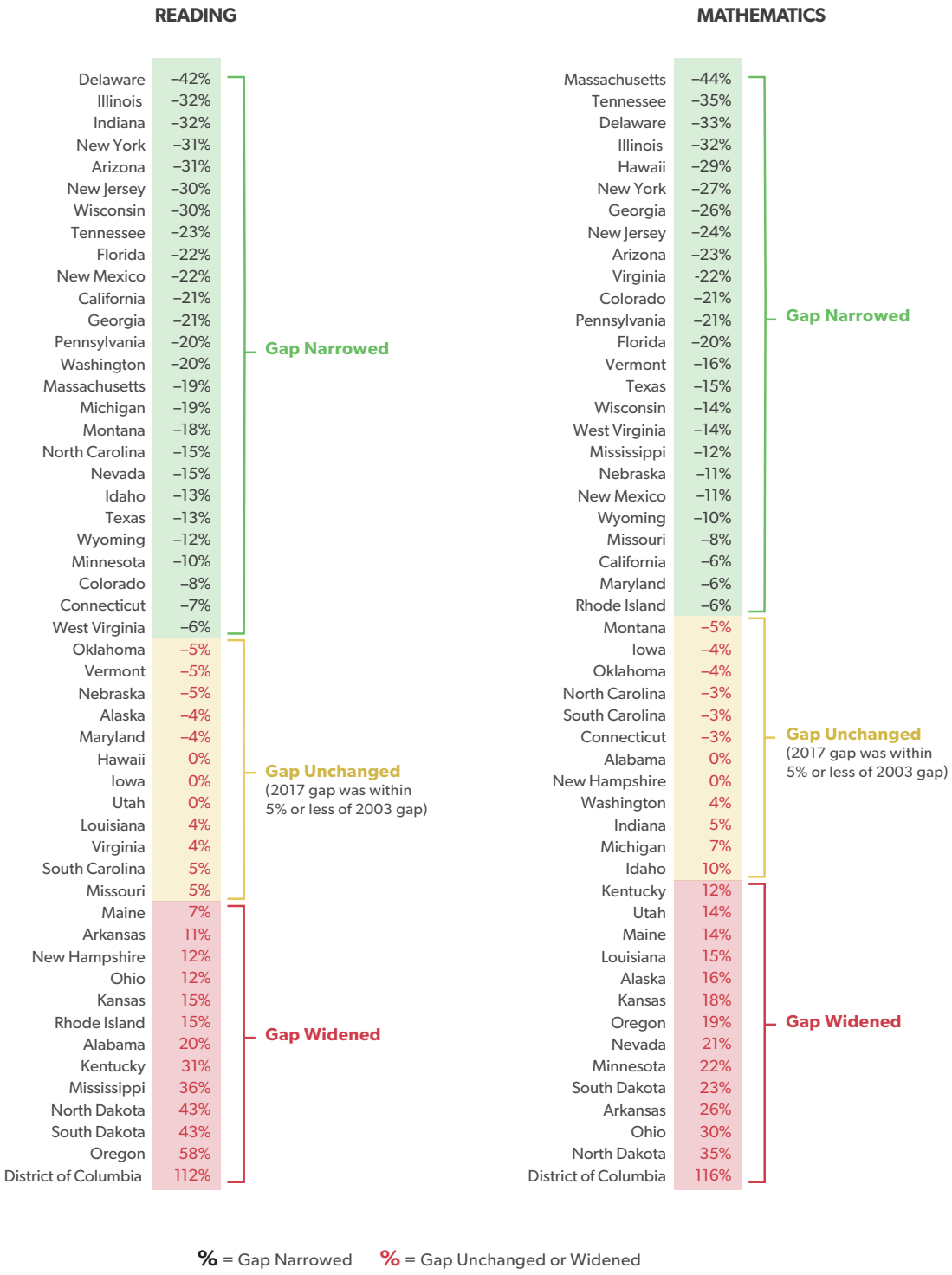
In Oregon, for example, the percentage of lower-income eighth graders scoring below NAEP Basic in reading decreased by 3 percentage points, from 34 to 31 percent. However, that percentage decreased by 10 percentage points—from 22 to 12 percent—for higher-income eighth graders, thereby increasing the achievement gap by almost one-half.

This phenomenon was especially striking in the District of Columbia. The percentage of lower-income eighth graders scoring below NAEP Basic decreased by 7 percentage points (from 61 to 54 percent) in reading and 21 percentage points (from 79 to 58 percent) in math. At the same time, the percentage of higher-income eighth graders scoring below NAEP Basic decreased by 26 percentage points (from 44 to 18 percent) in reading and 43 percentage points (from 60 to 17 percent) in math. Gaps between the two groups therefore more than doubled, for both reading and math.[55]

Notably, few states stood out for both improved achievement of the lower-income group *and* reduced gaps. Only seven states were among the top 15 for both a decreased percentage of lower-income students scoring below NAEP Basic in reading and math and a reduced gap between proportions of lower-income and higher-income eighth graders scoring below NAEP Basic. Just two states were among the top 10 on both those metrics.[56]

Decreasing the proportion of lower-income children who score below NAEP Basic is an important

Table 4. Change in Gap Between Percentage of FRL-Eligible and Non-Eligible Eighth Graders Who Scored Below "Basic" on NAEP Reading and Mathematics Assessments from 2003 to 2017



Source: Authors' calculations based on National Center for Education Statistics data.

Table 5. Changes in Reading and Mathematics Gaps Between FRL-Eligible and Non-Eligible Eighth Graders

MATHEMATICS GAP \ READING GAP	Gap Narrowed	Gap Unchanged	Gap Widened
Gap Narrowed	Arizona, California, Colorado, Florida, Georgia, Hawaii, Illinois, Massachusetts, New Jersey, New Mexico, New York, Pennsylvania, Tennessee, Texas, West Virginia, Wisconsin, Wyoming	Hawaii, Maryland, Missouri, Nebraska, Vermont, Virginia	Mississippi, Rhode Island
Gap Unchanged	Connecticut, Indiana, Montana, North Carolina, Washington	Iowa, Oklahoma, South Carolina	Alabama, New Hampshire
Gap Widened	Idaho, Michigan, Minnesota, Nevada	Alaska, Louisiana, Utah	Arkansas, District of Columbia, Kansas, Kentucky, Maine, North Dakota, Ohio, Oregon, South Dakota

Source: Authors' calculations based on National Center for Education Statistics data.

accomplishment in and of itself. At the same time, the persistence—or, in some cases, growth—of the gap between lower-income and higher-income children, even as achievement of the lower-income group is raised, underscores the substantial challenge of closing gaps between more and less advantaged children over the course of their schooling.

The Role of Free and Reduced-Price Lunch Eligibility. Along with the potential impact of NCLB, a broad range of other influences, both within and outside schools, may have contributed to changes in student achievement from 2003 to 2017.[57] One especially salient factor over that period is the substantial increase in the percentage of higher-income children included in the FRL-eligible group, as noted above.

From 2003 to 2017, the percentage of eighth graders below the federal poverty line increased from just 15 to 16 percent nationally. However, the proportion of FRL-eligible eighth graders increased from 33 to 46 percent over that same period. In 2017, the FRL-eligible group thus clearly included a substantially larger percentage of higher-income children.

At the state level, increases in the percentage of FRL-eligible students varied widely and with little relationship to changes in student poverty. In 2003, the ratio of the proportion of eighth graders who were FRL eligible to the proportion who were poor ranged from 1.5 to 4.8 across states. In 2017, that ratio had increased to a range of 2 to 5.5. Changes in the ratio from 2003 to 2017 varied from a decrease of 34 percent to an increase of 240 percent (Table 6).

Over the past decade, variation within the FRL-eligible group has thus grown substantially. That group now includes children from impoverished households, working- and middle-class children who fall between 100 and 185 percent of the federal poverty line, and an apparently substantial number of wealthier children attending schools that are providing free meals to their entire student population under the Community Eligibility Provision.[58]

Because higher-income children generally score better on NAEP assessments, it is not clear to what

Table 6. Change from 2003 to 2017 in Percentage of FRL-Eligible Eighth Graders as a Proportion of Eighth Graders Living Below the Federal Poverty Line, by State

	2003			2017			2003 to 2017
STATE	% 13- and 14-Year-Olds Below Federal Poverty Line	% Eligible	Ratio of FRL Eligible to Proportion of % Poor	% 13- and 14-Year-Olds Below Federal Poverty Line	% Eligible	Ratio of FRL Eligible to Proportion of % Poor	Increase in % FRL Eligible as a Proportion of % Poor
Alabama	19.0%	47	247%	18.7%	62	332%	34%
Alaska	9.1%	24	264%	8.4%	46	548%	108%
Arizona	16.1%	41	255%	17.2%	53	308%	21%
Arkansas	18.2%	46	253%	22.3%	62	278%	10%
California	16.9%	41	243%	17.0%	56	329%	36%
Colorado	9.8%	26	265%	11.1%	38	342%	29%
Connecticut	8.6%	26	302%	11.3%	35	310%	2%
Delaware	11.0%	33	300%	9.9%	30	303%	1%
District of Columbia	29.9%	57	191%	26.7%	76	285%	49%
Florida	19.2%	43	224%	18.6%	57	306%	37%
Georgia	16.9%	43	254%	19.0%	57	300%	18%
Hawaii	13.7%	43	314%	13.6%	45	331%	5%
Idaho	16.3%	35	215%	13.0%	42	323%	50%
Illinois	14.8%	37	250%	14.3%	49	343%	37%
Indiana	9.8%	29	296%	15.4%	43	279%	–6%
Iowa	11.7%	25	214%	11.6%	37	319%	49%
Kansas	12.7%	32	252%	10.3%	47	456%	81%
Kentucky	20.9%	42	201%	19.9%	55	276%	38%
Louisiana	30.3%	50	165%	23.9%	65	272%	65%
Maine	13.9%	28	201%	7.4%	41	554%	175%
Maryland	8.7%	26	299%	11.4%	41	360%	20%
Massachusetts	12.5%	23	184%	12.2%	25	205%	11%
Michigan	13.6%	26	191%	17.1%	41	240%	25%
Minnesota	7.0%	22	314%	11.0%	35	318%	1%
Mississippi	24.4%	57	234%	24.9%	73	293%	25%
Missouri	12.7%	31	244%	14.6%	46	315%	29%
Montana	11.9%	30	252%	13.7%	43	314%	25%
Nebraska	8.2%	28	341%	11.8%	42	356%	4%
Nevada	7.9%	32	405%	21.6%	58	269%	–34%
New Hampshire	6.5%	13	200%	6.8%	25	368%	84%
New Jersey	9.0%	24	267%	12.9%	35	271%	2%
New Mexico	20.8%	51	245%	25.8%	74	287%	17%
New York	17.6%	44	250%	17.8%	49	275%	10%
North Carolina	13.8%	37	268%	17.3%	47	272%	1%
North Dakota	9.8%	27	276%	9.0%	30	333%	21%
Ohio	14.0%	23	164%	17.4%	44	253%	54%
Oklahoma	19.4%	44	227%	18.7%	58	310%	37%
Oregon	15.6%	26	167%	13.9%	60	432%	159%
Pennsylvania	15.2%	28	184%	15.1%	45	298%	62%
Rhode Island	13.4%	29	216%	13.5%	47	348%	61%
South Carolina	15.7%	45	287%	20.0%	54	270%	–6%
South Dakota	15.2%	32	211%	12.7%	35	276%	31%
Tennessee	16.5%	37	224%	17.0%	46	271%	21%
Texas	20.0%	45	225%	18.1%	57	315%	40%
Utah	5.6%	27	482%	10.1%	35	347%	–28%
Vermont	10.7%	25	234%	13.3%	35	263%	13%
Virginia	7.7%	25	325%	12.2%	37	303%	–7%
Washington	9.1%	27	297%	13.0%	40	308%	4%
West Virginia	22.7%	47	207%	20.2%	75	371%	79%
Wisconsin	11.8%	22	186%	12.3%	36	293%	57%
Wyoming	18.1%	27	149%	7.3%	37	507%	240%

Source: National Center for Education Statistics data.

degree gains of the FRL-eligible group resulted from improved performance of children who were actually low income rather than changes in the group's composition due to the addition of higher-income, higher-performing children. In many states, decreases in the percentage of the FRL-eligible group scoring below NAEP Basic may in fact largely have been driven by changes in the makeup of that group, not by improvements in poor children's performance.

Even given substantial increases in the proportion of higher-income children included in the FRL-eligible group, however, 2017 outcomes for that group remained alarmingly bad across all states. Indeed, even in states often highlighted as exemplars of successful reform, large percentages of the FRL-eligible group scored below NAEP Basic in 2017. For instance:

- In Florida, almost one-third of FRL-eligible eighth graders scored below NAEP Basic in reading, and 44 percent scored below NAEP Basic in math, with achievement gaps between FRL-eligible and -ineligible children of 18 percentage points in reading and 24 percentage points in math.
- In California, over one-third of FRL-eligible eighth graders scored below NAEP Basic in reading, and half scored below NAEP Basic in math, with gaps of 22 percentage points in reading and 30 percentage points in math.
- In Maryland, 41 percent of FRL-eligible eighth graders scored below NAEP Basic in reading, and over half scored below NAEP Basic in math, with gaps of 26 percentage points in reading and 31 percentage points in math.
- In the District of Columbia, 54 percent of FRL-eligible eighth graders scored below NAEP Basic in reading, and 58 percent scored below NAEP Basic in math, with gaps of 36 percentage points in reading and 41 percentage points in math.

Moreover, from 2003 to 2017, the proportion of poor eighth graders in the FRL-eligible group declined in each of these four states, making the persistently low performance of that group especially striking.

- In Florida, the ratio of FRL-eligible children to poor children increased by 37 percent, from 2.2 to 3.
- In California, the ratio of FRL-eligible to poor children increased by 36 percent, from 2.4 to 3.3.
- In Maryland, the ratio of FRL-eligible to poor children increased by 20 percent, from 3 to 3.6.
- In DC, the ratio of FRL-eligible to poor children increased by 49 percent, from 1.9 to 2.9.

The considerably greater heterogeneity of the FRL-eligible group further obscures the achievement of poor students, which is already insufficiently examined. New measures are badly needed to analyze school outcomes for economically disadvantaged students. If more accurate methods were used to assess the performance of actually poor—rather than FRL-eligible—children, the picture revealed would probably be considerably worse.

The Cost of Outcomes. Per-student expenditures on K–12 schooling have increased steeply over the past decades even as achievement has not—a phenomenon that has been described as the "perpetually declining productivity" of public schools.[59] At the same time, education experts have largely ignored considerations of cost-effectiveness in schooling, and neither analysts nor the media typically report spending levels along with achievement trends.[60]

One reason that education spending data are infrequently included in examinations of student achievement is that correctly assessing the relationship between schooling inputs and outcomes is exceptionally difficult. Many factors beyond schools' control affect children's outcomes, influencing the level of resources needed to educate a particular group of students. Moreover, experts disagree on what outcomes should be measured and how.[61] Still, however imperfect, taxpayers and policymakers need information on the relationship between

expenditures and outcomes achieved.[62] A policy assessment of outcomes yielded by K–12 schooling, like outcomes in any other policy area, requires data on what it cost to achieve them.

Toward that end, Figure 2 (page 18) shows the correlation between two key school indicators:

1. State-wide achievement of minimally adequate levels of eighth-grade achievement, defined as the percentage of *all* eighth graders who scored at or above NAEP Basic on 2017 reading and math assessments, and

2. The state's total per-student expenditures, adjusted for the state's cost of living.[63]

As shown, variation in achievement at any spending level is large, with no obvious relationship to state poverty rates for eighth graders.[64]

In reading, for example:

- In both Florida (18.6 percent poverty rate) and Illinois (14.3 percent poverty rate), 77 percent of eighth graders scored at or above NAEP Basic. Florida spent $9,380 per student, while Illinois spent $15,750 per student.

- In both Arizona (17.2 percent poverty rate) and Rhode Island (13.5 percent poverty rate), 75 percent of eighth graders scored at or above NAEP Basic. Arizona spent $8,350 per student, while Rhode Island spent $16,860 per student.

- In California (17 percent poverty rate) and New York (17.8 percent poverty rate), 72 and 73 percent of eighth graders, respectively, scored at or above NAEP Basic. California spent $10,580 per student, while New York spent $19,740 per student.

In math:

- In Indiana (15.4 percent poverty rate) and New Jersey (12.9 percent poverty rate), 75 and 76 percent of eighth graders, respectively, scored at or above NAEP Basic. Indiana spent $10,940 per student, while New Jersey spent $17,350 per student.

- In Oklahoma (18.7 percent poverty rate) and Maryland (11.4 percent poverty rate), 64 and 66 percent of eighth graders, respectively, scored at or above NAEP Basic. Oklahoma spent $8,900 per student, while Maryland spent $13,650 per student.

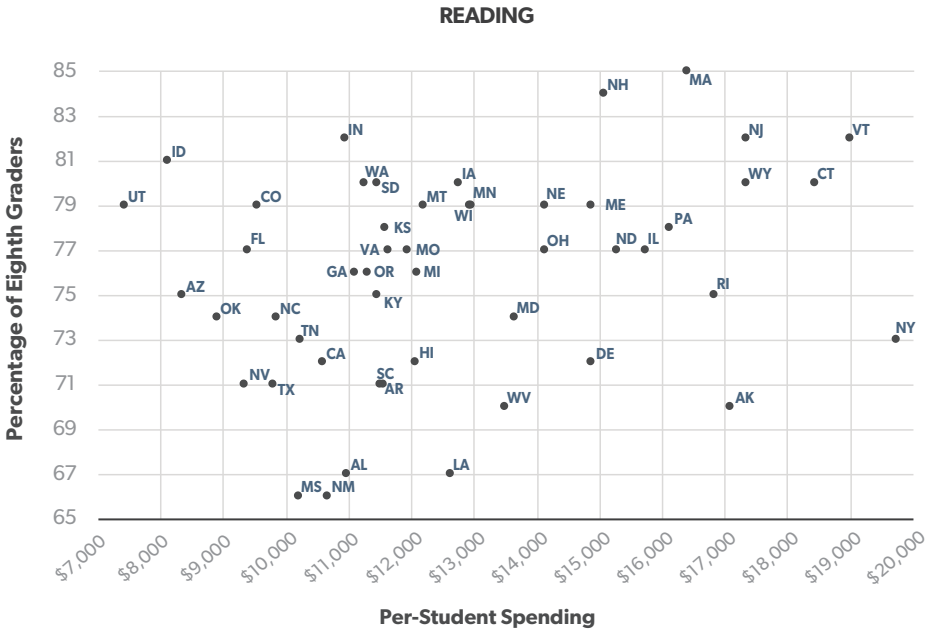
- In both Nevada (21.6 percent poverty rate) and West Virginia (20.2 percent poverty rate), 62 percent of eighth graders scored at or above NAEP Basic. Nevada spent $9,340 per student, while West Virginia spent $13,500 per student.

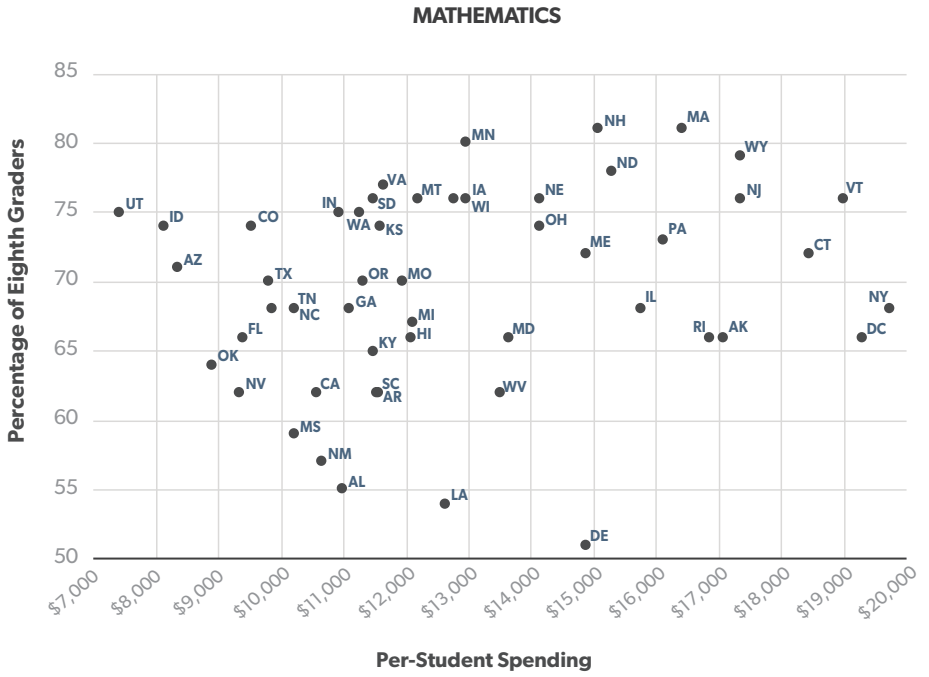
Clearly, Figure 2 does not represent rigorous analysis of the complex relationship between schooling inputs and outcomes. These correlations do not account for the broad range of factors that may contribute to the cost of educating a particular student population, such as household income, parental education levels, family structure, parenting practices, English language proficiency, race and ethnicity, peer characteristics, and percentages of urban versus rural populations. A state may appear to achieve less while spending more simply because the state's population of children is exceptionally challenging to educate.

The correlations shown here are therefore not intended as a causal claim or argument that money does not affect student achievement. Yet, the picture these figures show is consistent with investigations that have used more sophisticated analytical methods to show wide variation in the cost-effectiveness of education spending at the city, district, and state levels.[65] That is, increased expenditures have not been shown to relate to improved outcomes in a clear, systematic way.

In many states, raising the effectiveness of dollars currently spent may yield greater improvements in student outcome than spending more money at current levels of effectiveness. Furthermore, the long-disappointing results for disadvantaged children obtained via schooling suggest that spending additional dollars on alternative approaches to increasing child well-being may, at least in some cases, yield greater value for children, families, and the state than further increasing expenditures on public schools.[66]

Figure 2. Percentage of Eighth Graders Who Scored at or Above NAEP Basic on 2017 NAEP Reading and Mathematics Assessments vs. 2017 Per-Student Spending Adjusted for State Cost of Living, in 50 States and District of Columbia





Note: The District of Columbia is excluded from Panel A as an outlier. For 2017, 55 percent of District of Columbia students scored at or above Basic on NAEP Reading with a cost-adjusted per-student expenditure of $19,299.

Source: National Center for Education Statistics; and US Census Bureau.

Conclusion

More than 50 years after the ESEA was signed into law and close to 14 years since the nation's most far-reaching school reform initiative was launched, the very children long targeted by reform and increased spending were still failing in large numbers. By 2017, despite apparent improvements in some states, the net outcomes of schooling for substantial proportions of children remained disturbingly poor—falling far short of what a half century of reformers, from President Johnson onward, have hoped for.[67] "We're now thirty-six years from 1983," Chester Finn recently observed, yet "the nation is still at risk."[68]

The persistence of that risk is not for lack of trying. The dismal outcomes described in this report were produced in the context of great investment, of both resources and effort, over many decades. Indeed, today's schooling outcomes are the cumulative result of a half century of intensifying reform efforts and steadily increased spending on K–12 schooling. "The most striking aspect of educational expenditure," Daniel P. Moynihan observed in 1972, "is how large it has become."[69] Per-student spending only continued to rise after 1972—more than doubling in 31 states and more than tripling in 14 states and the District of Columbia by 2016, in inflation-adjusted dollars—while, decade after decade, yielding consistently inadequate results.

The picture this report presents does not contradict accounts of notably improved school performance over the past decades. Rather, it directs attention to an under-examined aspect of public schooling: the persistently low achievement outcomes of economically disadvantaged students, often obscured by a prevailing focus on incremental improvements in average scores. Improvement is important. What matters to families, though, and to the taxpayers who fund public schools, is what children actually learn. The degree to which all children achieve at least basic levels of competence in reading and math over eight or nine years in school warrants much greater public and policy attention.

About the Authors

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Notes

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6. Lyndon B. Johnson, "Remarks to the Delegates to the White House Conference on Education" (speech, Washington, DC, July 21, 1965), https://www.presidency.ucsb.edu/documents/remarks-the-delegates-the-white-house-conference-education#ixzz1KXjDVVix.

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21. One important goal of No Child Left Behind (NCLB) was to empower parents to exit failing schools while increasing their access to better ones. Toward that end, the law mandated that children attending poorly performing schools be given the opportunity

to transfer to other public schools in their district, including public charter schools; school districts were required to inform parents that they had this option and pay for transportation to other schools. Between 2000 and 2016, the percentage of public-school students who attended charter schools increased from 1 to 6 percent. US Department of Education, "Helping Families by Supporting and Expanding School Choice," July 2008, https://www2.ed.gov/nclb/choice/schools/choicefacts.html; and US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "Public Charter School Enrollment," May 2019, https://nces.ed.gov/programs/coe/indicator_cgb.asp.

22. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "National Assessment of Educational Progress," https://nces.ed.gov/nationsreportcard/.

23. NCLB required states to participate in National Assessment of Educational Progress (NAEP) math and reading assessments just for fourth and eighth grade. NAEP also administers 12th-grade assessments, but results are only available nationally.

24. Launched in 1990, this biannual NAEP assessment is called "Main NAEP" to distinguish it from "Long-Term NAEP," a separate assessment that was administered every four years beginning in the early 1970s. For more information, see US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "What Are the Differences Between Long-Term Trend NAEP and Main NAEP?," June 25, 2013, https://nces.ed.gov/nationsreportcard/about/ltt_main_diff.asp.

25. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "Scale Scores and NAEP Achievement Levels," October 22, 2019, https://nces.ed.gov/nationsreportcard/guides/scores_achv.aspx.

26. National Assessment Governing Board, *Using the National Assessment of Educational Progress to Confirm State Test Results*, March 1, 2002, https://www.nagb.gov/assets/documents/publications/color_document.pdf. NAEP also administers 12th-grade assessments, but results are only available nationally; NCLB required states to participate in NAEP math and reading assessments for only fourth and eighth grade.

27. Other major school reform initiatives were undertaken during this period, which may also have affected student achievement. For example, in 2009, both the federal Race to the Top initiative and the state-led effort to develop the Common Core State Standards were launched. See US Department of Education, *Race to the Top Program: Executive Summary*, November 2009, https://www2.ed.gov/programs/racetothetop/executive-summary.pdf; and Common Core State Standards Initiative, "About the Standards," http://www.corestandards.org/about-the-standards/. Some have also argued that the Great Recession substantially affected NAEP results from 2010 on. See, for example, Michael J. Petrilli, "The 'Left Behind' Kids Made Incredible Progress from the Late 1990s Until the Great Recession. Here Are Key Lessons for Ed Reform.," Thomas B. Fordham Institute, August 28, 2019, https://fordhaminstitute.org/national/commentary/left-behind-kids-made-incredible-progress-late-1990s-until-great-recession-here.

28. See, for example, Michael J. Petrilli and Nicholas Munyan-Penney, "National Achievement Trends to Watch When New NAEP Scores Are Released Next Month (Complete with 35 Charts!)," Thomas B. Fordham Institute, March 7, 2018, https://fordhaminstitute.org/national/commentary/national-achievement-trends-watch-when-new-naep-scores-are-released-next-month.

29. For example, a Google search for "NAEP average*" since January 1, 2015, yields 45,000 results—16 times the 2,780 results yielded by the same search for "NAEP 'below basic.'"

30. Using average NAEP scores to report student achievement is akin to using average patient life spans to report cancer treatment outcomes. For example, an average life span of 20 years for a group of treated cancer patients could mean that all patients lived for 18 to 22 years after treatment. Or it could mean that half the group lived for 40 years and the other half died within a month.

31. For a discussion of statistical versus practical significance, see Andrew A. Anderson, "Assessing Statistical Results: Magnitude, Precision, and Model Uncertainty," *American Statistician* 73, no. 1 (2019): 118–21, https://www.tandfonline.com/doi/pdf/10.1080/00031305.2018.1537889?needAccess=true; Katharine B. Stevens and Elizabeth English, *Does Pre-K Work? The Research on Ten Early Childhood Programs—And What It Tells Us*, American Enterprise Institute, April 12, 2016, https://www.aei.org/research-products/report/does-pre-k-work-the-research-on-ten-early-childhood-programs-and-what-it-tells-us/; and Ronald L. Wasserstein, Allen L. Schirm, and Nicole A. Lazar, "Moving to a World Beyond 'p < 0.05,'" *American Statistician* 73, no. 1 (2019): 1–19, https://www.tandfonline.com/doi/pdf/10.1080/00031305.2019.1583913?needAccess=true.

32. For examples of graphs scaled this way, see Mississippi Department of Education, "Study: Mississippi's Focus on Literacy Boosted Student Achievement, Teacher Skills," press release, March 20, 2019, https://www.mdek12.org/news/2019/3/20/Study-Mississippis-Focus-on-Literacy-Boosted-Student-Achievement-Teacher-Skills; Nation's Report Card, "NAEP Report Card: 2019 NAEP

Mathematics Assessment," 2019, https://www.nationsreportcard.gov/highlights/mathematics/2019/; *Education Next*, "What to Expect from the 'Nation's Report Card,'" October 24, 2019, https://www.educationnext.org/what-to-expect-nations-report-card-predictions-2019-naep/; Michael J. Petrilli, "The Kids Who Had Been 'Left Behind' Are Doing Much Better Today Than 25 Years Ago. But What About Everyone Else?," Thomas B. Fordham Institute, August 21, 2019, https://fordhaminstitute.org/national/commentary/kids-who-had-been-left-behind-are-doing-much-better-today-25-years-ago-what; DC Public Charter School Board, "Fourth Graders Make Significant Gains on NAEP," April 10, 2018, https://dcpcsb.org/fourth-graders-make-significant-gains-naep; Shane Vander Hart, "NAEP Scores Stagnant After Years of Common Core," *Truth in American Education*, April 12, 2018, https://truthinamericaneducation.com/common-core-state-standards/naep-scores-stagnant-after-years-common-core/; David Osborne and Emily Langhorne, "Analysis: NAEP Scores Show D.C. Is a Leader in Educational Improvement—with Powerful Lessons for Other Cities," 74, April 16, 2018, https://www.the74million.org/article/analysis-naep-scores-show-d-c-is-a-leader-in-educational-improvement-with-powerful-lessons-for-other-cities/; Valerie Strauss, "What the Drop in NAEP Math Scores Tells Us—About Common Core and NAEP," *Washington Post*, November 4, 2015, https://www.washingtonpost.com/news/answer-sheet/wp/2015/11/04/what-the-drop-in-naep-math-scores-tells-us-about-common-core-and-naep/; David Casalaspi, "2015 NAEP Scores: A Look at Performance in the U.S. and Michigan," Michigan State University College of Education, December 9, 2015, https://edwp.educ.msu.edu/green-and-write/2015/2015-naep-scores-a-look-at-performance-in-the-u-s-and-michigan/; and Matthew Ladner, "Florida Crushes the Ball on 2009 NAEP Reading," Jay P. Greene's Blog, March 24, 2010, https://jaypgreene.com/2010/03/24/florida-crushes-the-ball-on-2009-naep-reading/.

33. The National Center for Education Statistics (NCES) in the US Department of Education has recently recognized that the use of graph scales chosen to maximize the visibility of NAEP score changes may present a misleading picture of those changes. NCES therefore now recommends that longitudinal graphs of NAEP scores be displayed on a y-axis showing the "effective range," which encompasses 99.7 percent of student scores: defined as three standard deviations above and below the score mean in the first year the assessments were administered (1992 for reading and 1990 for math). The values of the y-axis for a graph of average eighth-grade NAEP math scores from 2003 to 2017 are therefore set at a minimum of 155 and a maximum of 365, based on a mean of 260 and a standard deviation defined by NCES as 35. Email from James Woodworth (commissioner, National Center for Education Statistics), February 26, 2020.

34. Quantitative descriptive analysis aims to characterize a phenomenon by "identifying patterns in the data to answer questions about who, what, where, when, and to what extent." Causal analysis, on the other hand, aims to determine a cause-and-effect relationship between variables. Susanna Loeb et al., *Descriptive Analysis in Education: A Guide for Researchers,* National Center for Education Evaluation and Regional Assistance, 2017, https://files.eric.ed.gov/fulltext/ED573325.pdf. For an example of causal analysis of NCLB's impact, see Thomas S. Dee and Brian Jacob, "The Impact of No Child Left Behind on Student Achievement," *Journal of Policy Analysis and Management* 30, no. 3 (Summer 2011): 418–46, https://onlinelibrary.wiley.com/doi/abs/10.1002/pam.20586.

35. US Department of Education, "Every Student Succeeds Act (ESSA)," https://www.ed.gov/essa?src=rn.

36. Some analysts have suggested that reporting state-level 12th-grade NAEP results would serve as a much-needed tool for states to evaluate the end product of their K–12 systems, as the outcome both taxpayers and state policymakers ultimately care about most. See, for example, Chester E. Finn Jr., "Why We Need State-by-State NAEP Scores for 12th Graders," *Education Next*, February 8, 2018, https://www.educationnext.org/need-state-state-naep-scores-12th-graders/.

37. Evidence suggests that socioeconomic status, rather than race per se, leads to lower school achievement. But race and socioeconomic status are strongly correlated. Using the official federal poverty measure, black children remain three times more likely to be poor than white children. That correlation has weakened somewhat over the past several decades; reduction of the black-white achievement gap relative to the gap based on economic status may partly be due to a relative decline in poverty among black children. From 1975 to 2018, poverty rates declined among black children by 12 percentage points, compared to a 1.9 point decline among white children. Further, from 1970 to 2018, the proportion of all *poor* children who are black decreased from 38 percent to 28 percent, even as the *overall* proportion of children who are black increased from 14 to 15 percent. Greg J. Duncan and Katherine Magnuson, "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems," in *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, ed. Greg J. Duncan and Richard J. Murnane (New York: Russell Sage, 2011), 47–69; Eric A. Hanushek et al., "The Unwavering SES Achievement Gap: Trends in U.S. Student Performance" (working paper, National Bureau of Economic Research, Cambridge, MA, March 2019), https://www.nber.org/papers/w25648; Sean Reardon, "The Widening Academic Achievement

Gap Between the Rich and the Poor: New Evidence and Possible Explanations," in *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, ed. Greg J. Duncan and Richard J. Murnane (New York: Russell Sage, 2011); US Census Bureau, "Historical Poverty Tables: Table 3. Poverty Status of People by Age, Race, and Hispanic Origin," April 6, 2020, https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-people.html; and William Julius Wilson, *The Declining Significance of Race: Blacks and Changing American Institutions*, 3rd ed. (Chicago: University of Chicago Press, 2012).

38. Free and reduced-price meals are provided through the federal National School Lunch Program (NSLP), created by the Richard B. Russell National School Lunch Act of 1946 to provide low-cost or free school lunches to qualified students through federal subsidies to schools. In 1966, the Child Nutrition Act added the School Breakfast Program, and in 2010, the Healthy, Hunger-Free Kids Act substantially expanded eligibility for free and reduced-price school meals. In fiscal year 2018, the NSLP provided low-cost or free lunches to 29.7 million children (52 percent of all US schoolchildren) daily at a cost of $13.8 billion, and it is now the nation's second-largest food and nutrition assistance program (after the Supplemental Nutrition Assistance Program). US Department of Agriculture, Economic Research Service, "National School Lunch Program," August 20, 2019, https://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program/.

39. Hansen et al. describe FRL-eligible and FRL-ineligible students as "roughly the top and bottom halves of student population by family income." Michael Hansen et al., "2018 Brown Center Report on American Education: Trends in NAEP Math, Reading, and Civics Scores," Brookings Institution, June 27, 2018, https://www.brookings.edu/research/2018-brown-center-report-on-american-education-trends-in-naep-math-reading-and-civics-scores/.

40. For examples of recent research using this measure, see Wes Austin et al., "Where Are Initially Low-Performing Students the Most Likely to Succeed? A Multi-State Analysis of Academic Mobility (Preliminary Draft)" (working paper, National Center for Analysis of Longitudinal Data in Education Research, Washington, DC, February 2020), https://caldercenter.org/publications/where-are-initially-low-performing-students-most-likely-succeed-multi-state-analysis; Bruce D. Baker, Danielle Farrie, and David G. Sciarra, "Mind the Gap: 20 Years of Progress and Retrenchment in School Funding and Achievement Gaps," *ETS Research Report Series* 2016, no. 1 (June 2016): 1–37, https://onlinelibrary.wiley.com/doi/full/10.1002/ets2.12098; Lauren Dotson Davis, "Common Core and the Continued Socioeconomic Achievement Gap: How Can We Better Prepare Future Teachers?," *Journal of Education and Learning* 8, no. 6 (2019), http://www.ccsenet.org/journal/index.php/jel/article/view/0/41079; Hansen et al., "2018 Brown Center Report on American Education"; Eric Isenberg et al., "Do Low-Income Students Have Equal Access to Effective Teachers? Evidence from 26 Districts," *Mathematica Policy Research*, October 27, 2016, https://www.mathematica.org/our-publications-and-findings/publications/do-low-income-students-have-equal-access-to-effective-teachers-evidence-from-26-districts; and Dave E. Marcotte and Kari Dalane, "Socioeconomic Segregation and School Choice in American Public Schools," *Educational Researcher* 48, no. 8 (2019): 493–503, https://journals.sagepub.com/doi/10.3102/0013189X19879714.

41. For 2017, 185 percent of the federal poverty level was $44,955 for a family of four. US Department of Agriculture, "Notices," *Federal Register* 81, no. 56 (March 23, 2016): 15501–04, https://www.govinfo.gov/content/pkg/FR-2016-03-23/pdf/2016-06463.pdf.

42. See Lee Hoffman, *Free and Reduced-Price Lunch Eligibility Data in EDFacts: A White Paper on Current Status and Potential Changes*, US Department of Education, 2012, https://files.eric.ed.gov/fulltext/ED556048.pdf. Also see Matthew M. Chingos, "No More Free Lunch for Education Policymakers and Researchers," Brookings Institution, June 30, 2016, https://www.brookings.edu/research/no-more-free-lunch-for-education-policymakers-and-researchers/; and Tom Snyder and Lauren Musu-Gillette, "Free or Reduced Price Lunch: A Proxy for Poverty?," US Department of Education, Institute of Education Sciences, National Center for Education Statistics, April 16, 2015, https://nces.ed.gov/blogs/nces/post/free-or-reduced-price-lunch-a-proxy-for-poverty.

43. American Federation of Teachers, "Community Eligibility Provision (CEP)," https://www.aft.org/childrens-health/nutrition/community-eligibility-provision.

44. Poverty rates reported here are for children ages 13 and 14, in 2003 and 2017. Data are sourced from IPUMS USA based on the 2003 and 2017 American Community Surveys, performed by the US Census Bureau. Steven Ruggles et al., IPUMS USA: Version 10.0, 2020, https://usa.ipums.org/usa/.

45. Similarly, in 2003, 33 percent of eighth graders were below 185 percent of the federal poverty level, and the same percentage were FRL eligible. In 2017, however, while 36 percent of eighth graders were below 185 percent of the federal poverty level, the percentage who were FRL eligible had increased to 46 percent.

46. Anya Kamenetz, "It's 2014. All Children Are Supposed to Be Proficient. What Happened?," National Public Radio, October 11, 2014, https://www.npr.org/sections/ed/2014/10/11/354931351/it-s-2014-all-children-are-supposed-to-be-proficient-under-federal-law.

47. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "The NAEP Reading Achievement Levels by Grade," https://nces.ed.gov/nationsreportcard/reading/achieve.aspx.

48. The five NAEP mathematics content areas are number properties and operations; measurement; geometry; data analysis, statistics, and probability; and algebra. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "The NAEP Mathematics Achievement Levels by Grade," June 18, 2019, https://nces.ed.gov/nationsreportcard/mathematics/achieve.aspx.

49. For more information on questions used on NAEP assessments, see US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "NAEP Questions Tool," https://nces.ed.gov/nationsreportcard/nqt.

50. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "Important Aspects of No Child Left Behind Relevant to NAEP," August 10, 2005, https://nces.ed.gov/nationsreportcard/nclb.aspx. Every Student Succeeds Act implementation was signed into law on December 10, 2015, and began in 2017–18. Council of Chief State School Officers, "ESSA Implementation Timeline: A Guide to Key State and Local Processes," February 2018, https://ccsso.org/sites/default/files/2018-02/ESSA%20Implementation%20Timeline%20Resource.pdf; and US Department of Education, "Every Student Succeeds Act (ESSA)," https://www.ed.gov/essa?src=rn.

51. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer, https://www.nationsreportcard.gov/ndecore/xplore/NDE.

52. Figure 1 of the state graphs shows total per-student spending, including local, state, and federal dollars. Because these graphs are intended to show change within each state over time—not to compare spending levels among states—the graphs' left y-axis varies depending on levels of individual state spending. The right y-axis—showing eighth-grade average reading and math NAEP scores—is set at a minimum of 155 and a maximum of 365, per NCES's new recommendation. (See endnote 33.)

53. The lines appear close to flat when displayed on a graph using the scale of NAEP's "effective range," as now recommended by NCES. (See endnote 33.) From a statistical point of view, however, they may not be. For example, from 2003 to 2017, average national scores in eighth-grade math increased by 15 percent of a standard deviation, and average scores in eighth-grade reading increased by a little under 10 percent of a standard deviation. From a statistical point of view, that is significant change. From a practical point of view, it is less meaningful. The distinction between statistical and practical significance, while not always made clear in discussions of "significant" changes in student achievement, is crucial when used to inform policy decisions. For discussions of this distinction, see Anderson, "Assessing Statistical Results"; Stevens and English, *Does Pre-K Work?*; and Wasserstein, Schirm, and Lazar, "Moving to a World Beyond '$p < 0.05$.'"

54. The degree of percentage decline depends on the size of the 2003 gap. From 2003 to 2017, for example, the gap was reduced by 3 percentage points in both Montana and Minnesota. However, Montana's 2003 gap of 17 percentage points was smaller than Minnesota's of 29 percentage points. As a result, a gap reduction of 3 percentage points from 2003 to 2017 translated into a gap reduction of 18 percent in Montana but just 10 percent in Minnesota. See Figures 2 and 3 in the state reports for detailed, state-by-state data on 2003 gaps.

55. For a general discussion of this phenomenon in universal social programs, see Stephen J. Ceci and Paul B. Papierno, "The Rhetoric and Reality of Gap Closing: When the 'Have-Nots' Gain but the 'Haves' Gain Even More," *American Psychologist* 60, no. 2 (2005): 149–60, https://psycnet.apa.org/doiLanding?doi=10.1037%2F0003-066X.60.2.149.

56. Arizona, Florida, Georgia, Massachusetts, New Jersey, Pennsylvania, and Tennessee were the only seven states among the top 15 for reducing both the percentage of lower-income eighth graders scoring below NAEP Basic in reading and math and the gap between proportions of lower-income and higher-income eighth graders scoring below NAEP Basic. Just Arizona and New Jersey were among the top 10 on both those metrics.

57. See endnote 27. As Hansen et al. recently noted: "Trends in NAEP scores reflect the effects of a wide variety of factors, some school-based and others not. Although NCLB was arguably the most consequential education policy of this period, it certainly was not the only factor shaping these scores." Hansen et al., "The 2018 Brown Center Report on American Education."

58. A growing number of researchers have noted the implications of this substantial change in the composition of the FRL-

eligible group. The data presented here underscore the need for much closer investigation of this phenomenon and the urgency of developing better income measures. For a discussion of a potential approach, see Matthew M. Chingos, "A Promising Alternative to Subsidized Lunch Receipt as a Measure of Student Poverty," Brookings Institution, August 16, 2018, https://www.brookings.edu/research/a-promising-alternative-to-subsidized-lunch-receipt-as-a-measure-of-student-poverty/.

59. Paul Hill and Marguerite Roza, *Curing Baumol's Disease: In Search of Productivity Gains in K–12 Schooling*, Center on Reinventing Public Education, July 2010, https://edunomicslab.org/wp-content/uploads/2013/12/whp_crpe1_baumols_jul10_0.pdf. Experts identify various possible explanations for declining K–12 education productivity, including Baumol's cost disease, the role of public employee unions, ineffective and inefficient resource allocation, rising costs of health and pension benefits, and declines in labor quality. See Eric A. Hanushek and Elizabeth Ettema, "Defining Productivity in Education: Issues and Illustrations," *American Economist* 65, no. 2 (October 2017): 165–83, http://hanushek.stanford.edu/publications/defining-productivity-education-issues-and-illustrations-0.

60. Hanushek and Ettema, "Defining Productivity in Education"; and Hill and Roza, *Curing Baumol's Disease.*

61. Hanushek and Ettema, "Defining Productivity in Education."

62. Public views on school spending may be driven in part by lack of knowledge on how much is currently spent. While Americans consistently cite lack of funding as the biggest problem schools face, respondents in a recent *Education Next* poll underestimated per-student spending by almost one-third. Further, the percentage of respondents saying that government funding for public schools in their district should increase dropped from 54 to 39 percent after they were informed of current spending levels. Rebecca Silliman and David Schleifer, *Our Next Assignment: Where Americans Stand on Public K–12 Educatio*n, Public Agenda, October 2018, https://files.eric.ed.gov/fulltext/ED594795.pdf; and Martin R. West et al., "The 2017 EdNext Poll on School Reform: Public Thinking on School Choice, Common Core, Higher Ed, and More," *Education Next* 18, no. 1 (Winter 2018): 33–52, https://www.educationnext.org/2017-ednext-poll-interactive/.

63. State education expenditure figures refer to the 2016–17 school year and are sourced from the National Center for Education Statistics' "National Public Education Financial Survey" of the Common Core of Data. Expenditures include instruction, support services, food services, and enterprise operations. National Center for Education Statistics, "Current Expenditure per Pupil in Fall Enrollment in Public Elementary and Secondary Schools, by State or Jurisdiction: Selected Years, 1969–70 Through 2016–17," 2019, https://nces.ed.gov/programs/digest/d19/tables/dt19_236.65.asp?current=yes. Achievement data are from NAEP's 2017 assessment. National Assessment of Educational Progress, NAEP Data Explorer, https://www.nationsreportcard.gov/ndecore/landing. State cost-of-living adjustments were calculated based on data from the US Bureau of Economic Analysis. Robert Bellafiore, Aida Vazquez-Soto, and Scott Eastman, "Regional Price Parities by State, 2017," Tax Foundation, August 14, 2019, https://taxfoundation.org/real-value-100-state-2019/.

64. Hanushek and Woessmann use a similar approach to show variation in per-student expenditure and student achievement across countries. Eric A. Hanushek and Ludger Woessmann, *The Knowledge Capital of Nations: Education and the Economics of Growth* (Cambridge, MA: MIT Press, 2015). Poverty rates reported here are for children ages 13 and 14, in 2003 and 2017. Data are sourced from IPUMS USA based on the 2003 and 2017 American Community Surveys, performed by the US Census Bureau. Ruggles et al., IPUMS USA: Version 10.0.

65. Ulrich Boser, *Return on Educational Investment: A District-by-District Evaluation of U.S. Educational Productivity*, Center for American Progress, January 2011, https://files.eric.ed.gov/fulltext/ED535853.pdf; Ulrich Boser, *Return on Educational Investment: 2014: A District-by-District Evaluation of U.S. Educational Productivity*, Center for American Progress, July 2014, https://cdn.americanprogress.org/wp-content/uploads/2014/07/ROI-report.pdf; Institute for a Competitive Workforce, *Leaders and Laggards: A State-by-State Report Card on Educational Effectiveness*, February 2007, https://www.uschamberfoundation.org/sites/default/files/publication/edu/2007%20Leaders%20%26%20Laggards.pdf; and Richie Bernardo, "Cities with the Most & Least Efficient Spending on Education," WalletHub, April 4, 2016, https://wallethub.com/edu/e/cities-with-the-most-least-efficient-spending-on-education/9390/.

66. For discussion of using cost-effectiveness analysis to inform public resource allocation, see Ed Balls, "The Political Economy of Public Spending Reviews: The UK Experience Since 1997," Harvard Kennedy School, Mossavar-Rahmani Center for Business and Government, April 2019, https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/113_final_V2.pdf; and Patrick J. McEwan, "Cost-Effectiveness Analysis of Education and Health Interventions in Developing Countries," *Journal of Development Effectiveness* 4, no. 2 (June 2012): 189–213, http://academics.wellesley.edu/Economics/mcewan/PDF/cea.pdf.

67. The findings of this report are consistent with other recent work examining socioeconomic achievement gaps over time. For example, Hanushek et al. found that those gaps "have been wide and persistent for the last half century," despite quadrupled public spending per student between 1960 and 2015 in constant dollars and decades of extraordinary efforts to improve the education of economically disadvantaged children. See Hanushek et al., "The Unwavering SES Achievement Gap." Also see Hanushek et al., "Long-Run Trends in the U.S. SES-Achievement Gap"; Reardon, "The Widening Academic Achievement Gap Between the Rich and the Poor"; Greg J. Duncan and Richard J. Murnane, eds., *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances* (New York: Russell Sage, 2011); and Nick Anderson, "'We Didn't Know It Was This Bad': New ACT Scores Show Huge Achievement Gaps," *Washington Post*, September 7, 2017, https://www.washingtonpost.com/local/education/we-didnt-know-it-was-this-bad-new-act-scores-show-huge-achievement-gaps/2017/09/06/c6397f36-9279-11e7-aace-04b862b2b3f3_story.html.

68. Chester E. Finn Jr., "The Proficiency Bar Is Inching Upward, Yes, But . . .," Thomas B. Fordham Institute, August 28, 2019, https://fordhaminstitute.org/national/commentary/proficiency-bar-inching-upward-yes.

69. Daniel P. Moynihan, "Equalizing Education: In Whose Benefit?," *Public Interest* 29, no. 73 (Fall 1972): 70.

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