

PLANNING AND EVALUATION SERVICE ANALYSIS AND HIGHLIGHTS
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School Poverty and Academic Performance: NAEP Achievement in High-Poverty Schools

BACKGROUND

This report presents findings from special analyses of student achievement on the National Assessment of Educational Progress prepared for Planning and Evaluation Services by the Educational Testing Services in conjunction with the National Center for Education Statistics.

The purpose of the report is to examine student achievement in the context of school poverty in the United States. Given the Department's long standing concern with the gap in achievement between students in high-poverty schools and their more advantaged peers, this report presents analyses of recent trend, national, and state NAEP assessment results in reading and math for 4th grade and 9-year old students in high- and low-poverty schools.

KEY FINDINGS

- **While the gap in reading and math achievement for 4th grade and 9 year-old students in high- and low-poverty schools is significant, there are some recent signs of improvement.**
 - The gap in average math scores between 9-year-olds in high-poverty schools and low-poverty schools was 22 points in 1996, down from a 28-point gap in 1992 and a 24-point gap in 1994. The achievement gap in reading between students in high- and low-poverty schools is substantially larger. The average difference in reading achievement between 9 year-old students in high and low-poverty schools was 38 points in 1996, although down from a 40 point gap in 1994.
- **In math, there has been an upward trend in achievement for 4th grade and 9 year-old students on NAEP since 1992.**
 - Data from the 1996 NAEP long-term trend assessment show a significant rise in the scores of 9-year-olds across all levels of school poverty since 1992. The percentage of 4th grade students in high-poverty schools scoring at least at the basic level on the NAEP national math main assessment was 42 percent in 1996, up from 26 percent in 1992. In 27 states there was a significant increase in the percentage of 4th grade students in high-poverty schools scoring at or above the basic level in math between 1992 and 1996.

- **Reading presents a more complicated picture. The gap in reading performance between students in high- and low-poverty schools is dramatically higher than the gap in math and NAEP scores have been stagnant across all levels of school poverty.**
 - Although data from the NAEP long-term trend assessment show an upward turn in the average reading scores of 9-year-olds between 1992 and 1996, results from the NAEP national assessment show a decrease in the percentage of 4th grade students in high-poverty schools scoring at the basic level in reading — from 33 percent in 1992 to 26 percent in 1994. (The main NAEP assessment in reading was not administered in 1996. Results from the 1998 NAEP main reading assessment are expected to be released in January, 1999.) State NAEP results reveal that 5 states experienced a significant increase in the percentage of students in high-poverty schools scoring at or above the basic level in reading between 1992 and 1994.

Copies of this Planning and Evaluation Service report are available by contacting the U.S. Department of Education at 1-800-USA-LEARN.

DRAFT

School Poverty and Academic Performance:

NAEP Achievement in High-Poverty Schools

A Special Evaluation Report for the National Assessment of Title I

**U.S. Department of Education
Office of the Under Secretary
Planning and Evaluation Service
Elementary and Secondary Division**

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Summary and Major Findings

Before we can realize a system of public education in the United States where *all* children can reach high standards, we must face the challenges of poverty, particularly concentrated poverty, and its effects on learning. Student achievement data reveal a large and longstanding gap in academic performance between students in high- and low-poverty schools at all grade levels. Children in high-poverty schools tend to begin school academically behind their peers in low-poverty schools and often are unable to close this gap as they progress through school.¹ Data from the long-term trend assessment of the National Assessment of Educational Progress (NAEP) show that in high-poverty schools (where 75 percent or more of the students come from low-income families) achievement is, on average, two or three grade levels behind that in low-poverty schools (where fewer than 25 percent of students are from low-income families).

Reducing this achievement gap is a great concern of the U.S. Department of Education. Although the federal role in education is limited — accounting for about 7 percent of elementary and secondary education spending² — federal resources are focused primarily on helping to provide high-quality education for students who live in poverty, are at risk of school failure, or have special needs.

According to the 1996 NAEP results, there continues to be a large gap in academic performance between students in high- and low-poverty schools. However the data show some recent signs of improvement for 9-year-olds and 4th grade students:

- ▶ Long-term trend data show that the achievement gap is narrowing. The gap in average math scores between 9-year-olds in high-poverty schools and low-poverty schools was 22 points in 1996, down from a 28 point gap in 1992 and a 24 point gap in 1994. The achievement gap in reading between students in high- and low-poverty schools is substantially larger. The gap in average reading scores between 9-year-olds in high- and low-poverty schools was 38 points in 1996, although down from a 40 point gap in 1994.³
- ▶ In math an upward trend in achievement is evident. Data from the 1996 NAEP long-term trend assessment show a significant rise in the scores of 9 year-olds across all levels of school poverty since 1992. The percentage of 4th grade students in high-poverty schools achieving at or above the basic level in math on NAEP increased from 26 percent in 1992 to 42 percent in 1996. In 27 states there was a significant increase in the percentage of

¹ U.S. Department of Education, Planning and Evaluation Service. *Prospects: Student Outcomes Final Report* (April 1997).

² U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey (1993-94).

³ Scores are rounded to the nearest whole number. Ten points in NAEP scores is approximately equivalent to one grade level.

students in high-poverty schools scoring at or above the basic level in math between 1992 and 1996.

- Evidence of overall progress in reading is also provided, although the most recent available NAEP main and state assessment data are from 1994. (The main NAEP assessment in reading was not administered in 1996. Results from the 1998 NAEP main reading assessment are expected to be released in January, 1999.) The gap in performance between students in high- and low-poverty schools in reading is dramatically higher than the gap in math performance. While long-term trend data show an upward turn in the average reading scores of 9 year-olds in high-poverty schools between 1992 and 1996, data from the 1994 NAEP national assessment in reading show a decline in the percentage of 4th grade students in high-poverty schools scoring at or above the basic level -- from 33 percent in 1992 to 26 percent in 1994. State NAEP results reveal that 5 states experienced a significant increase in the percentage of students in high-poverty schools scoring at or above the basic level in reading between 1992 and 1994.

Introduction and Background

Poverty is a significant problem for many of our nation's children. In 1995, the U.S. Bureau of the Census estimated that 20 percent of American children under the age of 18 lived in poverty, an increase of 5% since 1970. Moreover, both black and Hispanic children — at 42 and 39 percent poverty, respectively — are more than twice as likely as white children to be poor.⁴ Particularly in the urban core, communities are faced with dense concentrations of poverty that pose formidable challenges for schools. One-third of the children in America's cities live in poverty.⁵ In cities such as Detroit, New Orleans, Miami, Atlanta, and Cleveland, more than 40 percent of the children are poor. This poverty rate is twice the national average and twice the average poverty rate of the states in which the cities are located.

America's public schools must face the challenges of educating poor children. Overall, in 34 percent of U.S. public schools, half or more of the student population come from low-income families.⁶ In cities such as Baltimore, for example, the concentration of poor children in the city's schools is great. In over 80 percent of schools more than half the students fall below

⁴ Current Population Reports, *Poverty in the United States* (Washington, DC: U.S. Bureau of the Census, 1996).

⁵ U.S. Bureau of the Census Current Population Reports, cited in Lippman, Laura. *Urban Schools: The Challenge of Location and Poverty* (Washington, DC: National Center for Education Statistics, 1996).

⁶ U.S. Department of Education, *Fast Response School Survey: School Reform 1997-98*. Students from low-income families are defined as those whose children qualify for free and reduced-price school lunch.

the poverty line; in more than 50 percent of the city's schools, more than three quarters of the students come from low-income families.⁷

These statistics translate into severe educational disadvantage for many children. The effects of poverty on learning are profound. On the individual level, poverty has numerous correlates that inhibit learning. Children who live in poverty are more likely than other children to experience family disruption, abuse, or neglect. Poor children are more likely than their non-poor peers to grow up unhealthy and to become victims of crime.⁸ Low-income students are less likely to take challenging courses and more likely to drop out of school. Parents in economically disadvantaged families tend to have limited education and involvement in their children's learning. Teachers of low income students are less likely to have high expectations for academic achievement.

But the effects of poverty on student achievement are not isolated only to individual students who are poor. Research shows that the achievement levels of both poor and non-poor students decline as the poverty levels of schools increase. Low-income students in low-poverty schools have higher achievement than low-income students in high-poverty schools.⁹ Thus, the degree to which students are at risk of educational failure depends not only on their own situation; there is a significant poverty effect on all students in higher poverty schools.

In recognition of the strong relationship between poverty and student performance, the U.S. Department of Education, through Title I of the Elementary and Secondary Education Act (ESEA), provides approximately \$7.5 billion a year in financial assistance to improve learning for students, particularly those who are at risk of educational failure, in economically disadvantaged communities. Part of the purpose of the 1994 reauthorization of ESEA was to better target resources to address the needs of poor children attending schools with high concentrations of poverty. For example, Title I requires districts to rank and fund schools according to poverty levels, thereby ensuring that, within districts, resources are distributed to schools where needs are greatest. Because poverty affects the entire school environment, high-poverty schools are encouraged to adopt schoolwide programs to improve teaching and learning for all children.¹⁰

⁷ Maryland State Department of Education (1996).

⁸ Education Week, *Quality Counts '98* (Washington, DC: Author, January 1998).

⁹ U.S. Department of Education, *Prospects* (1997).

¹⁰ Some important qualifications must be noted in making policy interpretations about the impact of Title I based on the data in this report. First, the Department distributes Title I grants according to a congressionally mandated formula that reaches almost all districts and about 60 percent of schools — not only those with — particularly high levels of concentrated poverty. According to 1996 student-level NAEP data, 22 percent of 4th graders in U.S. public schools participate in Title I programs. Second, some of the NAEP results presented here pre-date the implementation of the reauthorized Title I. Although the NAEP national and state main assessments in

This report focuses on recent trends in student achievement in math and reading for elementary school students in high-poverty schools.¹¹ The data illustrate that poverty has a significant impact on student achievement. The data also reveal that there have been some improvements in achievement for 9-year-old and 4th grade students and some narrowing of the gap between student achievement in high- and low-poverty schools, particularly in math. But the data also point to reading as a particular challenge in high-poverty schools, where children lag well behind their peers in lower poverty schools, and students may not have the strong home support for literacy that may be critical to reading achievement.

Findings

Mathematics¹²

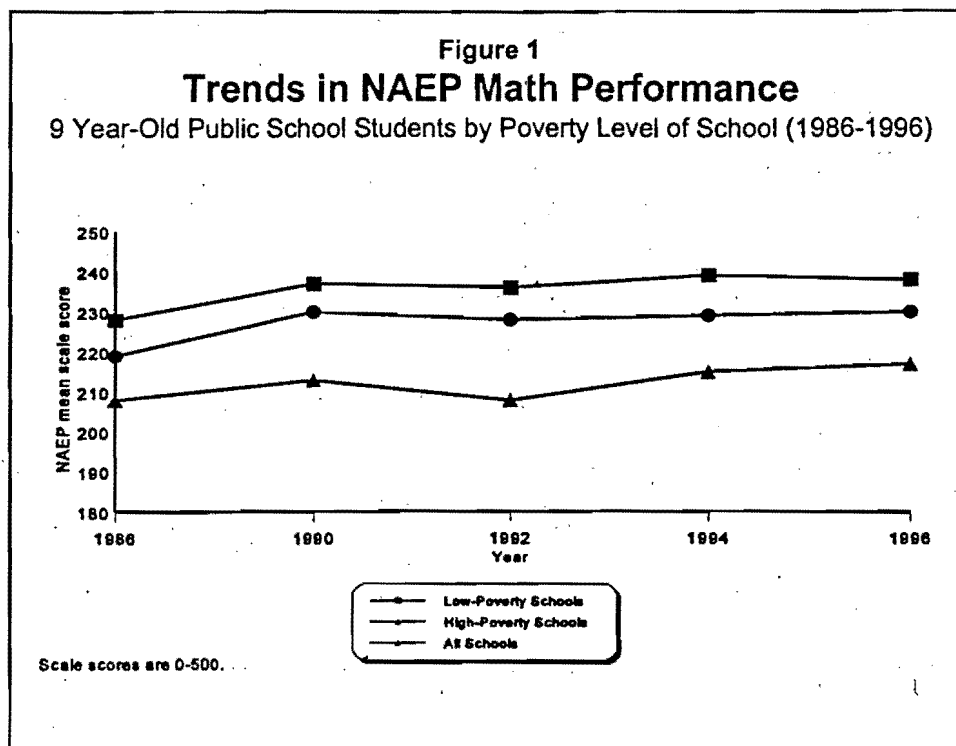
The NAEP long-term trend assessment shows generally upward trends in math achievement for 9-year-olds across all school poverty levels. The average scale score for 9 year-old public school students in math in 1996 was 231; in low-poverty schools, the average score was 238, and in high-poverty schools, the average scale score was 217. For high-poverty schools, this average scale score is a significant improvement over the average score in 1992, roughly equivalent to an increase of one grade level.¹³ Since peaking at 28 points in 1992, the achievement gap in math between students in high- and low-poverty schools has narrowed to 22 points in 1996; however the achievement gap in 1996 is approximately the same as it was in 1986. (Figure 1)

math were administered in 1996, the latest results in reading are from 1994. The 1998 NAEP results for both math and reading will be released in early 1999.

¹¹ This report presents NAEP data for 9 year-olds and 4th grade students. Data for 13- and 17-year-olds as well as 8th grade students are less reliable because of the large amount of missing and inaccurate data on school poverty (percentages of students receiving free and reduced-price lunch) as students reach middle and high school. See the last section of this report "Data Sources" for a more detailed description of the analysis.

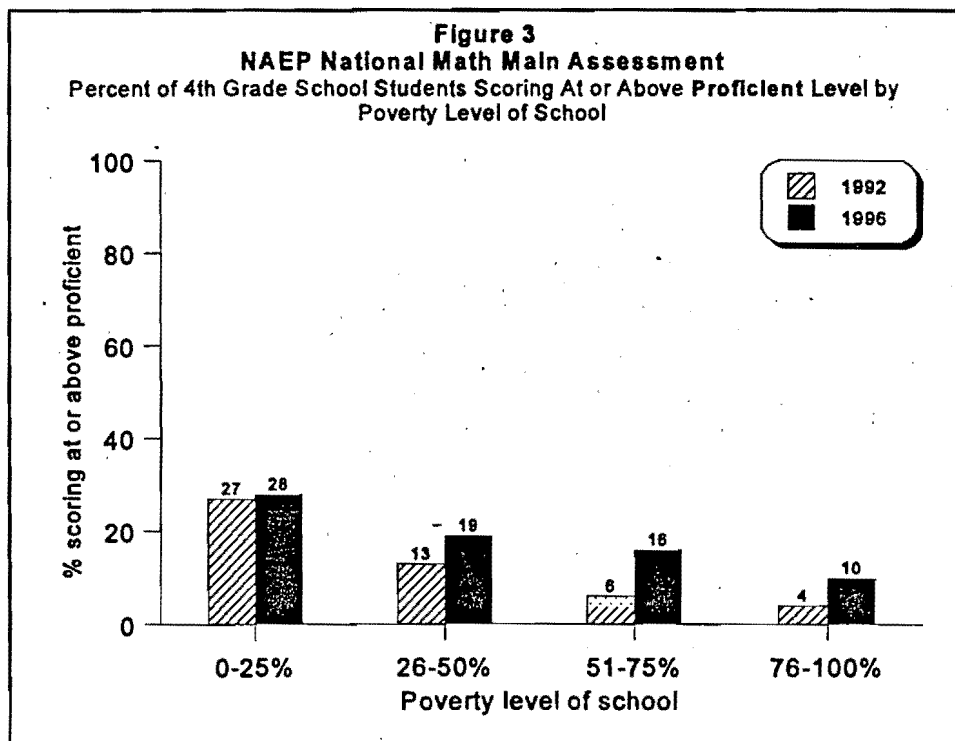
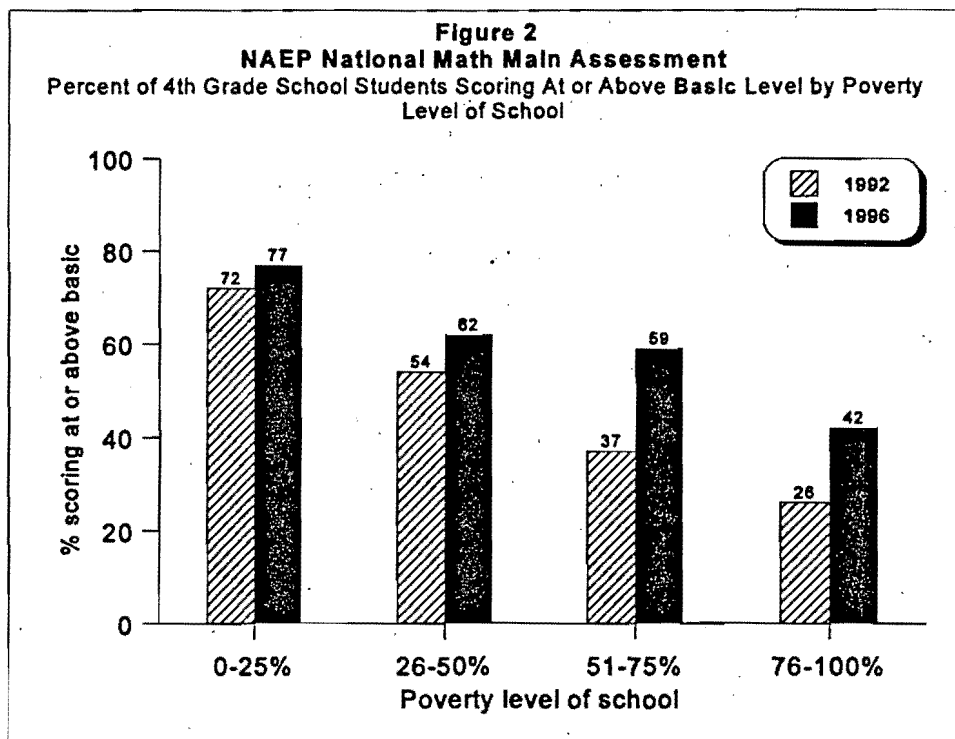
¹² For overall NAEP results in math, see Reese, Clyde; Karen Miller; John Mazzeo; and John Dossey. *NAEP 1996 Mathematics Report Card for the Nation and the States* (Washington, DC: National Center for Education Statistics, February 1997).

¹³ The average scale scores and percentages presented in this report are rounded to the nearest whole point. The change in NAEP math scale scores between 1992 and 1996 is statistically significant.

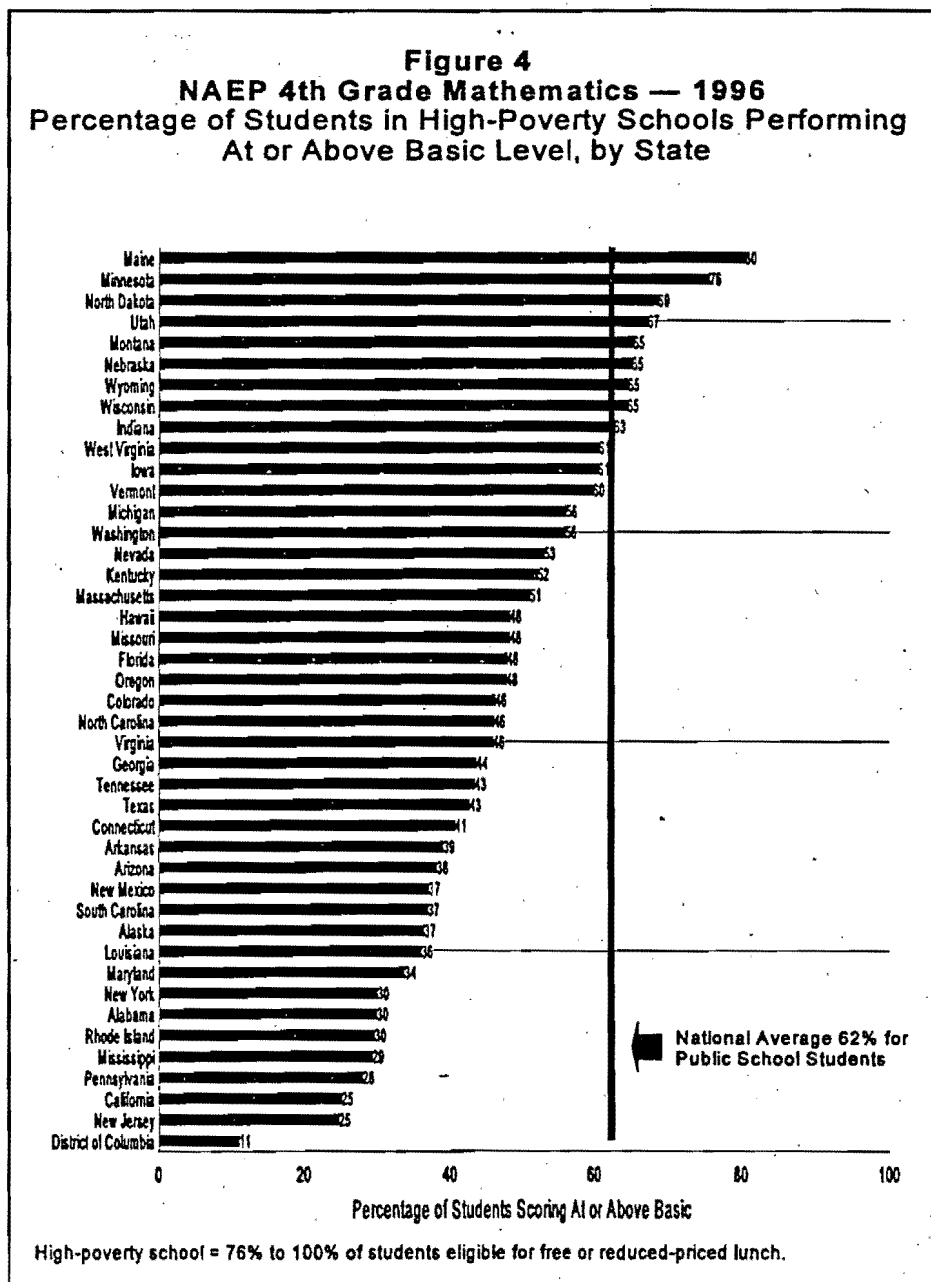


The NAEP national main assessment in math also shows improvements in achievement across all levels of school poverty. Although the gap between student achievement in high- and low-poverty schools remains large, the national assessment shows that largest gains in percentages of students scoring at or above the basic level in math in higher poverty schools. Compared to 1992, when 26 percent of 4th grade students in high-poverty schools scored at or above the basic level, in 1996, 42 percent scored at or above the basic level (Figure 2). As Figure 3 shows, the percentage of students in high-poverty schools scoring at or above the proficient level in math more than doubled between 1992 and 1996, a faster rate of increase than in low-poverty schools.¹⁴

¹⁴ According to NAEP, fourth grade students performing at the *basic* level in math should be able to estimate and use basic facts to perform simple computations with whole numbers, show some understanding of fractions and decimals; and solve simple real world problems in all NAEP content areas. Students at this level should be able to use -- though not always accurately -- four function calculators, rulers, and geometric shapes. Their written responses are often minimal and presented without supporting information. Fourth graders performing at the *proficient* level in math should be able to use whole numbers to estimate, compute, and determine whether results are reasonable. They should have a conceptual understanding of fractions and decimals; be able to solve real world problems in all NAEP content areas; and use four function calculators, rulers, and geometric shapes appropriately. Students performing at the proficient level should employ problem-solving strategies such as identifying and using appropriate information. Their written responses should be organized and presented both with supporting information and explanations of how they were achieved.



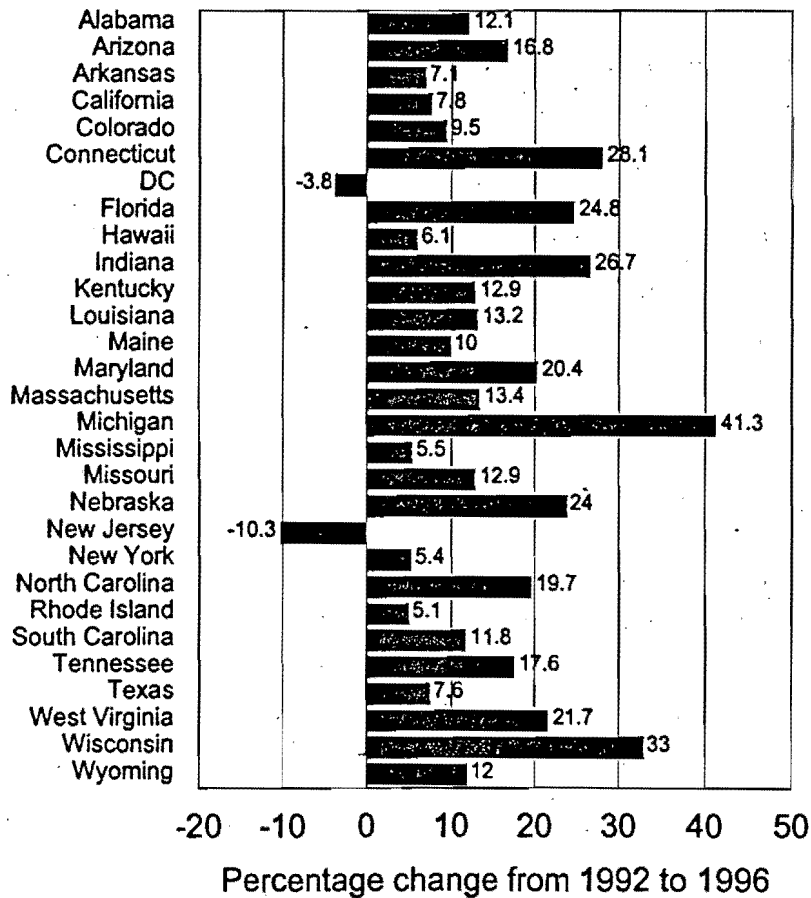
The state main assessment in math (Figure 4) in 1996 also shows encouraging results for high-poverty schools in many states. The graph below illustrates the percentages of students in high-poverty schools scoring at or above the basic level in math across the states. As the figure indicates, there is significant variation in how well students in high-poverty schools perform when we look across the United States. In nine states, achievement in the highest poverty schools meets or exceeds the national average of 62 percent at or above the basic level.¹⁵



¹⁵ Not all states participated in the 1996 NAEP state main assessment. In addition, in the case of Delaware, the sample size was insufficient to make a reliable estimate for student achievement in high-poverty schools in the state. See Appendix for state results.

The percentage of high-poverty schools in each of these states, of course, varies dramatically. In the state with the highest ranked overall achievement of students in high-poverty schools, Maine, only 11 percent of students attend schools in the highest poverty category (with 75 percent or more students receiving free or reduced-price lunch). In the lowest ranked for achievement, Washington, DC, 62 percent of students attend high-poverty schools. Nevertheless, almost every state has registered improvement in math achievement for 4th grade students since 1992, and 27 states have seen significant improvement in math achievement for 4th grade students in high-poverty schools (see Figure 5).

Figure 5
State NAEP Math Performance, Change in the Percentage of 4th
Grade Students in High-Poverty Schools Scoring At or Above
the Basic Level, 1992 to 1996
State

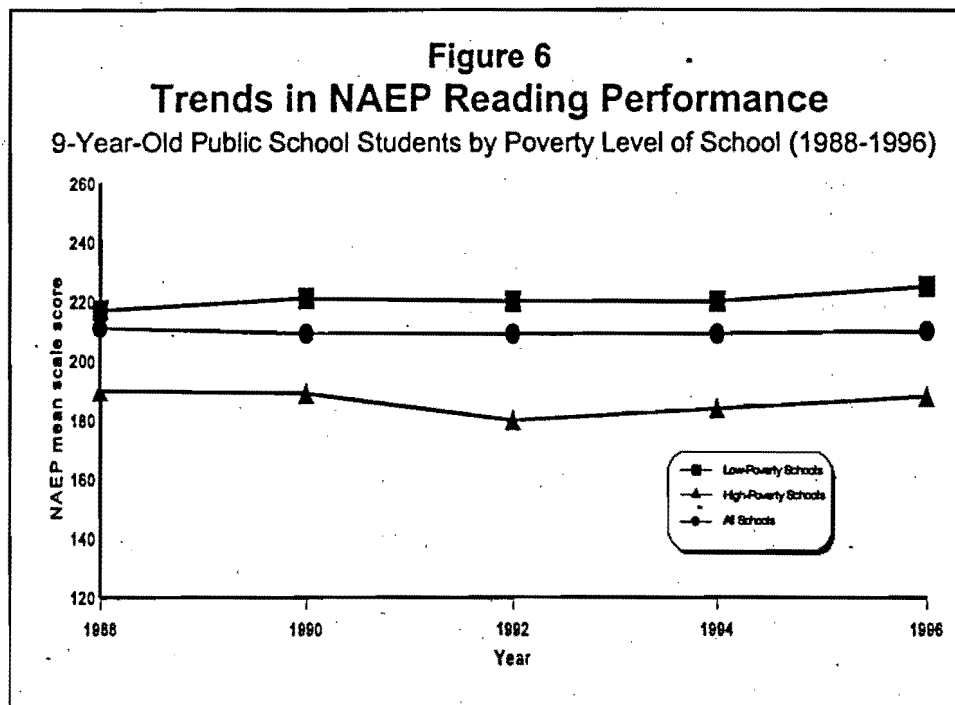


States shown in the above chart had a change from 1992 to 1996 that was statistically significant.

High-poverty school - 76% to 100% of students eligible for free or reduced-price lunch.

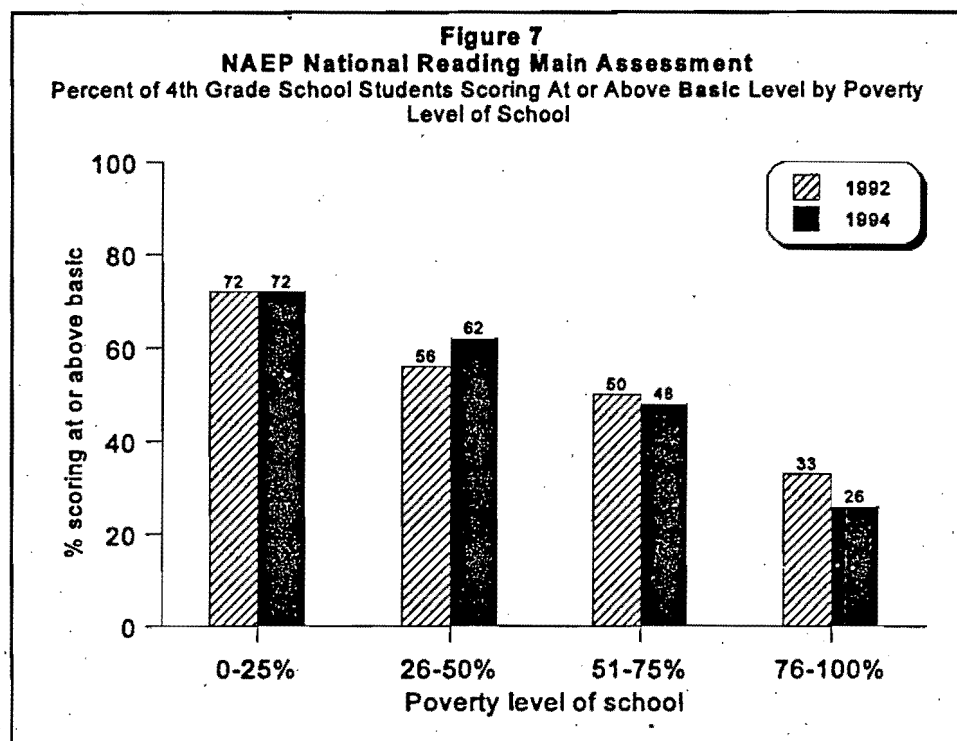
Reading ¹⁶

Student achievement data in reading, particularly for high-poverty schools, show less improvement over time. NAEP scores have been relatively stagnant across all levels of school poverty. Students in high-poverty schools trail their peers in low-poverty schools by a larger margin in reading than in math. In 1996, the gap in the average reading scale score between 9-year-old students in high and low-poverty schools was 38 points. Although this gap was narrower than the 40 point gap in 1992, the achievement gap in reading today remains larger than in 1988, when 27 points separated students on average in high and low-poverty schools. The average scale score for 9-year-old public school students on the 1996 NAEP long-term assessment in reading was 210 points. For low-poverty schools, the average scale score was 225. For high-poverty schools the average score was 188, up from 180 in 1992. (Figure 6)

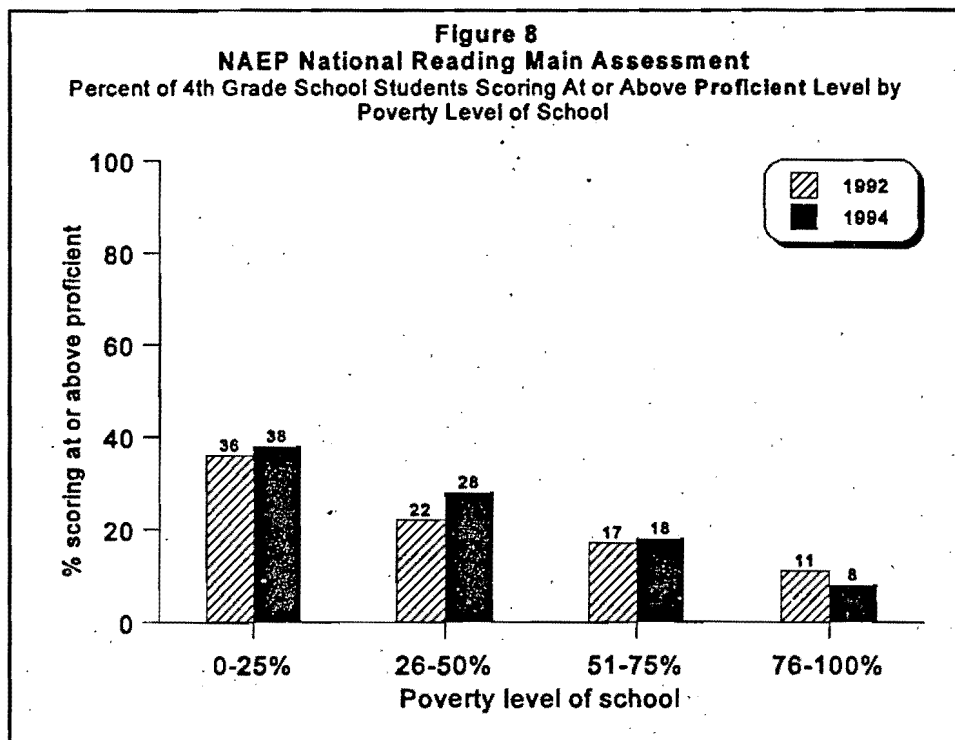


¹⁶ For overall NAEP results in reading, see *NAEP 1994 Reading Report Card from the National Assessment of Educational Progress* (NCES: Washington, DC, March 1996).

The most recent NAEP national main assessment data available in reading are from 1994. The data from this assessment show little change from 1992 in reading achievement across schools overall; however, the percentage of students in schools with more than 50 percent poverty who scored at or above the basic level declined. In 1992, 33 percent of 4th grade students in high-poverty schools scored at or above the basic level; in 1994, 26 percent scored at or above the basic level. (Figure 7) The percentage of 4th grade students achieving at or above the proficient level in reading also showed little change between 1992 and 1994.¹⁷ (Figure 8)



¹⁷ According to NAEP, fourth grade students performing at the *basic* level should be able to demonstrate an understanding of what they read. When reading text appropriate for fourth graders, they should be able to make relatively obvious connections between the text and their own experience and extend the ideas in the text by making simple references. Fourth grade students performing at the *proficient* level should be able to demonstrate an overall understanding of the text, providing inferential as well as literal information. When reading text appropriate to fourth grade, they should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. The connection between the text and what the student infers should be clear.

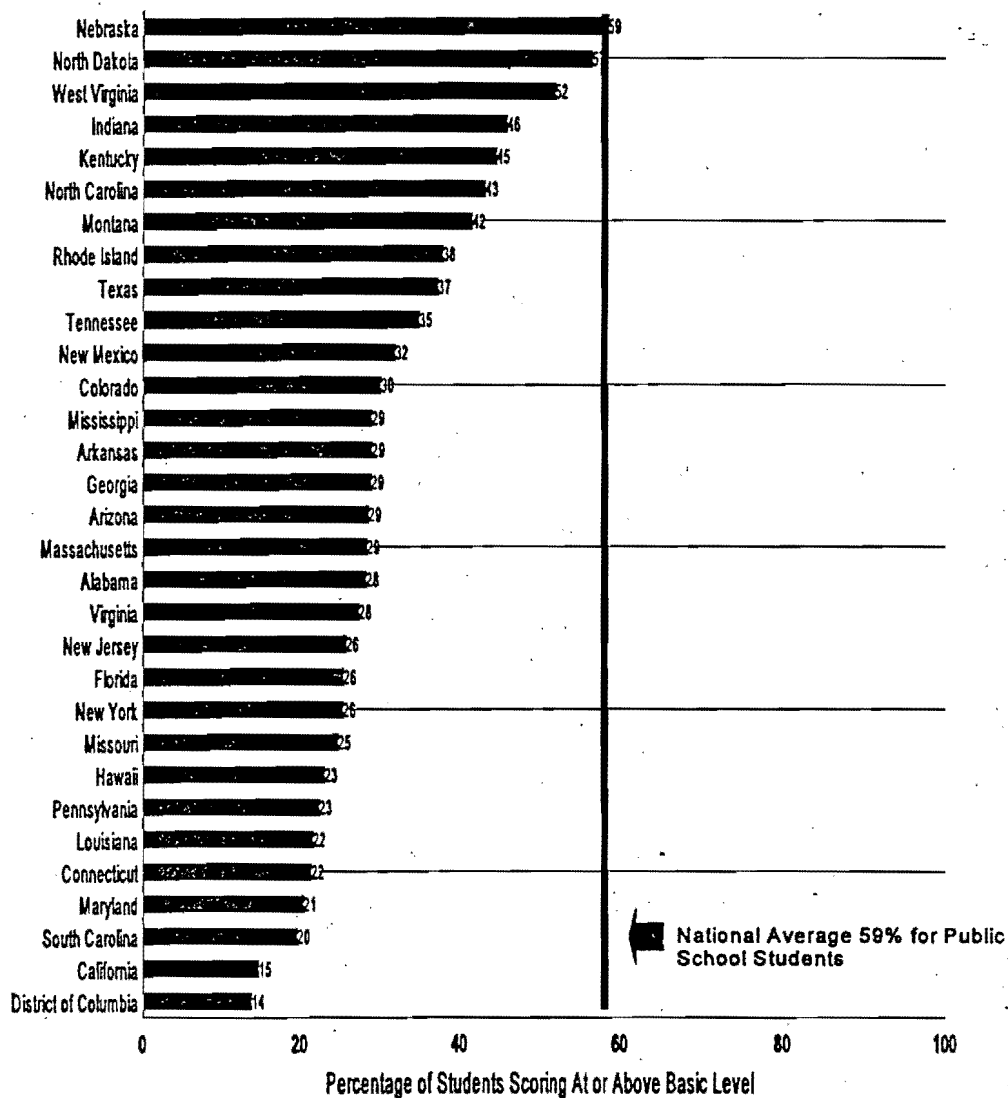


As

Figure 9 demonstrates, comparing the state-by-state NAEP achievement results in reading and math shows that reading achievement is not as strong as math achievement in the nation's highest poverty schools. In math, the average achievement in high-poverty schools matched or exceeded the national average for all public schools in nine states. In reading, the average achievement in high-poverty schools reaches the national average (59 percent at or above basic level) in only one state. Comparing 4th grade reading achievement between 1992 and 1994, only about half the states show increases in the percentage of students in high-poverty schools scoring at the basic level.¹⁸ Only five states demonstrated significant gains in reading for 4th grade students in high-poverty schools. (Figure 10)

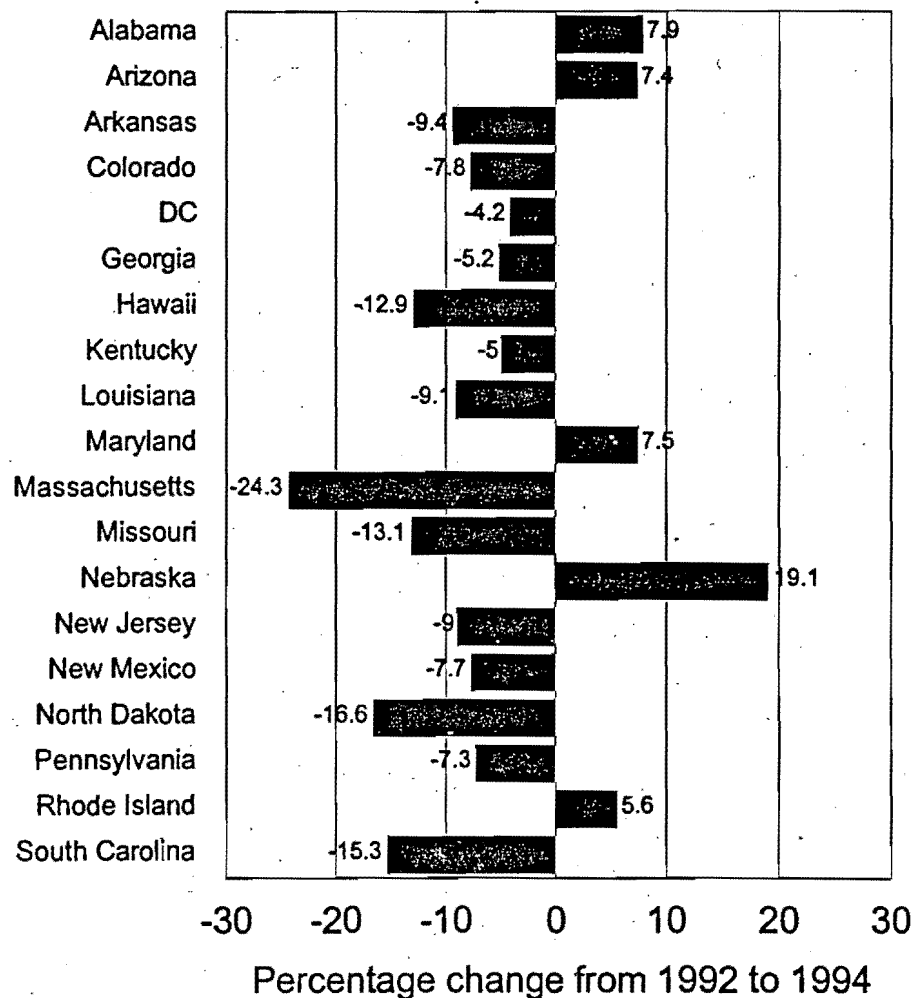
¹⁸ See Appendix. Not all states participated in the 1994 NAEP state main reading assessment. In addition, Delaware, Iowa, Maine, Minnesota, New Hampshire, Utah, Washington, and Wyoming had sample sizes that were insufficient to make reliable estimates about achievement in high-poverty schools.

Figure 9
NAEP 4th Grade Reading — 1994
Percentage of Students in High-Poverty Schools
Performing At or Above Basic Level, by State



High-poverty school = 76% to 100% of students eligible for free or reduced-priced lunch.

Figure 10
State NAEP Reading Performance, Change in the Percentage of 4th
Grade Students in High-Poverty Schools Scoring At or Above the
Basic Level, 1992 to 1994
State



States shown in the above chart had a change from 1992 to 1994 that was statistically significant.
 High-poverty school = 76% to 100% of students eligible for free or reduced-price lunch.

Conclusions

These findings point to the importance of poverty as an important variable in explaining disparities in student achievement. Not only do poverty and other disadvantages associated with it have an impact on individual student learning, but the cumulative effects of concentrated poverty have profound consequences for the performance of entire schools. Although there is some positive news — there have been some gains and improvements in student achievement in the nation's highest poverty schools — the gap in performance between students in high- and low-poverty schools remains a great challenge for educators and policy makers committed to improving teaching and learning so that *all* students can reach high standards of achievement.

Data Sources

The NAEP data presented in this report were analyzed for the Planning and Evaluation Service of the U.S. Department of Education by the Educational Testing Service (ETS), in conjunction with the National Center for Education Statistics. NAEP is a nationally representative and continuing assessment of American students that aims to measure students' progress toward higher achievement. For this report, data were analyzed from three NAEP assessments:

(1) *Long-term trend assessment* — This assessment tracks student achievement of 9-, 13- and 17-year-olds over time by administering the same materials and replicating procedures for each assessment. The assessment is a valuable tool for examining trends in student achievement. The content and procedures of the assessment do not change. Its limitation is that it does not reflect current educational content. This report focuses on the achievement of 9-year-old students in high- and low-poverty public schools on the long-term trend assessment. Performance is reported as an average scale score, which ranges from 0 to 500. The trend data in this report track to 1986 in math (except for 1988, when no data were released on this NAEP assessment) and to 1988 in reading.

(2) *National main assessment* — This assessment presents national and regional results on NAEP. This report examines achievement levels for 4th grade students in 1992 and 1996 in high- and low-poverty schools by levels of proficiency (percent of students scoring at or above the basic and proficient levels). The assessment has different questions and tasks from the long-term assessment, reflecting current educational content and assessment methodology.

(3) *State main assessment* — This assessment reports student achievement in schools across the United States, state by state. In 1996, samples of students from 44 states and the District of Columbia participated in the state math main assessment. The NAEP state reading main assessment was last administered in 1994; a sample of students in 39 states and the District of Columbia participated in the assessment. This report focuses on the percentages of 4th grade students in high- and low-poverty schools in 1992 and 1996

scoring at or above the *Basic* level, defined as partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade, and the *Proficient* level, defined as solid academic performance.¹⁹

Educational Testing Service analyzed NAEP results for each of these assessments by level of school poverty (in quartiles 0-25, 26-50, 51-75, 76-100 percent poverty). The variable used to measure school poverty is the percentage of students in schools who receive free and reduced-price lunch. The item used in this report is a school-level variable taken from a NAEP questionnaire answered by school principals. For the purpose of this report, *high-poverty* schools are those in which more than 75 percent of students receive free and reduced-price lunch. *Low-poverty* schools are those in which 25 percent or fewer students receive free and reduced-price lunch.

A caution about the trend data on achievement and school poverty is needed because NAEP items measuring poverty have varied over time. The charts in this report use "percentage of students receiving free and reduced-price lunches" as a proxy to measure poverty, just as districts typically use this measure to rank order schools for Title I services. Yet, this variable has not been measured in the same way over time. Before 1992, schools were asked two open-ended questions as part of the NAEP school questionnaire that were used to compute a school poverty indicator. Schools were asked how many students were enrolled in the school, and how many were enrolled in the school lunch program. Beginning with, and since 1992, the school questionnaire includes a multiple choice question with eight categories, asking what percentage of students in the school are enrolled in the school lunch program.

¹⁹ U.S. Department of Education, National Center for Education Statistics (NCES).

Appendix
State NAEP Math Performance
Percentage of 4th Grade Students in High-Poverty Schools Scoring At or Above Basic

State	1992	Standard Error	Percent of schools in high-poverty category	1996	Standard Error	Percent of schools in high-poverty category
Alabama	17.9	1.2	19.0	30.0	1.0	34.8
Alaska	--			36.5	1.1	12.4
Arizona	21.4	1.6	12.2	38.2	1.1	30.0
Arkansas	32.0	1.4	11.5	39.1	1.1	25.5
California	17.4	1.3	18.0	25.2	0.8	22.9
Colorado	36.7	1.8	6.2	46.2	1.9	11.6
Connecticut	12.6	1.2	8.9	40.7	2.4	12.1
Delaware	*			*		
District of Columbia	15.0	0.8	54.7	11.2	0.7	62.3
Florida	23.0	1.8	14.7	47.8	1.2	31.3
Georgia	30.8	.7	17.2	43.6	1.5	38.4
Hawaii	42.1	2.8	4.0	48.2	0.9	33.5
Idaho	63.7	2.8	4.8	--		
Illinois	--			--		
Indiana	36.0	1.1	9.4	62.7	2.4	16.7
Iowa	61.4	2.5	5.4	60.5	2.5	23.4
Kansas	--			--		
Kentucky	39.1	1.6	10.3	52.0	1.1	27.9
Louisiana	22.9	1.0	34.0	36.1	0.6	51.3
Maine	70.4	4.9	7.7	80.4	0.8	11.1
Maryland	13.4	0.7	7.8	33.8	0.7	17.5
Massachusetts	37.5	1.7	11.4	50.9	2.8	8.9
Michigan	14.7	1.8	10.3	56.0	2.0	18.2
Minnesota	*			75.7	1.2	25.4
Mississippi	23.9	0.7	48.4	29.4	0.9	43.7
Missouri	35.3	1.0	11.2	48.2	1.3	19.4
Montana	--			65.3	2.0	25.0
Nebraska	41.1	3.0	7.3	65.1	1.2	23.3
Nevada	--			52.9	1.1	26.4
New Hampshire	*			--		
New Jersey	35.1	1.1	15.3	24.8	2.6	13.7
New Mexico	34.4	2.0	21.9	37.1	0.7	39.1
New York	24.7	1.6	19.1	30.1	1.9	26.1
North Carolina	26.3	1.5	7.3	46.0	1.4	18.3
North Dakota	69.1	2.8	9.4	68.7	1.7	36.2
Ohio	25.8	1.1	11.1	--		
Oklahoma	41.2	1.8	11.0	--		
Oregon	--			47.7	1.7	14.1
Pennsylvania	28.9	2.0	12.3	28.1	0.8	15.6
Rhode Island	24.6	1.7	14.2	29.7	1.6	16.7
South Carolina	25.2	0.8	18.0	37.0	1.3	31.7

State	1992	Standard Error	Percent of schools in high-poverty category	1996	Standard Error	Percent of schools in high-poverty category
South Dakota	--			--		
Tennessee	25.8	1.6	15.0	43.4	1.4	26.5
Texas	35.1	1.0	24.0	42.7	2.0	22.1
Utah	*			67.3	0.6	30.4
Vermont	--			59.8	1.8	7.5
Virginia	*			45.9	1.1	17.3
Washington	—			55.9	2.4	10.2
West Virginia	38.9	1.6	15.3	60.6	1.8	29.7
Wisconsin	31.5	2.5	4.6	64.5	1.3	18.5
Wyoming	52.6	0.8	7.7	64.6	2.1	18.4

* Sample size too small to permit reliable estimate

— Non-participating state

State NAEP Reading Performance
Percentage of 4th Grade Students in High-Poverty Schools Scoring At or Above Basic

State	1992	Standard Error	Percent of schools in high-poverty category	1994	Standard Error	Percent of schools in high-poverty category
Alabama	20.5	2.1	19.2	28.4	1.5	19.6
Alaska	—			—		
Arizona	21.3	1.5	12.1	28.7	1.5	25.1
Arkansas	38.5	1.4	10.3	29.1	1.6	13.8
California	12.7	2.1	16.5	14.8	1.5	16.6
Colorado	38.0	2.2	5.9	30.2	0.8	6.3
Connecticut	20.6	3.8	8.9	21.5	1.5	12.9
Delaware	*			*		
District of Columbia	18.1	0.5	55.9	13.9	0.7	61.9
Florida	24.2	2.1	15.3	25.6	1.9	18.1
Georgia	34.2	1.7	18.2	29.0	1.0	22.3
Hawaii	36.1	1.9	4.2	23.2	2.4	6.5
Idaho	66.5	2.8	5.2	—		
Illinois	—			—		
Indiana	49.4	1.5	9.5	45.9	3.6	6.7
Iowa	65.8	0.8	5.5	*		
Kansas	—			—		
Kentucky	49.6	2.2	10.8	44.6	1.2	11.2
Louisiana	30.8	1.5	33.3	21.7	0.8	35.5
Maine	76.4	1.5	6.5	*		
Maryland	13.0	2.5	7.2	20.5	1.2	5.0
Massachusetts	52.8	2.5	11.0	28.5	1.0	8.5
Michigan	18.2	2.0	10.2			
Minnesota	*			*		
Mississippi	28.6	1.3	48.5	29.1	1.4	39.1
Missouri	38.0	1.7	11.3	24.9	1.6	5.6
Montana	—			41.6	2.8	5.2
Nebraska	39.4	2.5	6.6	58.5	5.0	4.0
Nevada	—			—		
New Hampshire	*			*		
New Jersey	34.9	1.5	15.5	25.9	1.1	16.2
New Mexico	39.7	0.9	22.2	32.0	1.2	26.0
New York	29.9	1.6	19.5	25.5	2.4	23.4
North Carolina	43.9	3.4	7.4	43.2	2.9	10.2
North Dakota	73.1	1.8	9.4	56.5	2.4	5.0
Ohio	37.2	1.7	10.7	—		
Oklahoma	43.3	1.2	9.5	—		
Oregon	—			—		
Pennsylvania	29.8	0.8	12.1	22.5	0.7	15.5
Rhode Island	32.3	1.0	13.3	37.9	1.1	15.8
South Carolina	35.0	1.7	17.5	19.7	0.9	20.1

State	1992	Standard Error	Percent of schools in high-poverty category	1994	Standard Error	Percent of schools in high-poverty category
South Dakota	—			—		
Tennessee	36.9	1.7	14.9	35.0	2.5	12.5
Texas	38.0	1	25.1	37.3	2.9	23.6
Utah	*			*		
Vermont	—			—		
Virginia	*			27.5	2.2	9.3
Washington	—			*		
West Virginia	46.8	1.5	14.5	51.8	2.2	12.2
Wisconsin	27.3	5.1	3.9	*		
Wyoming	59.8	3.0	7.6	*		

* Sample size too small to permit reliable estimate

— Non-participating state

PLANNING AND
EVALUATION SERVICE
ANALYSIS AND
HIGHLIGHTS

**School Poverty and Academic Performance: NAEP Achievement
in High-Poverty Schools**

BACKGROUND

This report presents findings from special analyses of student achievement on the National Assessment of Educational Progress prepared for Planning and Evaluation Services by the Educational Testing Services in conjunction with the National Center for Education Statistics.

The purpose of the report is to examine student achievement in the context of school poverty in the United States. Given the Department's long standing concern with the gap in achievement between students in high-poverty schools and their more advantaged peers, this report presents analyses of recent trend, national, and state NAEP assessment results in reading and math for 4th grade and 9-year old students in high- and low-poverty schools.

KEY FINDINGS

- **While the gap in reading and math achievement for 4th grade and 9 year-old students in high- and low-poverty schools is significant, there are some recent signs of improvement.**
 - The gap in average math scores between 9-year-olds in high-poverty schools and low-poverty schools was 22 points in 1996, down from a 28-point gap in 1992 and a 24-point gap in 1994. The achievement gap in reading between students in high- and low-poverty schools is substantially larger. The average difference in reading achievement between 9 year-old students in high and low-poverty schools was 38 points in 1996, although down from a 40 point gap in 1994.
- **In math, there has been an upward trend in achievement for 4th grade and 9 year-old students on NAEP since 1992.**
 - Data from the 1996 NAEP long-term trend assessment show a significant rise in the scores of 9-year-olds across all levels of school poverty since 1992. The percentage of 4th grade students in high-poverty schools scoring at least at the basic level on the NAEP national math main assessment was 42 percent in 1996, up from 26 percent in 1992. In 27 states there was a significant increase in the percentage of 4th grade students in high-poverty schools scoring at or above the basic level in math between 1992 and 1996.

- **Reading presents a more complicated picture. The gap in reading performance between students in high- and low-poverty schools is dramatically higher than the gap in math and NAEP scores have been stagnant across all levels of school poverty.**
 - Although data from the NAEP long-term trend assessment show an upward turn in the average reading scores of 9-year-olds between 1992 and 1996, results from the NAEP national assessment show a decrease in the percentage of 4th grade students in high-poverty schools scoring at the basic level in reading — from 33 percent in 1992 to 26 percent in 1994. (The main NAEP assessment in reading was not administered in 1996. Results from the 1998 NAEP main reading assessment are expected to be released in January, 1999.) State NAEP results reveal that 5 states experienced a significant increase in the percentage of students in high-poverty schools scoring at or above the basic level in reading between 1992 and 1994.

Copies of this Planning and Evaluation Service report are available by contacting the U.S. Department of Education at 1-800-USA-LEARN.

DRAFT

School Poverty and Academic Performance:

NAEP Achievement in High-Poverty Schools

A Special Evaluation Report for the National Assessment of Title I

**U.S. Department of Education
Office of the Under Secretary
Planning and Evaluation Service
Elementary and Secondary Division**

August 1998

Summary and Major Findings

Before we can realize a system of public education in the United States where *all* children can reach high standards, we must face the challenges of poverty, particularly concentrated poverty, and its effects on learning. Student achievement data reveal a large and longstanding gap in academic performance between students in high- and low-poverty schools at all grade levels. Children in high-poverty schools tend to begin school academically behind their peers in low-poverty schools and often are unable to close this gap as they progress through school.¹ Data from the long-term trend assessment of the National Assessment of Educational Progress (NAEP) show that in high-poverty schools (where 75 percent or more of the students come from low-income families) achievement is, on average, two or three grade levels behind that in low-poverty schools (where fewer than 25 percent of students are from low-income families).

Reducing this achievement gap is a great concern of the U.S. Department of Education. Although the federal role in education is limited — accounting for about 7 percent of elementary and secondary education spending² — federal resources are focused primarily on helping to provide high-quality education for students who live in poverty, are at risk of school failure, or have special needs.

According to the 1996 NAEP results, there continues to be a large gap in academic performance between students in high- and low-poverty schools. However the data show some recent signs of improvement for 9-year-olds and 4th grade students:

- ▶ Long-term trend data show that the achievement gap is narrowing. The gap in average math scores between 9-year-olds in high-poverty schools and low-poverty schools was 22 points in 1996, down from a 28 point gap in 1992 and a 24 point gap in 1994. The achievement gap in reading between students in high- and low-poverty schools is substantially larger. The gap in average reading scores between 9-year-olds in high- and low-poverty schools was 38 points in 1996, although down from a 40 point gap in 1994.³
- ▶ In math an upward trend in achievement is evident. Data from the 1996 NAEP long-term trend assessment show a significant rise in the scores of 9 year-olds across all levels of school poverty since 1992. The percentage of 4th grade students in high-poverty schools achieving at or above the basic level in math on NAEP increased from 26 percent in 1992 to 42 percent in 1996. In 27 states there was a significant increase in the percentage of

¹ U.S. Department of Education, Planning and Evaluation Service. *Prospects: Student Outcomes Final Report* (April 1997).

² U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey (1993-94).

³ Scores are rounded to the nearest whole number. Ten points in NAEP scores is approximately equivalent to one grade level.

students in high-poverty schools scoring at or above the basic level in math between 1992 and 1996.

- Evidence of overall progress in reading is also provided, although the most recent available NAEP main and state assessment data are from 1994. (The main NAEP assessment in reading was not administered in 1996. Results from the 1998 NAEP main reading assessment are expected to be released in January, 1999.) The gap in performance between students in high- and low-poverty schools in reading is dramatically higher than the gap in math performance. While long-term trend data show an upward turn in the average reading scores of 9 year-olds in high-poverty schools between 1992 and 1996, data from the 1994 NAEP national assessment in reading show a decline in the percentage of 4th grade students in high-poverty schools scoring at or above the basic level -- from 33 percent in 1992 to 26 percent in 1994. State NAEP results reveal that 5 states experienced a significant increase in the percentage of students in high-poverty schools scoring at or above the basic level in reading between 1992 and 1994.

Introduction and Background

Poverty is a significant problem for many of our nation's children. In 1995, the U.S. Bureau of the Census estimated that 20 percent of American children under the age of 18 lived in poverty, an increase of 5% since 1970. Moreover, both black and Hispanic children — at 42 and 39 percent poverty, respectively — are more than twice as likely as white children to be poor.⁴ Particularly in the urban core, communities are faced with dense concentrations of poverty that pose formidable challenges for schools. One-third of the children in America's cities live in poverty.⁵ In cities such as Detroit, New Orleans, Miami, Atlanta, and Cleveland, more than 40 percent of the children are poor. This poverty rate is twice the national average and twice the average poverty rate of the states in which the cities are located.

America's public schools must face the challenges of educating poor children. Overall, in 34 percent of U.S. public schools, half or more of the student population come from low-income families.⁶ In cities such as Baltimore, for example, the concentration of poor children in the city's schools is great. In over 80 percent of schools more than half the students fall below

⁴ Current Population Reports, *Poverty in the United States* (Washington, DC: U.S. Bureau of the Census, 1996).

⁵ U.S. Bureau of the Census Current Population Reports, cited in Lippman, Laura. *Urban Schools: The Challenge of Location and Poverty* (Washington, DC: National Center for Education Statistics, 1996).

⁶ U.S. Department of Education, *Fast Response School Survey: School Reform 1997-98*. Students from low-income families are defined as those whose children qualify for free and reduced-price school lunch.

the poverty line; in more than 50 percent of the city's schools, more than three quarters of the students come from low-income families.⁷

These statistics translate into severe educational disadvantage for many children. The effects of poverty on learning are profound. On the individual level, poverty has numerous correlates that inhibit learning. Children who live in poverty are more likely than other children to experience family disruption, abuse, or neglect. Poor children are more likely than their non-poor peers to grow up unhealthy and to become victims of crime.⁸ Low-income students are less likely to take challenging courses and more likely to drop out of school. Parents in economically disadvantaged families tend to have limited education and involvement in their children's learning. Teachers of low income students are less likely to have high expectations for academic achievement.

But the effects of poverty on student achievement are not isolated only to individual students who are poor. Research shows that the achievement levels of both poor and non-poor students decline as the poverty levels of schools increase. Low-income students in low-poverty schools have higher achievement than low-income students in high-poverty schools.⁹ Thus, the degree to which students are at risk of educational failure depends not only on their own situation; there is a significant poverty effect on all students in higher poverty schools.

In recognition of the strong relationship between poverty and student performance, the U.S. Department of Education, through Title I of the Elementary and Secondary Education Act (ESEA), provides approximately \$7.5 billion a year in financial assistance to improve learning for students, particularly those who are at risk of educational failure, in economically disadvantaged communities. Part of the purpose of the 1994 reauthorization of ESEA was to better target resources to address the needs of poor children attending schools with high concentrations of poverty. For example, Title I requires districts to rank and fund schools according to poverty levels, thereby ensuring that, within districts, resources are distributed to schools where needs are greatest. Because poverty affects the entire school environment, high-poverty schools are encouraged to adopt schoolwide programs to improve teaching and learning for all children.¹⁰

⁷ Maryland State Department of Education (1996).

⁸ Education Week, *Quality Counts '98* (Washington, DC: Author, January 1998).

⁹ U.S. Department of Education, *Prospects* (1997).

¹⁰ Some important qualifications must be noted in making policy interpretations about the impact of Title I based on the data in this report. First, the Department distributes Title I grants according to a congressionally mandated formula that reaches almost all districts and about 60 percent of schools — not only those with — particularly high levels of concentrated poverty. According to 1996 student-level NAEP data, 22 percent of 4th graders in U.S. public schools participate in Title I programs. Second, some of the NAEP results presented here pre-date the implementation of the reauthorized Title I. Although the NAEP national and state main assessments in

This report focuses on recent trends in student achievement in math and reading for elementary school students in high-poverty schools.¹¹ The data illustrate that poverty has a significant impact on student achievement. The data also reveal that there have been some improvements in achievement for 9-year-old and 4th grade students and some narrowing of the gap between student achievement in high- and low-poverty schools, particularly in math. But the data also point to reading as a particular challenge in high-poverty schools, where children lag well behind their peers in lower poverty schools, and students may not have the strong home support for literacy that may be critical to reading achievement.

Findings

Mathematics¹²

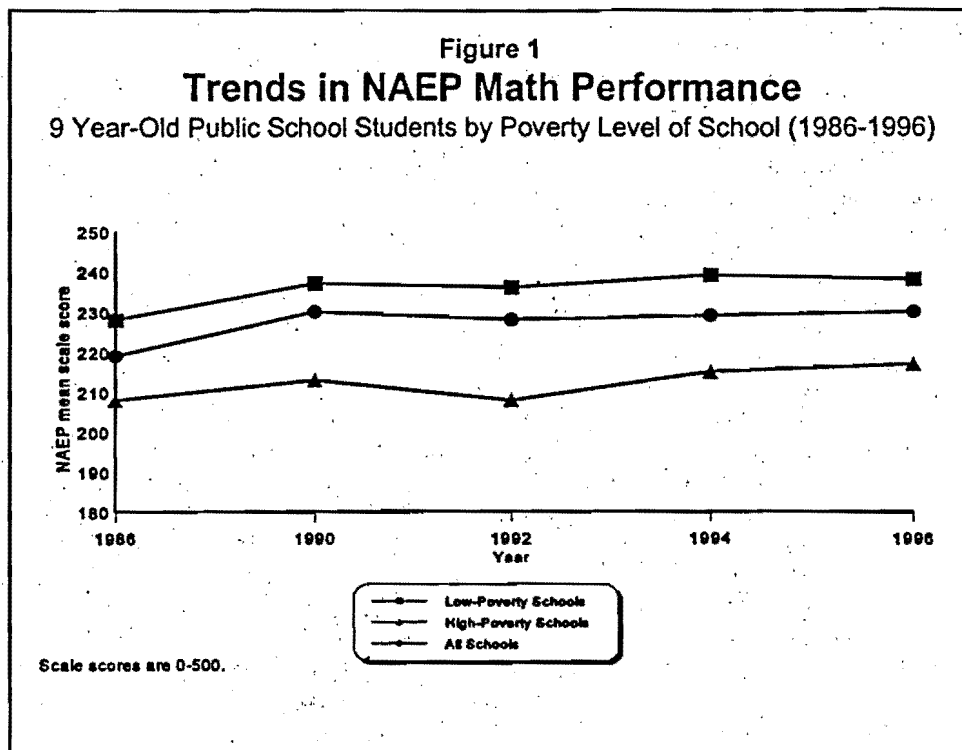
The NAEP long-term trend assessment shows generally upward trends in math achievement for 9-year-olds across all school poverty levels. The average scale score for 9 year-old public school students in math in 1996 was 231; in low-poverty schools, the average score was 238, and in high-poverty schools, the average scale score was 217. For high-poverty schools, this average scale score is a significant improvement over the average score in 1992, roughly equivalent to an increase of one grade level.¹³ Since peaking at 28 points in 1992, the achievement gap in math between students in high- and low-poverty schools has narrowed to 22 points in 1996; however the achievement gap in 1996 is approximately the same as it was in 1986. (Figure 1)

math were administered in 1996, the latest results in reading are from 1994. The 1998 NAEP results for both math and reading will be released in early 1999.

¹¹ This report presents NAEP data for 9 year-olds and 4th grade students. Data for 13- and 17-year-olds as well as 8th grade students are less reliable because of the large amount of missing and inaccurate data on school poverty (percentages of students receiving free and reduced-price lunch) as students reach middle and high school. See the last section of this report "Data Sources" for a more detailed description of the analysis.

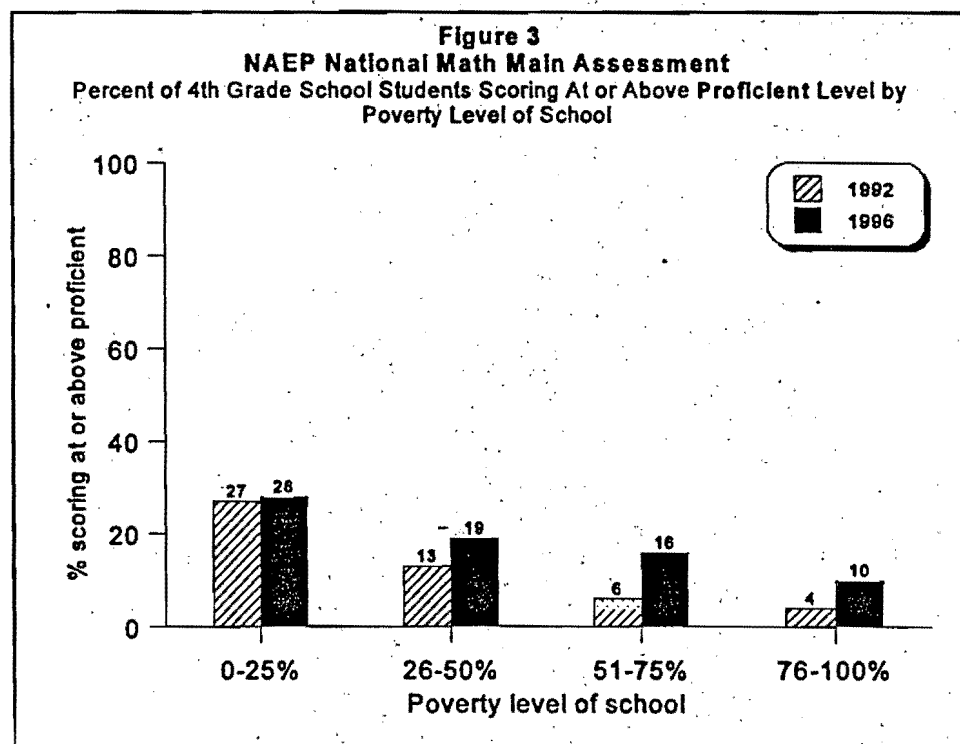
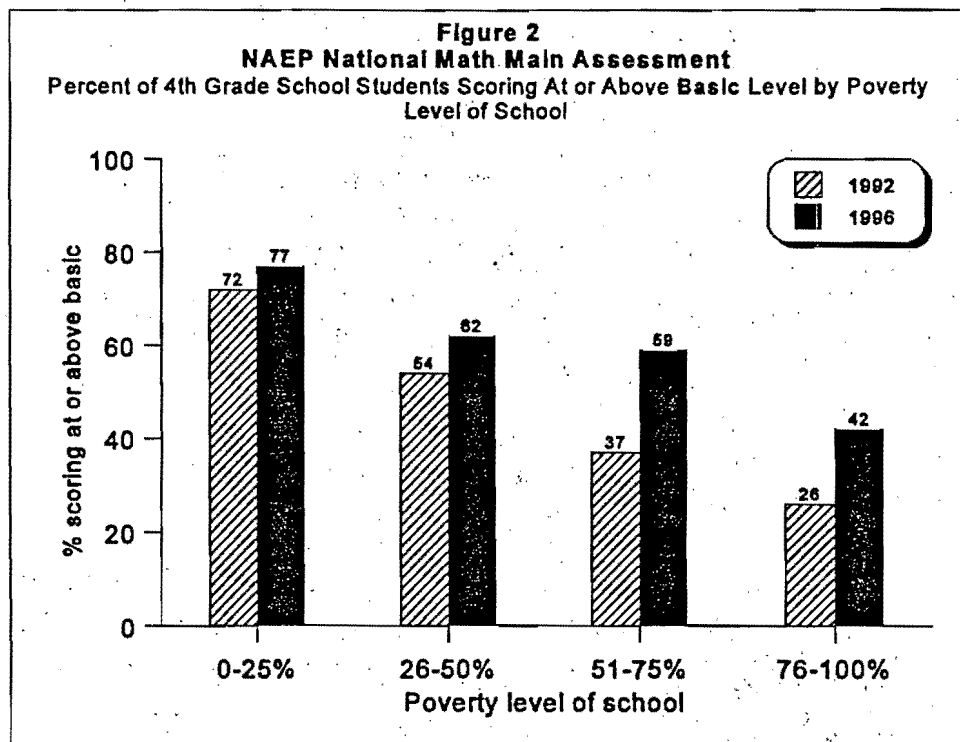
¹² For overall NAEP results in math, see Reese, Clyde; Karen Miller; John Mazzeo; and John Dossey. *NAEP 1996 Mathematics Report Card for the Nation and the States* (Washington, DC: National Center for Education Statistics, February 1997).

¹³ The average scale scores and percentages presented in this report are rounded to the nearest whole point. The change in NAEP math scale scores between 1992 and 1996 is statistically significant.

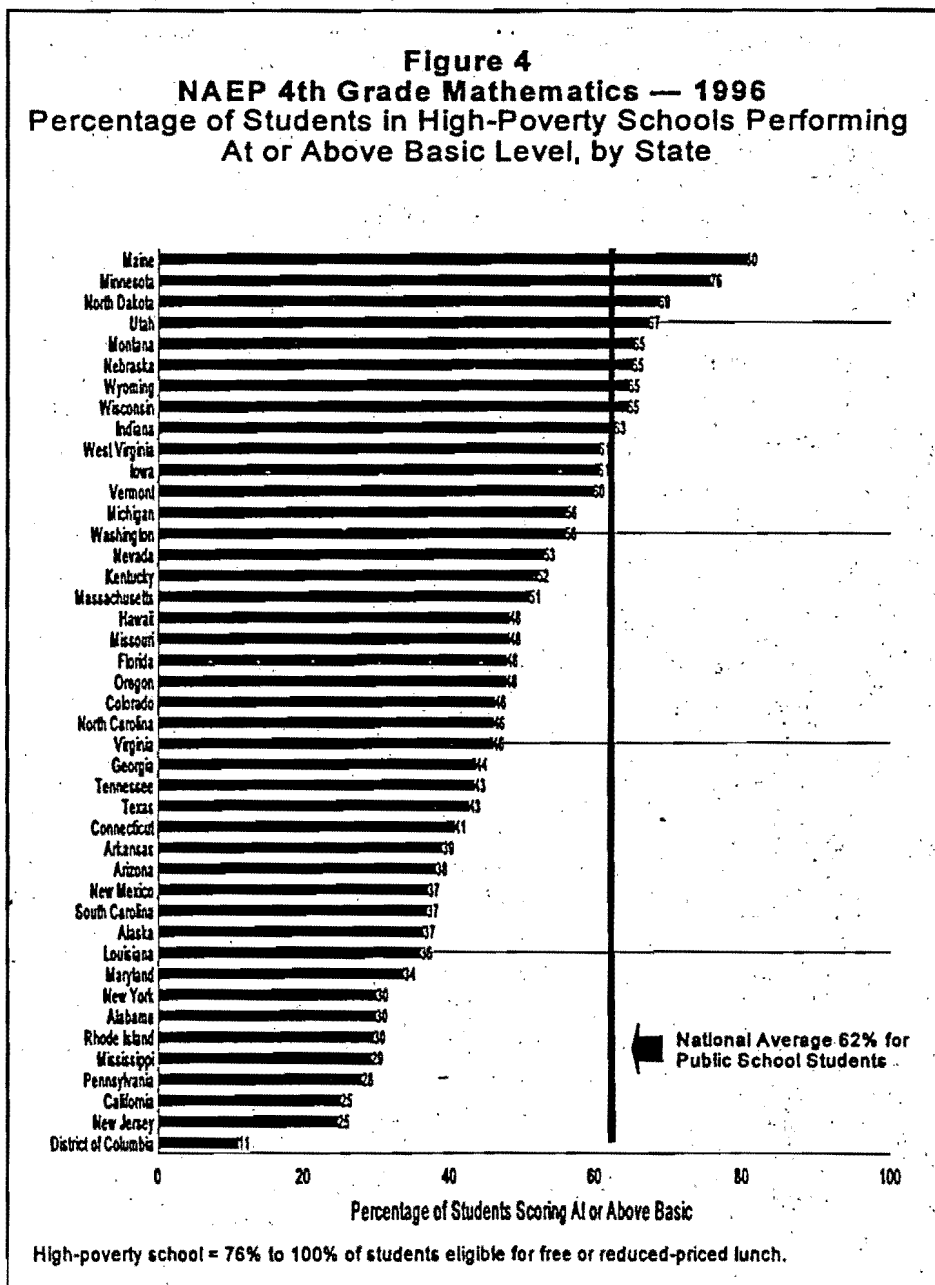


The NAEP national main assessment in math also shows improvements in achievement across all levels of school poverty. Although the gap between student achievement in high- and low-poverty schools remains large, the national assessment shows that largest gains in percentages of students scoring at or above the basic level in math in higher poverty schools. Compared to 1992, when 26 percent of 4th grade students in high-poverty schools scored at or above the basic level, in 1996, 42 percent scored at or above the basic level (Figure 2). As Figure 3 shows, the percentage of students in high-poverty schools scoring at or above the proficient level in math more than doubled between 1992 and 1996, a faster rate of increase than in low-poverty schools.¹⁴

¹⁴ According to NAEP, fourth grade students performing at the *basic* level in math should be able to estimate and use basic facts to perform simple computations with whole numbers, show some understanding of fractions and decimals; and solve simple real world problems in all NAEP content areas. Students at this level should be able to use — though not always accurately — four function calculators, rulers, and geometric shapes. Their written responses are often minimal and presented without supporting information. Fourth graders performing at the *proficient* level in math should be able to use whole numbers to estimate, compute, and determine whether results are reasonable. They should have a conceptual understanding of fractions and decimals; be able to solve real world problems in all NAEP content areas; and use four function calculators, rulers, and geometric shapes appropriately. Students performing at the proficient level should employ problem-solving strategies such as identifying and using appropriate information. Their written responses should be organized and presented both with supporting information and explanations of how they were achieved.



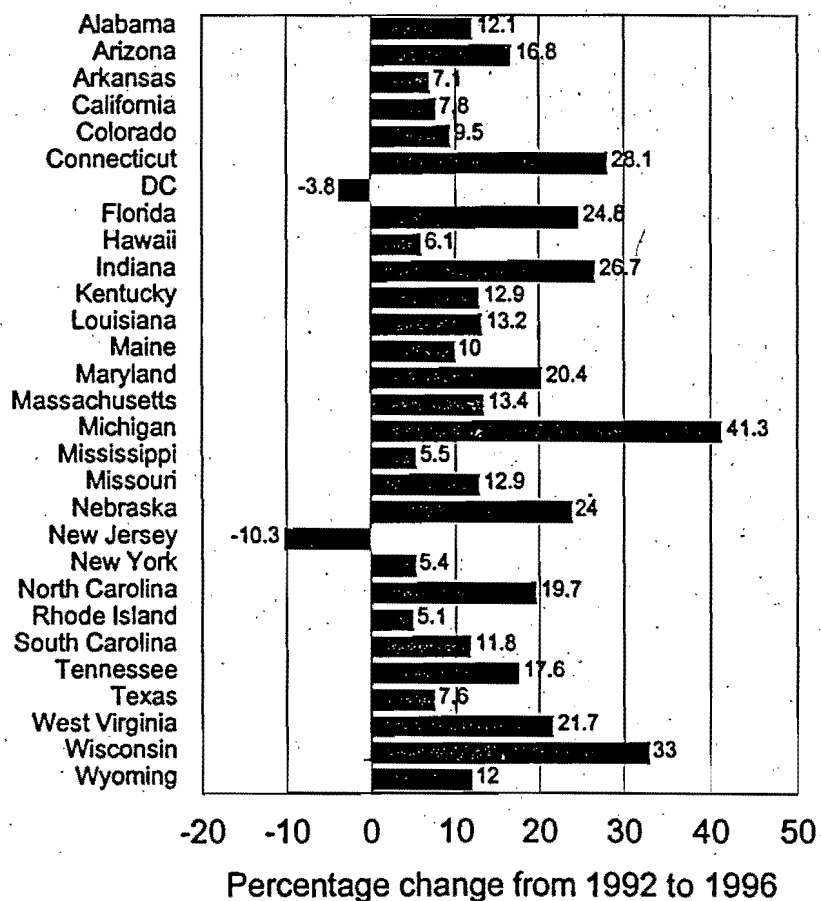
The state main assessment in math (Figure 4) in 1996 also shows encouraging results for high-poverty schools in many states. The graph below illustrates the percentages of students in high-poverty schools scoring at or above the basic level in math across the states. As the figure indicates, there is significant variation in how well students in high-poverty schools perform when we look across the United States. In nine states, achievement in the highest poverty schools meets or exceeds the national average of 62 percent at or above the basic level.¹⁵



¹⁵ Not all states participated in the 1996 NAEP state main assessment. In addition, in the case of Delaware, the sample size was insufficient to make a reliable estimate for student achievement in high-poverty schools in the state. See Appendix for state results.

The percentage of high-poverty schools in each of these states, of course, varies dramatically. In the state with the highest ranked overall achievement of students in high-poverty schools, Maine, only 11 percent of students attend schools in the highest poverty category (with 75 percent or more students receiving free or reduced-price lunch). In the lowest ranked for achievement, Washington, DC, 62 percent of students attend high-poverty schools. Nevertheless, almost every state has registered improvement in math achievement for 4th grade students since 1992, and 27 states have seen significant improvement in math achievement for 4th grade students in high-poverty schools (see Figure 5).

Figure 5
State NAEP Math Performance, Change in the Percentage of 4th Grade Students in High-Poverty Schools Scoring At or Above the Basic Level, 1992 to 1996

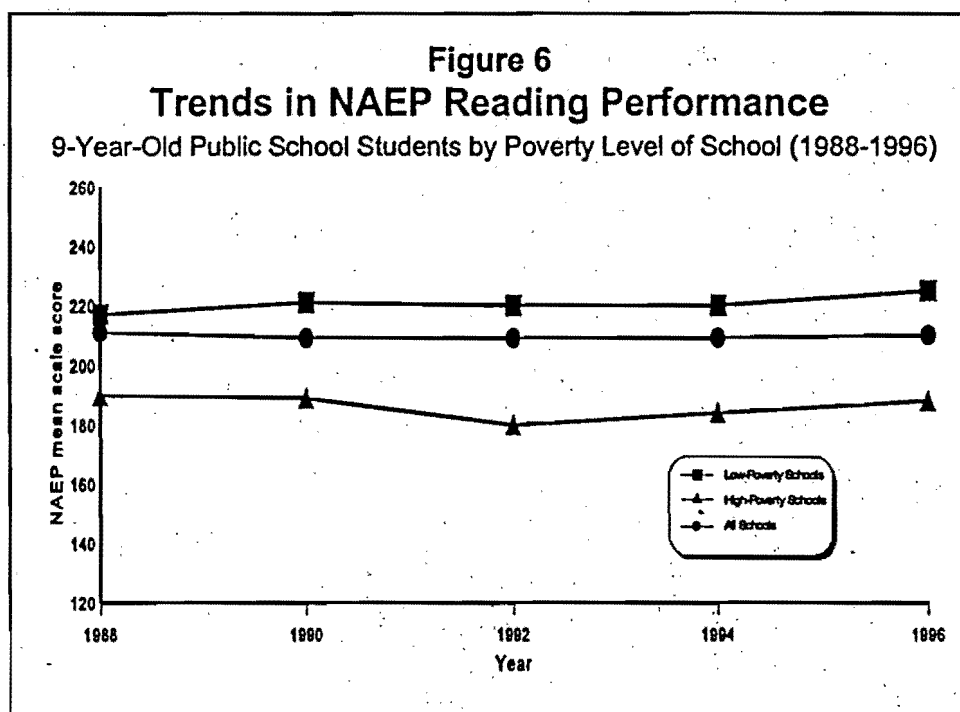


States shown in the above chart had a change from 1992 to 1996 that was statistically significant.

High-poverty school - 76% to 100% of students eligible for free or reduced-price lunch.

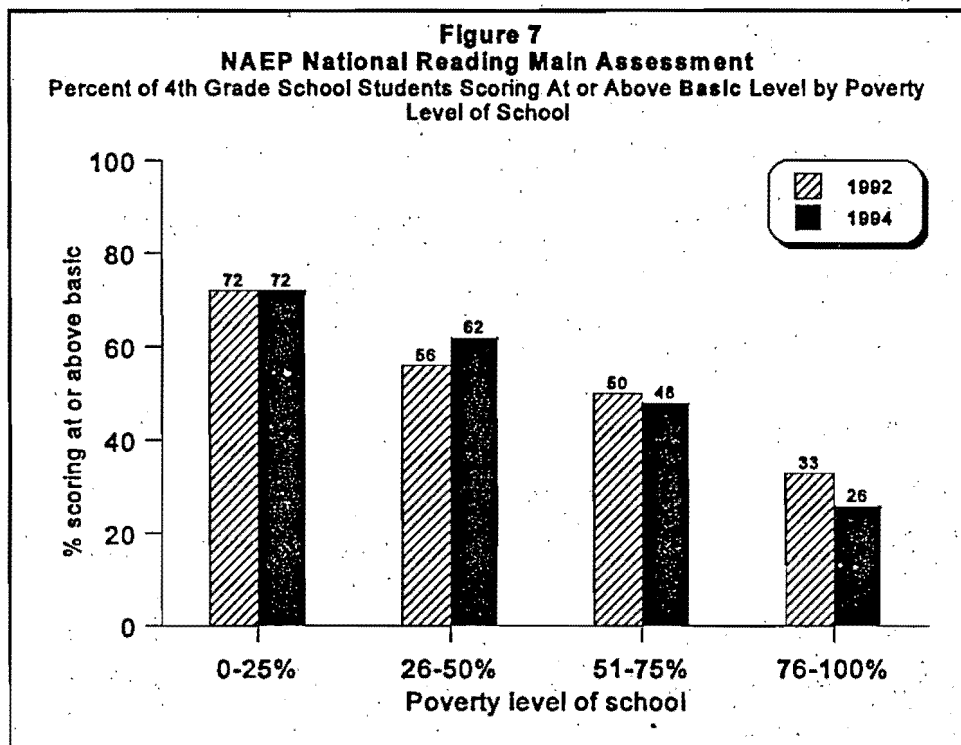
Reading ¹⁶

Student achievement data in reading, particularly for high-poverty schools, show less improvement over time. NAEP scores have been relatively stagnant across all levels of school poverty. Students in high-poverty schools trail their peers in low-poverty schools by a larger margin in reading than in math. In 1996, the gap in the average reading scale score between 9-year-old students in high and low-poverty schools was 38 points. Although this gap was narrower than the 40 point gap in 1992, the achievement gap in reading today remains larger than in 1988, when 27 points separated students on average in high and low-poverty schools. The average scale score for 9-year-old public school students on the 1996 NAEP long-term assessment in reading was 210 points. For low-poverty schools, the average scale score was 225. For high-poverty schools the average score was 188, up from 180 in 1992. (Figure 6)

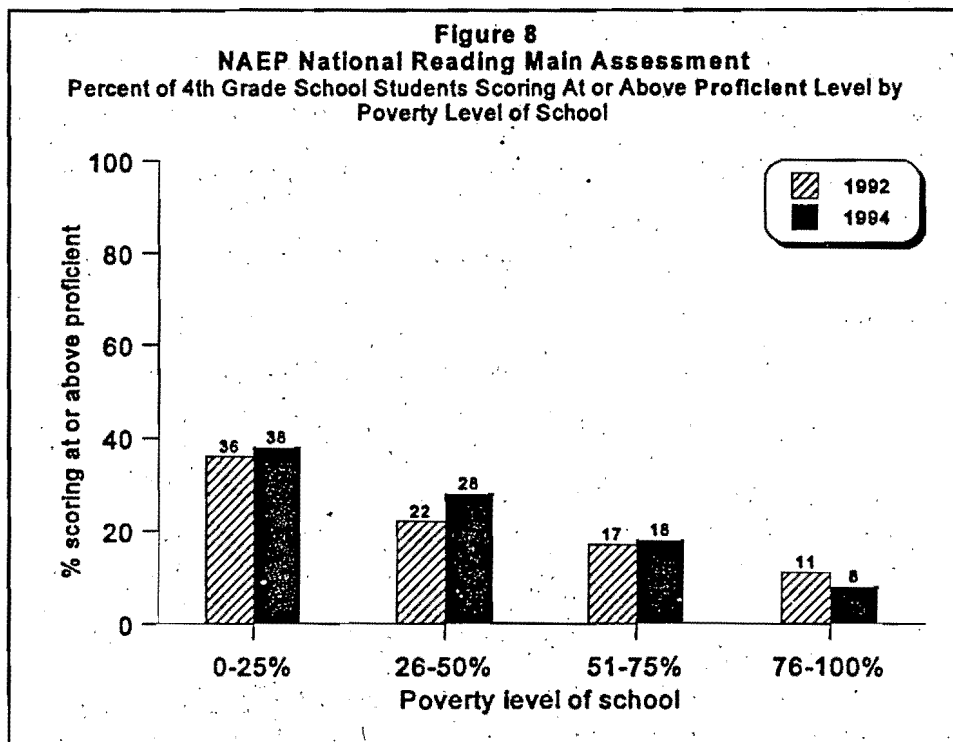


¹⁶ For overall NAEP results in reading, see *NAEP 1994 Reading Report Card from the National Assessment of Educational Progress* (NCES: Washington, DC, March 1996).

The most recent NAEP national main assessment data available in reading are from 1994. The data from this assessment show little change from 1992 in reading achievement across schools overall; however, the percentage of students in schools with more than 50 percent poverty who scored at or above the basic level declined. In 1992, 33 percent of 4th grade students in high-poverty schools scored at or above the basic level; in 1994, 26 percent scored at or above the basic level. (Figure 7) The percentage of 4th grade students achieving at or above the proficient level in reading also showed little change between 1992 and 1994.¹⁷ (Figure 8)



¹⁷ According to NAEP, fourth grade students performing at the *basic* level should be able to demonstrate an understanding of what they read. When reading text appropriate for fourth graders, they should be able to make relatively obvious connections between the text and their own experience and extend the ideas in the text by making simple references. Fourth grade students performing at the *proficient* level should be able to demonstrate an overall understanding of the text, providing inferential as well as literal information. When reading text appropriate to fourth grade, they should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. The connection between the text and what the student infers should be clear.

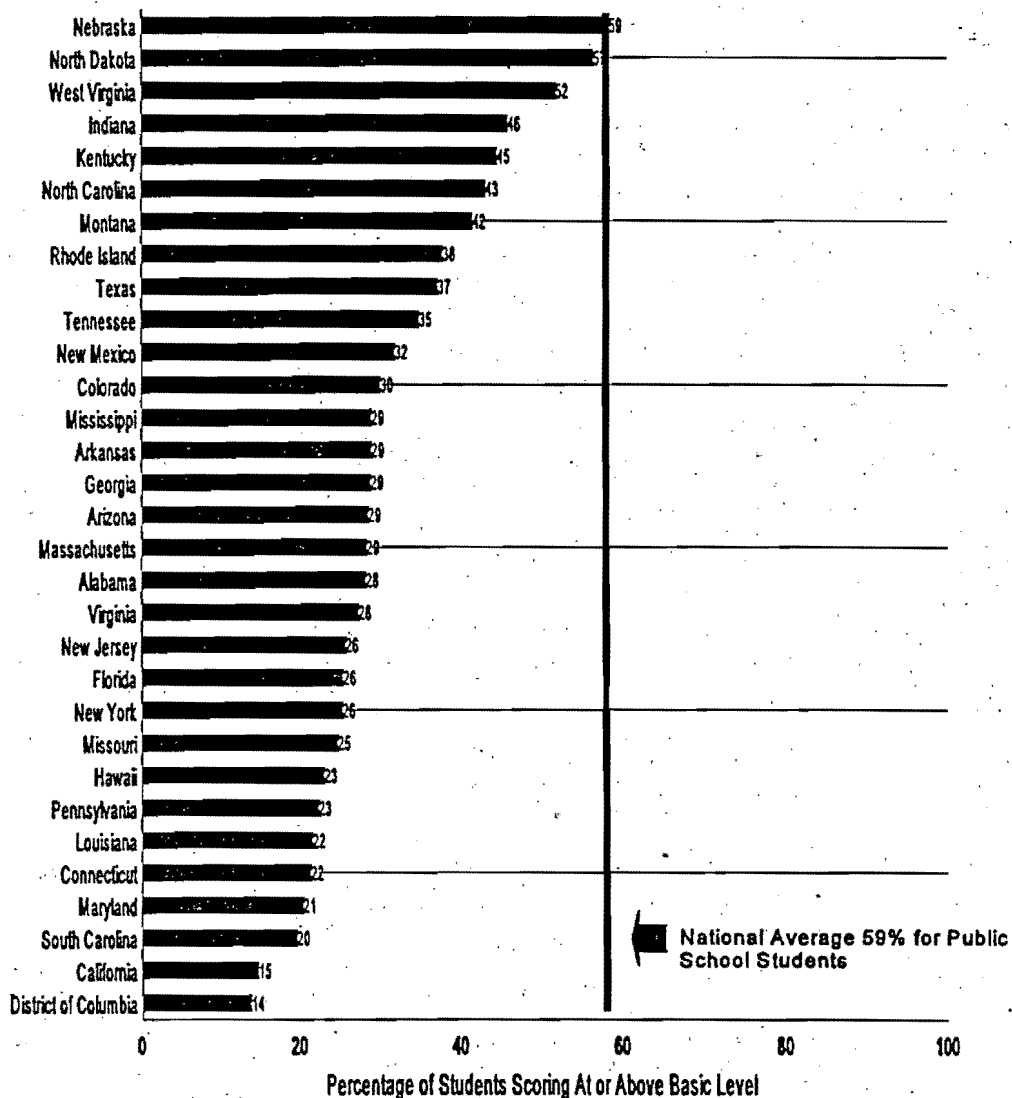


As

Figure 9 demonstrates, comparing the state-by-state NAEP achievement results in reading and math shows that reading achievement is not as strong as math achievement in the nation's highest poverty schools. In math, the average achievement in high-poverty schools matched or exceeded the national average for all public schools in nine states. In reading, the average achievement in high-poverty schools reaches the national average (59 percent at or above basic level) in only one state. Comparing 4th grade reading achievement between 1992 and 1994, only about half the states show increases in the percentage of students in high-poverty schools scoring at the basic level.¹⁸ Only five states demonstrated significant gains in reading for 4th grade students in high-poverty schools. (Figure 10)

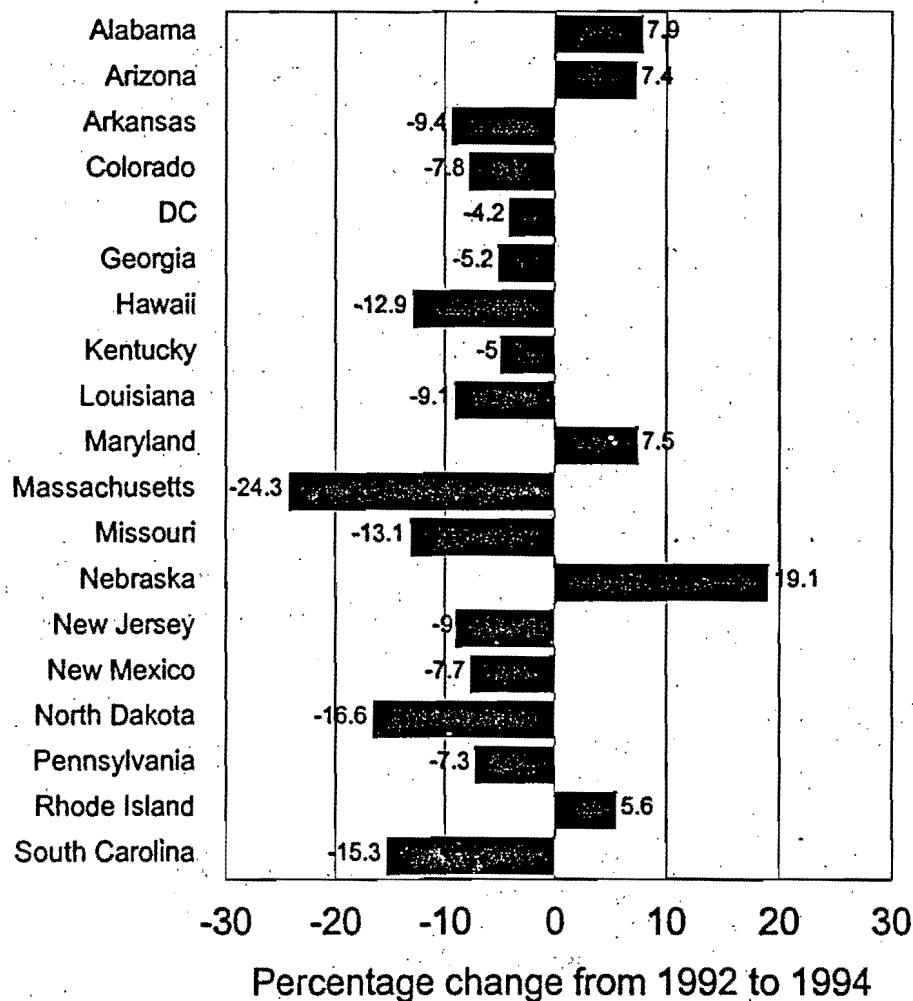
¹⁸ See Appendix. Not all states participated in the 1994 NAEP state main reading assessment. In addition, Delaware, Iowa, Maine, Minnesota, New Hampshire, Utah, Washington, and Wyoming had sample sizes that were insufficient to make reliable estimates about achievement in high-poverty schools.

Figure 9
NAEP 4th Grade Reading — 1994
Percentage of Students in High-Poverty Schools
Performing At or Above Basic Level, by State



High-poverty school = 76% to 100% of students eligible for free or reduced-priced lunch.

Figure 10
State NAEP Reading Performance, Change in the Percentage of 4th
Grade Students in High-Poverty Schools Scoring At or Above the
Basic Level, 1992 to 1994
State



States shown in the above chart had a change from 1992 to 1994 that was statistically significant.

High-poverty school = 76% to 100% of students eligible for free or reduced-price lunch.

Conclusions

These findings point to the importance of poverty as an important variable in explaining disparities in student achievement. Not only do poverty and other disadvantages associated with it have an impact on individual student learning, but the cumulative effects of concentrated poverty have profound consequences for the performance of entire schools. Although there is some positive news — there have been some gains and improvements in student achievement in the nation's highest poverty schools — the gap in performance between students in high- and low-poverty schools remains a great challenge for educators and policy makers committed to improving teaching and learning so that *all* students can reach high standards of achievement.

Data Sources

The NAEP data presented in this report were analyzed for the Planning and Evaluation Service of the U.S. Department of Education by the Educational Testing Service (ETS), in conjunction with the National Center for Education Statistics. NAEP is a nationally representative and continuing assessment of American students that aims to measure students' progress toward higher achievement. For this report, data were analyzed from three NAEP assessments:

(1) *Long-term trend assessment* — This assessment tracks student achievement of 9-, 13- and 17-year-olds over time by administering the same materials and replicating procedures for each assessment. The assessment is a valuable tool for examining trends in student achievement. The content and procedures of the assessment do not change. Its limitation is that it does not reflect current educational content. This report focuses on the achievement of 9-year-old students in high- and low-poverty public schools on the long-term trend assessment. Performance is reported as an average scale score, which ranges from 0 to 500. The trend data in this report track to 1986 in math (except for 1988, when no data were released on this NAEP assessment) and to 1988 in reading.

(2) *National main assessment* — This assessment presents national and regional results on NAEP. This report examines achievement levels for 4th grade students in 1992 and 1996 in high- and low-poverty schools by levels of proficiency (percent of students scoring at or above the basic and proficient levels). The assessment has different questions and tasks from the long-term assessment, reflecting current educational content and assessment methodology.

(3) *State main assessment* — This assessment reports student achievement in schools across the United States, state by state. In 1996, samples of students from 44 states and the District of Columbia participated in the state math main assessment. The NAEP state reading main assessment was last administered in 1994; a sample of students in 39 states and the District of Columbia participated in the assessment. This report focuses on the percentages of 4th grade students in high- and low-poverty schools in 1992 and 1996

scoring at or above the *Basic* level, defined as partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade, and the *Proficient* level, defined as solid academic performance.¹⁹

Educational Testing Service analyzed NAEP results for each of these assessments by level of school poverty (in quartiles 0-25, 26-50, 51-75, 76-100 percent poverty). The variable used to measure school poverty is the percentage of students in schools who receive free and reduced-price lunch. The item used in this report is a school-level variable taken from a NAEP questionnaire answered by school principals. For the purpose of this report, *high-poverty* schools are those in which more than 75 percent of students receive free and reduced-price lunch. *Low-poverty* schools are those in which 25 percent or fewer students receive free and reduced-price lunch.

A caution about the trend data on achievement and school poverty is needed because NAEP items measuring poverty have varied over time. The charts in this report use "percentage of students receiving free and reduced-price lunches" as a proxy to measure poverty, just as districts typically use this measure to rank order schools for Title I services. Yet, this variable has not been measured in the same way over time. Before 1992, schools were asked two open-ended questions as part of the NAEP school questionnaire that were used to compute a school poverty indicator. Schools were asked how many students were enrolled in the school, and how many were enrolled in the school lunch program. Beginning with, and since 1992, the school questionnaire includes a multiple choice question with eight categories, asking what percentage of students in the school are enrolled in the school lunch program.

¹⁹ U.S. Department of Education, National Center for Education Statistics (NCES).

Appendix
State NAEP Math Performance
Percentage of 4th Grade Students in High-Poverty Schools Scoring At or Above Basic

State	1992	Standard Error	Percent of schools in high-poverty category	1996	Standard Error	Percent of schools in high-poverty category
Alabama	17.9	1.2	19.0	30.0	1.0	34.8
Alaska	--			36.5	1.1	12.4
Arizona	21.4	1.6	12.2	38.2	1.1	30.0
Arkansas	32.0	1.4	11.5	39.1	1.1	25.5
California	17.4	1.3	18.0	25.2	0.8	22.9
Colorado	36.7	1.8	6.2	46.2	1.9	11.6
Connecticut	12.6	1.2	8.9	40.7	2.4	12.1
Delaware	*			*		
District of Columbia	15.0	0.8	54.7	11.2	0.7	62.3
Florida	23.0	1.8	14.7	47.8	1.2	31.3
Georgia	30.8	.7	17.2	43.6	1.5	38.4
Hawaii	42.1	2.8	4.0	48.2	0.9	33.5
Idaho	63.7	2.8	4.8	--		
Illinois	--			--		
Indiana	36.0	1.1	9.4	62.7	2.4	16.7
Iowa	61.4	2.5	5.4	60.5	2.5	23.4
Kansas	--			--		
Kentucky	39.1	1.6	10.3	52.0	1.1	27.9
Louisiana	22.9	1.0	34.0	36.1	0.6	51.3
Maine	70.4	4.9	7.7	80.4	0.8	11.1
Maryland	13.4	0.7	7.8	33.8	0.7	17.5
Massachusetts	37.5	1.7	11.4	50.9	2.8	8.9
Michigan	14.7	1.8	10.3	56.0	2.0	18.2
Minnesota	*			75.7	1.2	25.4
Mississippi	23.9	0.7	48.4	29.4	0.9	43.7
Missouri	35.3	1.0	11.2	48.2	1.3	19.4
Montana	--			65.3	2.0	25.0
Nebraska	41.1	3.0	7.3	65.1	1.2	23.3
Nevada	--			52.9	1.1	26.4
New Hampshire	*			--		
New Jersey	35.1	1.1	15.3	24.8	2.6	13.7
New Mexico	34.4	2.0	21.9	37.1	0.7	39.1
New York	24.7	1.6	19.1	30.1	1.9	26.1
North Carolina	26.3	1.5	7.3	46.0	1.4	18.3
North Dakota	69.1	2.8	9.4	68.7	1.7	36.2
Ohio	25.8	1.1	11.1	--		
Oklahoma	41.2	1.8	11.0	--		
Oregon	--			47.7	1.7	14.1
Pennsylvania	28.9	2.0	12.3	28.1	0.8	15.6
Rhode Island	24.6	1.7	14.2	29.7	1.6	16.7
South Carolina	25.2	0.8	18.0	37.0	1.3	31.7

State	1992	Standard Error	Percent of schools in high-poverty category	1996	Standard Error	Percent of schools in high-poverty category
South Dakota	—			—		
Tennessee	25.8	1.6	15.0	43.4	1.4	26.5
Texas	35.1	1.0	24.0	42.7	2.0	22.1
Utah	*			67.3	0.6	30.4
Vermont	—			59.8	1.8	7.5
Virginia	*			45.9	1.1	17.3
Washington	—			55.9	2.4	10.2
West Virginia	38.9	1.6	15.3	60.6	1.8	29.7
Wisconsin	31.5	2.5	4.6	64.5	1.3	18.5
Wyoming	52.6	0.8	7.7	64.6	2.1	18.4

* Sample size too small to permit reliable estimate

— Non-participating state

State NAEP Reading Performance
Percentage of 4th Grade Students in High-Poverty Schools Scoring At or Above Basic

State	1992	Standard Error	Percent of schools in high-poverty category	1994	Standard Error	Percent of schools in high-poverty category
Alabama	20.5	2.1	19.2	28.4	1.5	19.6
Alaska	--			--		
Arizona	21.3	1.5	12.1	28.7	1.5	25.1
Arkansas	38.5	1.4	10.3	29.1	1.6	13.8
California	12.7	2.1	16.5	14.8	1.5	16.6
Colorado	38.0	2.2	5.9	30.2	0.8	6.3
Connecticut	20.6	3.8	8.9	21.5	1.5	12.9
Delaware	*			*		
District of Columbia	18.1	0.5	55.9	13.9	0.7	61.9
Florida	24.2	2.1	15.3	25.6	1.9	18.1
Georgia	34.2	1.7	18.2	29.0	1.0	22.3
Hawaii	36.1	1.9	4.2	23.2	2.4	6.5
Idaho	66.5	2.8	5.2	--		
Illinois	--			--		
Indiana	49.4	1.5	9.5	45.9	3.6	6.7
Iowa	65.8	0.8	5.5	*		
Kansas	--			--		
Kentucky	49.6	2.2	10.8	44.6	1.2	11.2
Louisiana	30.8	1.5	33.3	21.7	0.8	35.5
Maine	76.4	1.5	6.5	*		
Maryland	13.0	2.5	7.2	20.5	1.2	5.0
Massachusetts	52.8	2.5	11.0	28.5	1.0	8.5
Michigan	18.2	2.0	10.2			
Minnesota	*			*		
Mississippi	28.6	1.3	48.5	29.1	1.4	39.1
Missouri	38.0	1.7	11.3	24.9	1.6	5.6
Montana	--			41.6	2.8	5.2
Nebraska	39.4	2.5	6.6	58.5	5.0	4.0
Nevada	--			--		
New Hampshire	*			*		
New Jersey	34.9	1.5	15.5	25.9	1.1	16.2
New Mexico	39.7	0.9	22.2	32.0	1.2	26.0
New York	29.9	1.6	19.5	25.5	2.4	23.4
North Carolina	43.9	3.4	7.4	43.2	2.9	10.2
North Dakota	73.1	1.8	9.4	56.5	2.4	5.0
Ohio	37.2	1.7	10.7	--		
Oklahoma	43.3	1.2	9.5	--		
Oregon	--			--		
Pennsylvania	29.8	0.8	12.1	22.5	0.7	15.5
Rhode Island	32.3	1.0	13.3	37.9	1.1	15.8
South Carolina	35.0	1.7	17.5	19.7	0.9	20.1

State	1992	Standard Error	Percent of schools in high-poverty category	1994	Standard Error	Percent of schools in high-poverty category
South Dakota	—			—		
Tennessee	36.9	1.7	14.9	35.0	2.5	12.5
Texas	38.0	1	25.1	37.3	2.9	23.6
Utah	*			*		
Vermont	—			—		
Virginia	*			27.5	2.2	9.3
Washington	—			*		
West Virginia	46.8	1.5	14.5	51.8	2.2	12.2
Wisconsin	27.3	5.1	3.9	*		
Wyoming	59.8	3.0	7.6	*		

* Sample size too small to permit reliable estimate

— Non-participating state