State Test Score Trends Through 2008-09, Part 4

Is Achievement Improving and Are Gaps Narrowing for Title I Students?

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Center on Education Policy

1001 Connecticut Avenue, NW, Suite 522
Washington, D.C. 20036
tel: 202.822.8065
fax: 202.822.6008
e: cep-dc@cep-dc.org
w: www.cep-dc.org

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Key Findings

Has achievement increased for students served by Title I, the largest federal elementary and secondary education aid program? This question is particularly important as Congress works on reauthorizing Title I and other provisions of the Elementary and Secondary Education Act of 1965 (ESEA), which was last amended in 2002 by the sweeping No Child Left Behind Act (NCLB).

Title I provides extra instructional services designed to raise achievement for low-performing students in schools with relatively high poverty rates, and for all students in many of the nationôs highest-poverty schools. Since Title I targets students with low achievement, Title I participants as a group are lower-performing than those not participating in the program. At the same time, one would hope to see improved achievement among the Title I group as an indication that the program is meeting its goals. In the past, evidence about the academic achievement of Title I students has been limited, but now many states have made test data available for Title I participants. Although NCLB does not explicitly require states to disaggregate data for Title I students, as it does for various other student subgroups, many states do break out test results for the Title I subgroup.

To learn more about how well Title I students are performing academically, the Center on Education Policy (CEP) compared achievement trends since 2002 (or a more recent year in some states) on state reading and mathematics tests for Title I students and for students not participating in Title I. In particular, we looked at whether Title I students have made gains in reading and math at grades 4, 8, and the high school grade tested for NCLB (usually grade 10 or 11). We also examined whether achievement gaps between Title I and non-Title I students have narrowed. We used two indicators of achievement on each stateôs testð average (mean) scores on the scoring scale for that test, and the percentages of students scoring at or above the proficient level.

Nineteen states, representing various geographic regions and enrolling more than half of the nationôs Title I students, had sufficient test data to be included in this study. These states had a large enough group of Title I test-takers to yield reliable trends and had at least three consecutive years of comparable test data between 2002 and 2009, although the specific starting and ending years varied somewhat.

Key findings from this study include the following:

- ***Achievement on state reading and math tests has improved for Title I students in most states with sufficient data.*** Title I participants have made gains since 2002 in 79% or more of the states with sufficient data, according to either mean scores or percentages proficient. In some grade and subject combinations, 90% or more of these states showed gains for Title I students. In most cases, the number of states with gains for Title I students was equal to or greater than the number with gains for non-Title I students.

- ***Gaps between Title I and non-Title I students have narrowed more often than they have widened since 2002, although trends were less encouraging at grade 4 than at grade 8 or high school.*** At grade 8 and high school, gaps in mean scores between the Title I and non-Title I groups narrowed in both reading and math in a majority of the states with sufficient data; the proportion of these states with narrowing gaps ranged from 57% in grade 8 reading to 78% in high school reading. At grade 4, mean score gaps in reading between Title I and non-Title I students narrowed in 47% of the states with sufficient data, widened in 40%, and showed no change in 13%, while gaps in math narrowed in 44% of these states, widened in 31%, and stayed the same in 25%. Even when gaps widened, however, it was most often because achievement improved for both Title I and non-Title I students but rose faster for the non-Title I group.

- ***When gaps narrowed, it was most often because achievement improved at a faster rate for Title I students than for non-Title I students.*** Gaps between two groups can narrow for various reasons. For example, a gap can narrow even if achievement declines for both

groups but declines at a faster rate for the higher-achieving group. In our study, the most positive combinationð increases for both groups but a greater rate of gain for Title I studentsð accounted for 78% of the instances of mean score gaps narrowing and 82% of the instances of percentage proficient gaps narrowing.

- ***The size of achievement gaps between Title I and non-Title I students varied greatly among states but was often smaller than gaps for low-income students or for certain racial/ethnic groups.*** In most cases, gaps in percentages proficient between Title I and non-Title I students in 2009 (or an earlier year in a few states) amounted to less than 20 percentage points, although gaps were larger in several states. In the 19 states included in this study, gaps between Title I and non-Title I students were generally smaller than the gaps between low-income and non-low-income students, and smaller than African American-white gaps and Latino-white gaps.

Background and Methods

The purpose of Title I, as stated in the authorizing legislation, is to ñensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments.ò

For fiscal year 2011, more than $14.4 billion was appropriated for Title I, Part A grants to school districts.[1] Most of the nationôs school districts receive Title I funds, which they distribute to their schools with high numbers or percentages of low-income children. Poverty rates are used as a proxy for educational need because research has often shown a correlation between poverty and low achievement.

Approximately 62% of all public elementary and secondary schools were eligible for Title I grants in school year 2007-08 (U.S. Department of Education, 2010a). About 71% of elementary

[1]In addition, the American Reinvestment and Recovery Act included a fiscal year 2009 supplemental appropriation of $10 billion for Title I; these funds can be used through the end of fiscal year 2011.

schools received Title I funds, compared with 40% of middle schools and 27% of high schools (U.S. Department of Education, 2008). Elementary schools are more often served by Title I because many districts believe it is more effective from an educational and cost standpoint to identify and address academic problems when children are still young or because some middle and high schools do not have high enough poverty rates to qualify for Title I.

Title I schools with poverty rates of less than 40% must use these grants for ñtargeted assistanceò programs that provide extra instructional services to low-achieving students. Title I schools with poverty rates of 40% or more have the option of using their funds for ñschoolwideò programs that upgrade instruction for *all* students in the school. More than 17 million children participated in Title I in school year 2006-07 (U.S. Department of Education, n.d.). Of these students, approximately 60% percent were in grades K-5, 21% in grades 6-8, and 16% in grades 9-12; the remainder were in preschool or ungraded schools.

CEP has been conducting research on student achievement since 2007, but this is the first time we have reported trends specifically for Title I students. This report is the fourth in the series *State Test Score Trends Through 2008-09*. The three previous reports in this series, as well as reports from earlier years, are available at www.cep-dc.org.

Data for this study came from an extensive database assembled by CEP with technical support from the Human Resources Research Organization (HumRRO). The database includes test results for all 50 states and the District of Columbia, disaggregated for various subgroups. Many states do not report any disaggregated test results for Title I students. Of the 19 states that did provide data for this study, some lacked sufficient data in particular grades or subjects, and fewer states provided mean scores than provided percentages proficient. State education officials have verified the accuracy of the data used in this study.

The appendix to this report contains detailed information about the methods used to conduct this study. A few key points about methods are highlighted here:

- ***Achievement indicators.*** As noted above, this study examined both the percentages of students scoring at or above the proficient level on state tests and average (mean) scores on these tests. Percentages proficient are the main indicator of progress under NCLB, but they are a less useful measure of gap trends than mean scores because the apparent size of a percentage proficient gap may vary depending on where a state has set the cut scores for proficiency on its test. For example, if a cut score has been set very high or very low on the scoring scale, so that almost everyone reaches it or almost nobody reaches it, the gaps between subgroups will appear to be small. But if the cut score is set closer to the average test scoreð and thus closer to where the bulk of studentsôscores are distributed along the scoring scaleð then achievement gaps will appear to be larger. For this reason, mean scores trends are discussed first in various sections of this report.

- ***Years covered.*** States were included in the trends analyses of this study only if they had three or more consecutive years of comparable test data for Title I students, the minimum needed to discern a trend. Within this group of states, trends begin with tests administered in school year 2001-02 where possible, or in the closest year after that with comparable data. Trends end with tests administered in school year 2008-09, with a few exceptions.

- ***Subgroups compared.*** Title I students include low-achieving students selected for extra instructional services in Title I targeted assistance schools, as well as *all* students in higher-poverty schools with Title I schoolwide programs. For this study, we compared the achievement of Title I students with that of students who do not receive Title I services or do not attend schools with Title I schoolwide programs, using data on Title I students provided by states. States were excluded from a particular analysis if their Title I subgroup was too small to yield reliable results (fewer than 500 test-takers).

- ***States included.*** Nineteen states had sufficient data to be included in at least some of the trends analyses in this study: Arizona, California, Colorado, Delaware, Idaho, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Hampshire, North Carolina, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, and Washington. Although this is less than a majority of the 50 states, these 19 states enroll 54% of the Title I students in

the nation (U.S. Department of Education, 2010b; U.S. Department of Education, 2009). With Congress in the midst of ESEA reauthorization, it is important to analyze trends in the states that do collect and report achievement data for Title I students.

Gains in Mean Scores for Title I Students

In the states with sufficient data for this study, achievement on state tests has generally improved for Title I students since 2002 (or a somewhat shorter period in some states). Whether one looks at mean scores, discussed in this section, or percentages proficient, discussed in the next section, roughly four-fifths or more of the states with sufficient data showed gains for Title I participants.

As displayed in **table 1**, mean scores have increased for Title I students in a large majority of the states with sufficient datað from 79% to 100% of these states, depending on grade level and subject. (The number of states with sufficient mean score data ranged from 9 to 16.)

Table 1. Percentage *(and number)* of states with sufficient data showing various trends in mean scores for Title I and non-Title I students, 2002–2009*

Trend	Grade 4 Title I	Grade 4 non-Title I	Grade 8 Title I	Grade 8 non-Title I	HS Title I	HS non-Title I
Reading						
% of states with gain	80% *(12 states)*	80% *(12)*	79% *(11)*	86% *(12)*	89% *(8)*	56% *(5)*
% of states with decline	7% *(1)*	7% *(1)*	14% *(2)*	14% *(2)*	0% *(0)*	11% *(1)*
% of states no change	13% *(2)*	13% *(2)*	7% *(1)*	0% *(0)*	11% *(1)*	33% *(3)*
Number of states with data	*15*	*15*	*14*	*14*	*9*	*9*
Mathematics						
% of states with gain	100% *(16)*	88% *(14)*	93% *(14)*	93% *(14)*	90% *(9)*	80% *(8)*
% of states with decline	0% *(0)*	6% *(1)*	7% *(1)*	0% *(0)*	0% *(0)*	0% *(0)*
% of states no change	0% *(0)*	6% *(1)*	0% *(0)*	7% *(1)*	10% *(1)*	20% *(2)*
Number of states with data	*16*	*16*	*15*	*15*	*10*	*10*

Table reads: In grade 4 reading, 80% of the states with sufficient data (12 of 15 states) made gains in mean scores for Title I students, while 7% (1 state) showed a decline for this group and 13% (2 states) showed no net change.

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not always total 100% due to rounding.

States with mean score gains for Title I students during the years analyzed far outnumbered states with declines in both reading and math, and at grades 4, 8, and high school.

A majority of states with sufficient data also showed mean score gains for non-Title I students. These rising trends for Title I and non-Title I students are consistent with rising trends in state test scores for students overall and for racial/ethnic minority groups, low-income students, boys, and girls (Center on Education Policy, 2010a; 2010b; 2011).

The proportion of states with mean score gains for Title I students was the same as or higher than the proportion with gains for non-Title I students in nearly all grades and subjects analyzed. The only exception was in grade 8 reading.

In addition to looking at trends in particular grades and subjects, we also looked at the overall percentage of trend lines showing gains, declines, and no net change in mean scores, displayed in **table 2**. As used in this report, a trend line is a record of change in the performance of a particular group of students in one state, one subject, and one grade level. For example, the change in grade 8 reading scores from 2002 to 2009 for Title I students in Pennsylvania constitutes one trend line. When trend lines for mean scores were aggregated across all states with sufficient data, all three grade levels, and both subjects, 89% of trend lines showed gains for Title I students, compared with 82% of trend lines for non-Title I students.

Table 2. Percentage *(and number)* of mean score trend lines with gains, declines, or no change in achievement for Title I and non-Title I students, 2002–2009*

All trend lines combined (reading and math; grades 4, 8, and high school)	**Title I**	**Non-Title I**
% of trend lines with gain	89% *(70 trend lines)*	82% *(65)*
% of trend lines with decline	5% *(4)*	6% *(5)*
% of trend lines no change	6% *(5)*	11% *(9)*
Total number of trend lines	*79*	*79*

Table reads: Across both subjects, all three grades, and all states with sufficient data, 89% of the trend lines analyzed using mean scores (70 of 79 trend lines) showed gains for Title I students, while 82% (65 trend lines) showed gains for non-Title I students.

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not always total 100% due to rounding.

Gains in Percentages Proficient for Title I Students

The number of states with sufficient percentage proficient data for Title I students ranged from 13 to 18, depending on grade and subjectð more than had mean score data. Typically, the share of these states with gains in percentages proficient for Title I students was higher than the share with gains in mean scores for the years analyzed.

As displayed in **table 3,** a majority of the states with sufficient datað from 83% to 100%, depending on grade and subjectð showed gains in percentages proficient for Title I students. For every grade/subject combination, a higher proportion of states made gains for the Title I subgroup than made gains for non-Title I students.

Table 3. Percentage *(and number)* of states with sufficient data showing various trends in percentages proficient for Title I and non-Title I students, 2002–2009*

Trend	Grade 4 Title I	Grade 4 non-Title I	Grade 8 Title I	Grade 8 non-Title I	HS Title I	HS non-Title I
Reading						
% of states with gain	94% *(17 states)*	83% *(15)*	94% *(16)*	88% *(15)*	85% *(11)*	77% *(10)*
% of states with decline	0% *(0)*	6% *(1)*	6% *(1)*	12% *(2)*	8% *(1)*	15% *(2)*
% of states no change	6% *(1)*	11% *(2)*	0% *(0)*	0% *(0)*	8% *(1)*	8% *(1)*
Number of states with data	*18*	*18*	*17*	*17*	*13*	*13*
Mathematics						
% of states with gain	89% *(16)*	83% *(15)*	100% *(18)*	94% *(17)*	93% *(13)*	86% *(12)*
% of states with decline	6% *(1)*	17% *(3)*	0% *(0)*	0% *(0)*	7% *(1)*	14% *(2)*
% of states no change	6% *(1)*	0% *(0)*	0% *(0)*	6% *(1)*	0% *(0)*	0% *(0)*
Number of states with data	*18*	*18*	*18*	*18*	*14*	*14*

Table reads: In grade 4 reading, 94% of the states with sufficient data (17 of 18 states) showed gains in the percentage of Title I students scoring proficient, while 6% (1 state) showed no change.

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not always total 100% due to rounding.

For percentages proficient, we also looked at the overall proportion of trend lines with gains, declines, and no net change in achievement across all the states with sufficient data, all three

grades, and both subjects. As displayed in **table 4**, 93% of these trend lines showed gains in percentages proficient for Title I students, compared with 86% for non-Title I students.

Table 4. Percentage *(and number)* of percentage proficient trend lines with gains, declines, or no change in achievement for Title I and non-Title I students, 2002–2009*

All trend lines combined (reading and math; grades 4, 8, and high school)	**Title I**	**Non-Title I**
% of trend lines with gain	93% *(91 trend lines)*	86% *(84)*
% of trend lines with decline	4% *(4)*	10% *(10)*
% of trend lines no change	3% *(3)*	4% *(4)*
Total number of trend lines	*98*	*98*

Table reads: Across both subjects, all three grades, and all states with sufficient data, 93% of the percentage proficient trend lines analyzed (91 of 98 trend lines) showed gains for Title I students, while 86% (84 trend lines) showed gains for non-Title I students.

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

As an additional way of considering the relative progress of Title I students, we compared the percentages proficient for Title I students with those of the low-income subgroup tracked for NCLB accountability. If Title I students as a group have made relatively more progress than low-income students, this might suggest that Title I services are making a difference for the children they reach.

The only notable findings from this comparison were at grade 4. In a majority of the states with sufficient data, the grade 4 percentages proficient were higher for Title I students than for low-income students in 2009 (or an earlier year in a few states). Moreover, in a slight majority of the states with sufficient data, Title I students in grade 4 had made greater average gains since 2002 than low-income students. At grade 8 and high school, states were more evenly divided as to which group, Title I or low-income students, had higher performance.

Comparisons between these two groups are somewhat fuzzy, however, because of the degree of overlap between the Title I and low-income subgroups. Since the majority of Title I funds go to high-poverty schools, many Title I students come from low-income families. Not all Title I students are low-income, however. Students in targeted assistance schools are chosen for Title I services based on achievement, not income. In addition, not every child in a high-poverty school

with a Title I schoolwide program comes from a low-income family. Similarly, not every low-income student participates in Title Iđ if, for example, they are higher-achieving or attend a school that does not receive Title I funds.

Snapshot of Grade 4 Achievement for Title I and Non-Title I Students

Despite gains in achievement, Title I students continue to perform at lower levels than non-Title I students at all three grade levels in both reading and math in the states with sufficient data. This is not surprising, since students in targeted assistance schools are selected for Title I services precisely because they are low-achieving. **Table 5** gives a snapshot of the percentages of Title I and non-Title I students scoring proficient in grade 4 reading in 2009 (or 2008 in the case of two states) for the 18 states with sufficient data at this grade. We focused on grade 4 because most Title I students are in the elementary grades and because more states have data for grade 4.

Table 5. Percentages of Title I and non-Title I students scoring proficient on state grade 4 reading tests*

Note: Comparisons between states in this table are not appropriate due to differences in state tests and proficiency cut scores.

State	Title I students	Non-Title I students
Arizona	55%	74%
California	42%	71%
Colorado	76%	91%
Delaware	80%	89%
Idaho	81%	90%
Kansas	80%	92%
Kentucky	72%	80%
Maine	49%	75%
Maryland	78%	90%
Massachusetts	31%	64%
Missouri	35%	53%
New Hampshire	56%	79%
Pennsylvania	54%	81%
Rhode Island	52%	78%
Tennessee	88%	95%
Texas	81%	93%
Utah	70%	81%
Washington	61%	75%

Table reads: In Arizona, 74% of non-Title I students scored proficient on state tests in 2008, compared with 55% of Title I students.

*Data are from 2009 for all of the states in the table except Arizona and California, where data are from 2008.

In all of the states in table 5, the percentage proficient was lower for Title I students than for non-Title I students. In Massachusetts, for example, the state with the lowest percentages for both groups, 31% of Title I students scored proficient in grade 4 reading, compared with 64% of non-Title I students. In Tennessee, the state with the highest percentages for both groups, 88% of Title I students scored proficient, compared with 95% of non-Title I students. (The differences between states in the table are not meaningful; they are due more to differences in test difficulty, test content, cut scores for proficiency, and other test characteristics than to variations in educational quality.)

Trends in Mean Score Gaps for Title I Students

At all three grades in both reading and math, gaps in mean scores between Title I and non-Title I students have narrowed more often than they have widened since 2002 (or a shorter period in some states). But there has been less progress in narrowing mean score gaps at grade 4 than at grade 8 or high school, as shown in **table 6.**

Table 6. Percentage *(and number)* of states with sufficient data showing various trends in mean score gaps between Title I and non-Title I students, 2002–2009*

Trend	Grade 4	Grade 8	High school
Reading			
Narrowed	47% *(7 states)*	57% *(8)*	78% *(7)*
Widened	40% *(6)*	21% *(3)*	11% *(1)*
No change	13% *(2)*	21% *(3)*	11% *(1)*
Number of states with data	*15*	*14*	*9*
Mathematics			
Narrowed	44% *(7)*	60% *(9)*	70% *(7)*
Widened	31% *(5)*	33% *(5)*	10% *(1)*
No change	25% *(4)*	7% *(1)*	20% *(2)*
Number of states with data	*16*	*15*	*10*

Table reads: In grade 4 reading, the gap in mean scores between Title I and non-Title I students narrowed in 47% of the states with sufficient data (7 of 15 states). This gap widened in 40% of these states (6 states) and showed no net change in 13% (2 states).

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not always total 100% due to rounding.

In grade 8 reading, the gap in mean scores between Title I and non-Title I students narrowed in 57% of the 14 states with sufficient data, widened in 21% of these states, and showed no net change in 21%. In grade 8 math, this gap narrowed in 60% of the 15 states with sufficient data, widened in 33%, and showed no net change in 7%. At the high school level, gaps in mean scores narrowed in 78% of the states with sufficient data in reading and in 70% of these states in math.

At grade 4, however, gaps in mean scores between Title I and non-Title I students widened in a sizeable share of the states with sufficient data and showed no net change in other states. In grade 4 reading, mean score gaps narrowed in 47% of the states with sufficient data, widened in 40%, and showed no change in 13%. In grade 4 math, these gaps narrowed in 44% of the states with sufficient data, widened in 31%, and showed no change in 25%.

Mean scores give a less positive picture of statesô progress in narrowing gaps at grade 4 than the percentages proficient trends described in the next section. However, mean scores are a better indicator of changes in gaps than percentages proficient because, as explained in the appendix, a gap in percentages proficient between the same two groups may appear smaller or larger depending on where a state has set its cut score.

Table 7 displays the percentage of trend lines with gains, declines, and no net changes in mean score gaps for Title I students across all of the states with sufficient data, all three grade levels, and both subjects. Fifty-seven percent of these trend lines showed gaps narrowing, 27% showed gaps widening, and 13% showed no change.

Table 7. Percentage *(and number)* of mean score trend lines with narrowing, widening, or stable achievement gaps for Title I and non-Title I students, 2002–2009*

All trend lines combined (reading and math, grades 4, 8., and 12)	
Narrowed	57% *(45 trend lines)*
Widened	27% *(21)*
No change	16% *(13)*
Total number of trend lines	*79 trend lines*

Table reads: Across both subjects, all three grades, and all states with sufficient data, the gap between Title I and non-Title I students narrowed according to 57% of the trend lines analyzed (45 of 79 trend lines).

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Trends in Percentage Proficient Gaps for Title I Students

As shown in **table 8**, gaps in percentages proficient between Title I and non-Title I students narrowed at all three grades in a majority of the states with sufficient datað from 64% to 83% of these states, depending on the grade and subject. At grade 4, in particular, percentage proficient gaps narrowed more often than mean score gaps. But, as already noted, percentages proficient have limitations as a measure of gaps.

Table 8. Percentage *(and number)* of states with sufficient data showing various trends in mean score gaps between Title I and non-Title I students, 2002–2009*

Trend	Grade 4	Grade 8	High school
Reading			
Narrowed	72% *(13 states)*	71% *(12)*	85% *(11)*
Widened	22% *(4)*	24% *(4)*	15% *(2)*
No change	6% *(1)*	6% *(1)*	0% *(0)*
Number of states with data	*18*	*17*	*13*
Mathematics			
Narrowed	83% *(15)*	67% *(12)*	64% *(9)*
Widened	11% *(2)*	28% *(5)*	29% *(4)*
No change	6% *(1)*	6% *(1)*	7% *(1)*
Number of states with data	*18*	*18*	*14*

Table reads: In grade 4 reading, the gap in percentages proficient between Title I and non-Title I students narrowed in 72% of the states with sufficient data (13 of 18 states). This gap widened in 22% of these states (4 states) and showed no net change in 6% (1 state).

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not always total 100% due to rounding.

Table 9 displays the proportion of trend lines with gains, declines, and no net change in percentage proficient gaps across all states with sufficient data, all three grade levels, and both subjects. Seventy-three percent of these trend lines showed Title I gaps narrowing, 21% showed gaps widening, and 5% showed no change.

Table 9. Percentage *(and number)* of percentage proficient trend lines with narrowing, widening, or stable achievement gaps between Title I and non-Title I students, 2002–2009*

All trend lines combined (reading and math; grades 4, 8, and high school)	
Narrowed	73% *(72 trend lines)*
Widened	21% *(21)*
No change	5% *(5)*
Total number of trend lines	*98 trend lines*

Table reads: Across both subjects, all three grades, and all states with sufficient data, the gap in percentages proficient between Title I and non-Title I students narrowed according to 73% of the trend lines analyzed (72 of 98 trend lines).

*The years covered by these trends vary among states. Trends in some states begin later than 2002 or end earlier than 2009, although every state in the table has at least three years of comparable test data.

Note: Percentages do not total 100% due to rounding.

Reasons for Narrowing and Widening Gaps

Gaps can narrow for various reasons. From an educational perspective, the most desirable situation occurs when achievement goes up for both groups but rises at a faster rate for the lower-performing group, such as Title I students. Gaps can also narrow if achievement rises for the lower-performing group but declines for the higher-performing group, or if achievement declines for both groups but at a faster rate for the higher-performing group. Similarly, gaps can widen for various reasons. For example, a gap can widen even if achievement goes up for both groups but improves at a faster rate for the higher-performing group than the lower-performing one.

Which combinations of factors account for the trends in the gap between Title I and non-Title I students? **Table 10** shows the results of an analysis intended to answer this question. When gaps *narrowed*, it was most often because both groups made gains, but Title I students improved at a greater rate during the years analyzed; this was the case in 78% of the narrowing trend lines using mean scores and 82% using percentages proficient. In some other cases, gaps narrowed because achievement rose for Title I students but stayed the same or declined for non-Title students. In only a few cases did gaps narrow because achievement decreased for both groups but at a faster rate for the non-Title I group, or because achievement stayed the same for Title I students while declining for non-Title I students.

Table 10. Reasons for trends in gaps between Title I and non-Title I students

Combination of factors that produced trend	*Mean scores* — Percentage of trend lines showing combination	*Percentages proficient* — Percentage of trend lines showing combination
Gap narrowed		
Both groups improved, Title I improved more	78%	82%
Title I improved, non-Title I did not change	11%	7%
Title I improved, non-Title I declined	7%	10%
Both groups declined, non-Title I declined more	2%	10%
Title I did not change, non-Title I declined	2%	0%
Total number of narrowing trend lines	*45**	*72†*
Gap widened		
Both groups improved, non-Title I improved more	81%	71%
Title I did not change, non-Title I improved	5%	14%
Title I declined, non-Title I improved	10%	5%
Both groups declined, Title I declined more	0%	10%
Title I declined, non-Title I did not change	5%	0%
Total number of widening trend lines	*21**	*21†*

Table reads: Of the trend lines that showed mean score gaps narrowing between Title I and non-Title I students, 78% narrowed because both groups improved but Title I students improved at a faster rate. Of the trend lines that showed mean score gaps widening between Title I and non-Title I students, 81% widened because both groups improved but non-Title I students improved at a faster rate.

*A total of 79 trend lines were analyzed using mean scores; 45 of these trend lines showed gaps narrowing, 21 showed gaps widening, and 13 showed no net change.

ÀA total of 98 trend lines were analyzed using percentages proficient; 72 of these trend lines showed gaps narrowing, 21 showed gaps widening, and 5 showed no net change.

Note: Percentages in each column do not always total 100% due to rounding.

When gaps *widened*, it was most often because both Title I and non-Title I students made gains, but non-Title I students improved at a faster rate. As shown in table 10, this was the case for 81% of the widening trend lines using mean scores and 71% using percentages proficient. In the other instances shown in table 10, achievement stayed the same or declined for Title I students but went up for non-Title I students, or decreased for both groups but at a greater rate for Title I students, or declined for Title I students and stayed the same for non-Title I students.

Size of Gaps

Even though gaps between Title I and non-Title I students have narrowed in many states, substantial gaps remain. We examined the size of the gaps in percentages proficient between Title I and non-Title I students in 2009 (or an earlier year, in a few cases). We did not analyze the size of mean score gaps; because states have different scoring scales on their tests, a comparison of mean scores across states would be a much more complex undertaking.

As shown in **table 11**, the size of these percentage proficient gaps varied greatly among states. Much of this variation stems from state differences in test difficulty and other test characteristics. In addition, states have set widely divergent cut scores for proficiency, which affect the apparent size of the gap, as already noted.

Percentage proficient gaps between Title I and non-Title I students amounted to less than 10 percentage points in several states with sufficient data and exceeded 30 points in a few states. In many states, the size of these gaps fell between these extremes.

Table 11. Number of states with various-sized gaps in percentages proficient between Title I and non-Title I students, 2009*

Size of gap in percentage points	Grade 4 reading	Grade 8 reading	High school reading	Grade 4 math	Grade 8 math	High school math
Less than 10	4	6	5	5	6	3
10ï 19	8	2	3	7	3	4
20ï 29	5	9	5	6	7	5
30ï 39	1	0	0	0	2	2
Number of states with data	*18*	*17*	*13*	*18*	*18*	*14*

Table reads: In grade 4 reading, the gap in percentages proficient between Title I and non-Title I students was less than 10 percentage points in four states, between 10 and 19 percentage points in eight states, between 20 and 29 points in five states, and between 30 and 39 points in one state.

*Data are from 2008 testing in Arizona for all grades, in California for grades 4 and 8, and in Missouri for high school. Data are from 2007 testing in California for high school.

The size of the gaps between Title I and non-Title I students often varied by grade level and subject. Differences in test difficulty are certainly one reason for these wide variations by grade, but other factors may also play a role. As noted above, smaller proportions of middle and high

school students than of elementary students receive Title I services; perhaps the Title I population is different at the higher grades.

Title I gaps have also narrowed at different rates in different states, subjects, and grades. In Maryland, for example, the gap between Title I and non-Title I students in grade 4 reading has narrowed at an average annual rate of 1.8 percentage points per year over the period analyzed. In Tennessee, the gap between Title I and non-Title I students in high school math has narrowed at a rate of 2.0 percentage points per year. In Pennsylvania, the Title I gap in high school math has narrowed at an average annual rate of 0.3 percentage points. Obviously, it will take longer to shrink gaps if improvement is occurring at a slower pace.

As a final analysis, we compared the size of the gaps between Title I and non-Title I students in 2009 (or an earlier year in a few states) with the size of gap between low-income and non-low-income students; these comparisons were made for every grade and subject with sufficient data in each of the 19 states studied. In addition, we separately compared the size of the Title I gap with the size of the African American-white gap and the Latino-white gap in these same states.

This analysis revealed that gaps between Title I and non-Title I students were generally smaller than those between low-income and non-low-income students in the 19 states studied. Specifically, the Title I gap was smaller than the low-income gap in 77% of the comparisons made of these two gaps.

Title I gaps also tended to be smaller in this group of states than gaps between African American and white students or between Latino and white students. The Title I gap was smaller than the African American-white gap in 85% of the comparisons and smaller than the Latino-white gap in 73% of comparisons.

Conclusion

Overall, Title I students have made gains in achievement since 2002, often improving at a greater rate than non-Title I students. Progress has also been made in narrowing achievement gaps

between Title I and non-Title I students. Even in instances where gaps widened, Title I students still made progress in most cases, but at a slower rate than non-Title I students.

Nevertheless, Title I students remain well behind non-Title I students in academic achievement. The existence of achievement gaps between Title I and non-Title I students is to some extent a reflection of the nature of the Title I program. Since many students are identified for Title I services precisely because they are low-achieving, they will perform, by definition, at lower levels than students not identified for Title I. And if students currently participating in Title I improve enough to no longer require services, then new students will be identified for Title I based on their low achievement. As long as there is a Title I program that targets students with low achievement, there will be some type of gap between Title I participants and those not participating.

At the same time, the goal of Title I is to raise achievement for participating students to proficient levels. Narrowing achievement gaps are an indicator of progress toward this goal.

Title I students are unlikely to become proficient learners without intensive efforts to address their academic and economic needs. For example, students in the types of higher-poverty schools served by Title I are often taught by less experienced or less qualified teachers. Title I students may lack access to rigorous academic courses and high-quality early childhood education, as well as other services. The pending reauthorization of Title I offers an opportunity to address these studentsô needs in more comprehensive ways that hold promise for greater gains in student achievement.

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Appendix—Details about Study Methods

The data for this study were analyzed using the following methods.

- ***Years analyzed and comparability of data.*** States were included in the trends analyses only if they had three or more consecutive years of comparable test data. Test data were not considered comparable if, during the period of analysis, a state had introduced new tests, changed its cut scores for proficient performance, or adopted other major changes in its testing program that would make year-to-year comparisons of test results invalid. Where possible, trends were analyzed going back to tests administered in 2001-02, the year NCLB was enacted. Where comparable data for 2001-02 were not available, we used the next available year. Generally, the trends analyzed end with tests administered in school year 2008-09. In a few cases, the trends end earlier. Arizona and California introduced new tests in 2009, so trends for these states end in 2007-08, except in high school, where trends in California end in 2006-07. Missouri introduced a new high school test in 2008-09, so high school trends in this state end in 2008. In Utah, math trends at all three grade levels end in 2007-08. We included trends from these four states because this is the first time we are reporting trends for the Title I subgroup, and we wanted to include as many states as possible.

- ***Subgroup size.*** States were excluded from a particular subgroup analysis if the number of test-takers in the Title I subgroup was too small to yield reliable results (fewer than 500).

- ***Subgroup comparisons.*** For accountability purposes, Title I students include: a) students who receive Title I services in schools that do not have schoolwide programs; and b) all students in schools with Title I schoolwide programs. Non-Title I students are those who do not receive Title I services or do not attend schools with Title I schoolwide programs. The analyses done for this study compared performance for the Title I subgroup with that of non-Title I students, using the Title I data provided by state departments of education.

- ***Grade levels analyzed.*** Trends in reading and math achievement were examined at grades 4, 8, and the high school grade tested for NCLB accountability in each state, which was usually grade 10 or 11. (Utah uses an end-of-course test of pre-algebra as its middle school test; students take the test after they have completed the appropriate course, so not all test-takers are in grade 8.)

- ***Mean scores and percentages proficient.*** The two indicators of achievement used for this studyð mean, or average, scores on each stateôs particular test, and percentages of students scoring at or above the proficient level of performanceð offer different ways of looking at achievement trends. Together, they can provide a fuller picture of the performance of a group of students. Typically, percentages proficient, which are the main indicator of progress under NCLB, show the proportion of students in the aggregate that have met or exceeded the cut score for proficiency on the state test. Percentages proficient are a useful indicator of whether students have mastered important knowledge and skills for their grade level. They present a problem, however, in measuring achievement gapsð namely, the apparent size of a particular gap may vary depending on

where a state has set its cut score for proficiency on its test.[2] Mean scores, by contrast, capture changes across the achievement spectrum, including performance well above or well below the proficiency cut score. Because mean scores are independent of cut scores, they avoid the problem of gaps appearing smaller or larger depending on the location of the cut score and are a better indicator of changes in gaps. A maximum of 16 states provided mean score data for the Title I subgroupð fewer than provided percentages proficientð so it is important to look at gap trends using both indicators.

- ***States included.*** Altogether, 19 states were included in at least some of the trends analyses in this study: Arizona, California, Colorado, Delaware, Idaho, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Hampshire, North Carolina, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, and Washington. A few of these states lacked mean score data, lacked sufficient comparable data for a particular grade/subject, or had too small of a Title I tested population for a particular grade/subject to allow a reliable trend to be determined.[3] Because the trends in this report are based on less than half of the 50 states, one should be cautious about assuming that the general patterns we found for the states studied would be consistent in the other states.

More detailed information about methodology for CEPôs student achievement studies is available in the Study Methods chapter of part 2 in this series of reports, *Slow and Uneven Progress in Narrowing Gaps* (CEP, 2010b).

[2]A fuller explanation of why the apparent size of gaps changes depending on the cut score can be found in CEPôs *Open Letter to the Member States of PARCC and SBAC*, available at www.cep-dc.org.

[3]One state, Nevada, had sufficient data but was omitted because it had unusual patterns in percentages proficient that could not be explained by the state contacts for this study.

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