

High Standards Help Struggling Students: New Evidence

In 2014, the United States will take a bold step toward improving the learning of all students: 46 states and the District of Columbia will begin to implement the Common Core State Standards, the rigorous new benchmarks aimed at raising achievement in English language arts and mathematics. While most scholars, policymakers, and educators embrace the higher standards and their commitment to deeper learning, many have also raised concerns about the fairness of raising the academic bar for students who are struggling to meet the standards that already exist. Because these students are often poor and attending subpar schools, it is reasonable to worry that they will suffer disproportionately when the new standards take effect.

There is no question that the bulk of U.S. students have much to achieve. According to the National Assessment of Educational Progress (NAEP), only about a third of fourth-, eighth-, and 12th-graders are proficient or advanced in reading and math. The picture is even more alarming at lower levels: roughly one-third of all students fall into the “below basic” category, meaning they have not even mastered essential grade-level material. Two-thirds of African-American, Hispanic, and economically disadvantaged students are below basic in reading and math. Because the new assessments aligned to the Common Core promise to be as or even more rigorous than the NAEP, the performance results they produce are likely to look much the same, and possibly worse.

How the Common Core affects struggling students is a question that can't be answered until the standards are implemented, of course. And much will depend on how these students are taught and supported. But we can get some idea of what to expect with the new standards by looking more closely at the achievement patterns that developed under the last significant attempt in the U.S. to raise the academic bar—the federal No Child Left Behind Act. Because NCLB allowed each state to set its own standards, the states serve as useful laboratories for testing the influence of high standards on struggling students. Using state-by-state NAEP data, we conducted such a test and found that high standards help, not hurt, struggling students.

Progress by Struggling Students

Our study defined “struggling students” as those who scored in the below basic category on the NAEP. To test the effect of high standards on levels of achievement, we compared the percentage of below basic students in states

with high standards with those in states with low standards in 2003, the year after NCLB was enacted. This process was then repeated using 2011 NAEP scores. We assumed that if there were a lower percentage of students in the below basic category in 2011 than in 2003 in states with high standards—as compared to states with low standards—that (all else being equal) high standards may help struggling students.

We calculated the percentage reduction in below basic from 2003 to 2011 in four categories: fourth-grade math, fourth-grade reading, eighth-grade math, and eighth-grade reading. In Massachusetts, for example, 16 percent of fourth-grade math students fell into the below basic category in 2003; in 2011, only 7 percent did—a drop of 56 percent. In contrast, the percentage of below basic students in California was 33 percent in 2003 and 26 percent in 2011—a drop of 21 percent. Both states made progress, but from a proportional perspective Massachusetts made more.

Defining Standards

There are two well-known measures of the strength of state standards: those proposed by Paul E. Peterson and Frederick M. Hess, and those proposed by the Thomas B. Fordham Institute under the direction of Chester E. Finn Jr. These two measures differ in their objectives. The Peterson-Hess measure evaluates state standards essentially based on the cut scores by which state assessment scores are translated into proficiency categories. Conceptually, the higher the cut score required for proficiency, the higher the standards are judged to be. The Fordham Institute ranks states by the language of their standards, not on their assessments. Both measures are important. A state can have weak standards but high cut scores or strong standards and low cut scores. Neither is desirable for raising the bar or setting passing criteria. But because we believe schools focus more on actual assessments and the criteria that go into setting cut scores, our analysis employs the Peterson-Hess measure.

Peterson and Hess take advantage of the fact that the NAEP, which is administered by the U.S. Department of Education, is the only test common to all 50 states and one that sets a higher bar than all of them. Using the NAEP as a universal gauge of rigor, they compare the percentage of students deemed proficient on state assessments to the percentage ranked proficient on the NAEP. The closer the state-percentage proficient to the NAEP-percentage proficient, the more rigorous the state standards are judged to be. Based on the differences between state and NAEP scores, standards are scored, A, B, C, D, and F. Our study uses the ratings from 2007.

We assigned “strength of state proficiency standards” for fourth-grade math, fourth-grade reading, eighth-grade math, eighth-grade reading, and overall

average grades. Specifically, we looked at states with high standards and states with low standards. High-standards states were those receiving a grade of A or B from Peterson and Hess. Low-standards states were those receiving a grade of D or F. We chose to divide the standards in this way because in states with moderate or C standards, we saw no pattern to achievement changes, good or bad. It was only when we looked at the extremes of the distribution that patterns emerged. (The Common Core will likely set standards closer to the A's and B's, so the upper end becomes a relevant focus.)

Emerging Patterns

So, what patterns emerged?

Once we sorted out the high-standards states and the low-standards states in each grade and subject area and added our variable of interest—reduction in the percentage of students who fell below basic between 2003 and 2011—we found some interesting results.

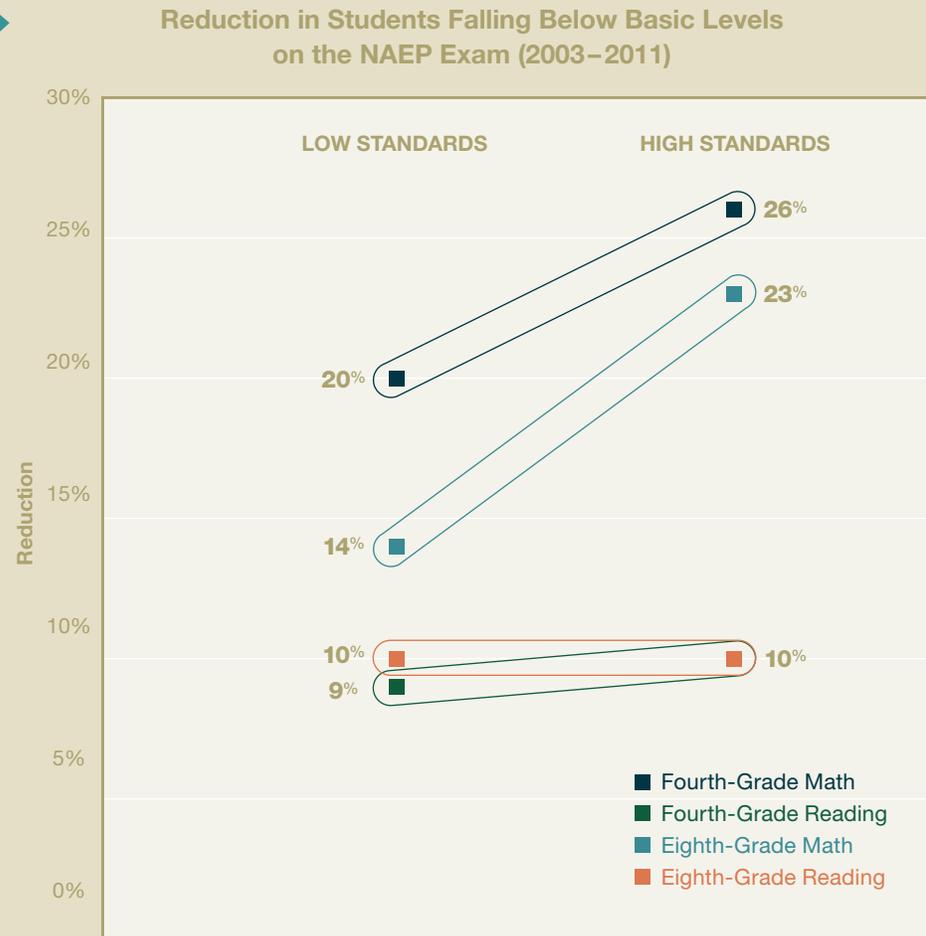
As **Chart 1** shows, the percentage of below basic students in fourth-grade math, on average, declined 26 percent among high-standards states and 20 percent among low-standards states. For fourth-grade reading, the decline in below basic students among high-standards states was 10 percent compared to 9 percent among low-standards states. In eighth-grade math, the reduction in the percentage of below basic students from 2003 to 2011 in high-standards states was 23 percent, while the reduction in low-standards states was 14 percent. In eighth-grade reading, the results from the comparison indicated that there were no differences in the reduction in the below basic category between states with high standards and states with low standards; it was 10 percent in both cases. (See **Charts 1a–1d** for lists of which states had high or low standards in each category.)

These results suggest that there is no evidence that high standards have hurt low-achieving kids; indeed, the evidence is that high standards have probably helped. In three of the four cases, higher state standards are associated with a greater drop in students in the below basic NAEP category; in math, the difference in the drop is especially dramatic for both grades. This may be because quantification skills are less subjective than the interpretive skills required in language arts and thus more easily taught and mastered.

Overall, in nearly all cases, the study showed that standards help below basic students. For fourth-grade math, for example, only one state—Oregon—did not see a reduction in the percentage of students in the below basic category, and two states—Connecticut and South Carolina—experienced no change. These reductions, and their few exceptions, no doubt have causes beyond academic

CHART 1

States with high standards saw a larger percentage of students moving out of the below basic level in three of four testing categories.



standards. But it is clearly the case that the U.S. reduced the percentage of below basic achievers almost everywhere over the last decade, a time when NCLB-style accountability and explicit academic standards have governed public schools. Now, as we move into an era of even higher standards, greater accountability, and uniform tests, we have evidence from the first period of standards-based reform that high standards—tied to demanding performance levels—are likely to advance the education of all students.

This finding was reinforced when, using the Fordham Institute model instead of Peterson-Hess, we looked only at the strength of standards and not cut scores. When we conducted the same analyses using the Fordham rankings, we found no consistent relationship, positive or negative, with changes in below basic achievement. It appears that standards are the most effective when they are accompanied by rigorous cut scores.

CHART 1A

High-standards states saw a 26% decline in below basic students in 4th-grade math; low-standards states, only 20%.

HIGH STANDARDS*

California, Colorado, Hawaii, Maine, Massachusetts, Minnesota, Missouri, New Mexico, South Carolina, Vermont, Washington

Reduction in Students Falling Below Basic Levels on the NAEP Exam (2003–2011)

26%

LOW STANDARDS*

Alabama, Alaska, Connecticut, Georgia, Idaho, Illinois, Iowa, Michigan, Mississippi, Nebraska, Oklahoma, Tennessee, Utah, Virginia, West Virginia, Wisconsin

20%

*The strength of state proficiency standards was determined by using the Peterson-Hess measure, which compares the percentage of students deemed proficient on state tests to the percentage ranked proficient on the NAEP.

CHART 1B

High-standards states have a slight advantage over low-standards states in 4th-grade reading.

HIGH STANDARDS*

Arkansas, California, Colorado, Connecticut, Hawaii, Maine, Massachusetts, Missouri, New Hampshire, New Mexico, New York, Pennsylvania, Rhode Island, South Carolina, Vermont

Reduction in Students Falling Below Basic Levels on the NAEP Exam (2003–2011)

10%

LOW STANDARDS*

Alabama, Alaska, District of Columbia, Georgia, Louisiana, Maryland, Michigan, Mississippi, Nebraska, North Carolina, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Virginia, West Virginia

9%

*The strength of state proficiency standards was determined by using the Peterson-Hess measure, which compares the percentage of students deemed proficient on state tests to the percentage ranked proficient on the NAEP.

CHART 1C

High-standards states saw a 23% decline in below basic students in 8th-grade math; low-standards states, only 14%.

HIGH STANDARDS*

California, Colorado, Hawaii, Maine, Massachusetts, Minnesota, Missouri, New Mexico, South Carolina, Vermont, Washington

Reduction in Students Falling Below Basic Levels on the NAEP Exam (2003–2011)

23%

LOW STANDARDS*

Alabama, Alaska, Connecticut, Georgia, Idaho, Illinois, Iowa, Michigan, Mississippi, Nebraska, Oklahoma, Tennessee, Utah, Virginia, West Virginia, Wisconsin

14%

*The strength of state proficiency standards was determined by using the Peterson-Hess measure, which compares the percentage of students deemed proficient on state tests to the percentage ranked proficient on the NAEP.

CHART 1D

There was no difference in the reduction between states with high and low standards in 8th-grade reading.

HIGH STANDARDS*

Arizona, California, Michigan, Minnesota, Mississippi, New Mexico, North Dakota, Pennsylvania, Wyoming

Reduction in Students Falling Below Basic Levels on the NAEP Exam (2003–2011)

10%

LOW STANDARDS*

Alabama, Colorado, Florida, Georgia, Illinois, Indiana, Massachusetts, Ohio, Oklahoma, Rhode Island, South Carolina, Texas, Utah, Washington, West Virginia, Wisconsin

10%

*The strength of state proficiency standards was determined by using the Peterson-Hess measure, which compares the percentage of students deemed proficient on state tests to the percentage ranked proficient on the NAEP.

The Effect of Economics

But what if these results were confounded by a variable that isn't measured? What if the findings were actually a reflection of states' economic ability to support struggling students? Is a state's economic wherewithal a better predictor of changes in the percentage of students in the below basic category than the strength of its standards? In short, do below basic students do better in rich states than in poor states, regardless of standards?

To answer these questions, we conducted an analysis in each of the four categories to test whether a state's economic resources might be contributing to the differences in below basic scores.¹ Using median family income by state, we found no statistically significant evidence to support the notion that states' economic resources are contributing to the reduction of below basic scores.

Of course, there are other possibilities for the declines in the numbers of these low-achievers—academic support systems, for instance, or after-school programs, or perhaps curricula that is more focused and refined. These questions deserve exploration. It is clear, however, that struggling students benefit from the implementation of higher academic standards.

The Common Core standards offer a distinct improvement over the status quo; fewer, deeper, and more demanding goals afford students greater opportunities to learn. Tests are being designed to align with the standards, and soon states will set cut scores for levels of achievement. There is no reason for states to dilute the strength of the Common Core standards with lower expectations for performance: high cut scores seem to bring out the best in all students.

From an equity perspective, it is evident that high standards—when tied to high performance expectations—carry several benefits for students who are most academically challenged. Yet it is also clear that far too many students are still stuck at the below basic level. The job of lifting all students to a level of proficiency that will allow them to compete and thrive in the 21st century is very far from done.

Notes

1. We conducted a bivariate regression analysis for each of the four student groups to test the impact of socioeconomic status on the difference in below basic reductions. Once we recorded a state's percentage of students who fell below basic in a certain category in 2003 (from NAEP data), we recorded this same category score for 2011 and calculated the difference between below basic populations from 2003 to 2011. This is the below basic reduction. We found no evidence that socioeconomic status has an effect on the reduction in below basic scores. We used median family income by state as our measure of socioeconomic status from the 2009 U.S. Census. Next, we conducted multivariate regression analysis with our measure of socioeconomic status and state standards in the mix. Again, we found no evidence that socioeconomic status was playing a statistically significant role in the reduction of below basic student scores.

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