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The Common Core Debacle

Results from 2019 NAEP and Other Sources

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PUBLIC POLICY RESEARCH

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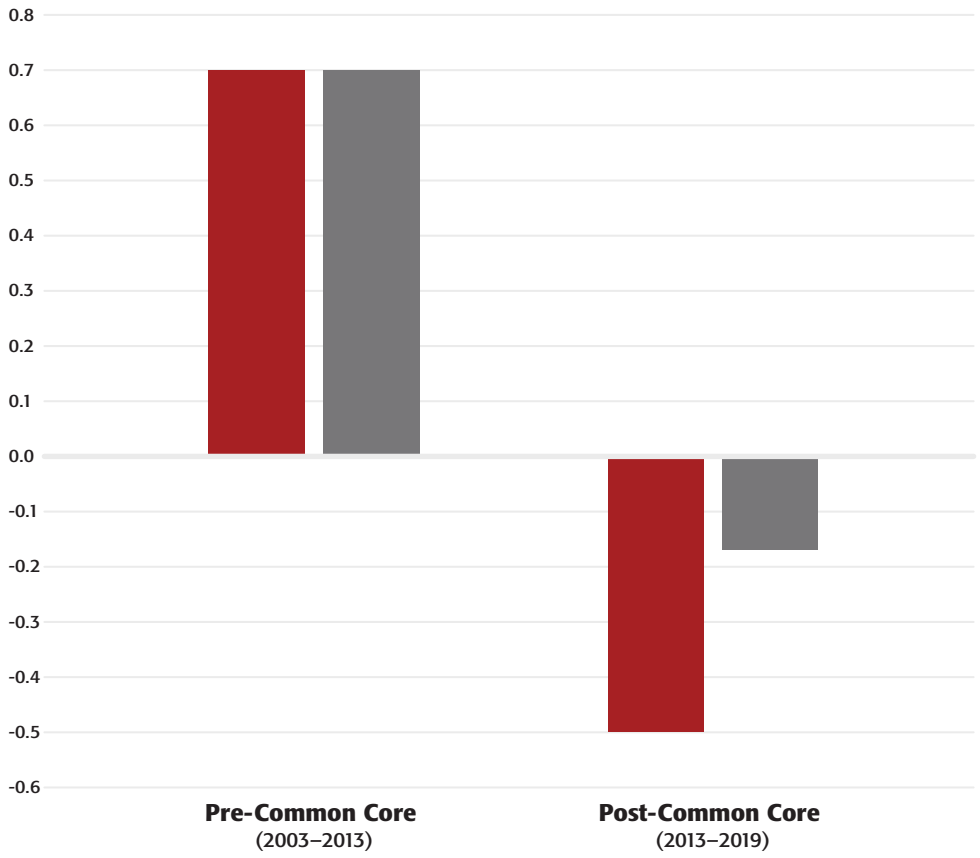
Executive Summary

The Common Core curriculum standards has its roots in a now four-decade-old K–12 reform movement motivated largely by concern over the international competitiveness of our students in math and science, subjects in which U.S. students perform at a substantially lower level than students from high-achieving countries in Asia.

During most of this period, U.S. students' skills gradually improved—especially in mathematics—but not at a pace sufficient to raise their international standing. The slow improvement in mathematics achievement occurred at approximately the same pace both before and after the 1990s launch of state curriculum standards, a regardless of other national policy changes.

Dissatisfied with the pace of improvement, most states were persuaded to set aside their own efforts for the promise of a single set of national curriculum standards: the Common Core. Substantive criticism of the national standards, especially by a group of scholars and experts associated with Pioneer Institute, found them not to be internationally competitive, weak on literary content, and based on misguided progressive instructional assumptions and dogmas. In response, Common Core proponents mostly circled the wagons and refused to address substantive criticism of the quality of the standards.

Summary Graph: NAEP Math Average National Annual Gain Pre and Post Common Core (Grades 8, 4)[1]



The results for Common Core are remarkably poor.

Now in the sixth year of implementation in most states, the results for Common Core are remarkably poor. According to the Program for International Student Assessment (PISA) in mathematics, not only do U.S. 15-year-olds still lag far behind students in top-performing countries, but they are also significantly below the average of developed countries in the Organization for Economic Co-operation and Development (OECD).

Even more shocking, the slow but relatively steady gains in student achievement that we had grown used to in recent decades have not only stopped since the implementation of Common Core, but we are now seeing the first sustained declines in student achievement since as far back as we have national test score trend data. The Summary Graph[2] highlights the stark contrast between the incremental achievement gains of the period before Common Core, averaging approximately 0.70 points per year at grade 8 and grade 4, and outright decline after Common Core was implemented in most classrooms (-0.50 per year at grade 8).

Test score declines are most acute for students in the bottom half of the student population.

Perhaps worst of all, the test score declines are most acute for students in the bottom half of the student population. U.S. students at the top, the 90th percentile, have continued to make gradual improvements that generally maintain the pre-Common Core trend line, ultimately neither helped nor harmed. But the farther behind students were before Common Core, especially those at the 25th and 10th percentiles, the more significant the achievement decreases have been. These declines appear to have wiped out the gains that lower-performing students made in the decade prior to Common Core.

Common Core's defenders have offered a grab bag of explanations and excuses for its sorry performance, ranging from the tried and true—need more funding!—to far-fetched attempts to blame a recession that has now been over for a decade. None of these excuses seem to hold much water. Public school funding has increased throughout the implementation of Common Core and stands at an all-time high. Attempts to blame the 2009 recession struggle not only with lack of supporting evidence, but even with contrary evidence. Overall student achievement continued to improve through the recession and for several years afterward, until Common Core was implemented in most classrooms. One claim is that students born during the recession are somehow feeling the effects many years later, but older students born before the recession have also seen their scores drop. And a comparably severe recession in the early 1980s did not result in similar declines in student achievement, neither at the time, nor years later. Lower-performing students generally improved in math during that period.

Summary analyses of results for several states reveal a broadly similar pattern. Large states, including California, Florida, New York, and Illinois, all performed better in the period before Common Core than afterward. Kentucky, an early implementer of Common Core starting in fall of 2011, compared to fall of 2014 for most states, still sees the same broad pattern of gains before turning into declines afterward. Massachusetts, a top-performer with fine curriculum standards, threw them out in favor of the untried Common Core and saw one of the largest downturns in math achievement, from relatively large gains before to almost equally large declines afterward.

Common Core will not be easy to dislodge because it represents the common curricular assumptions and conventional wisdom of the educational establishment. But the historic declines we are now seeing, especially for the most vulnerable students, simply cannot be allowed to continue. Common Core turned federalism on its head: instead of state "laboratories of democracy" competing and learning from each others' successes and failures, a federally incentivized national cartel of states adopted the education establishment's curriculum standards wish list and dragged down scores for the nation as a whole.

Instead of state "laboratories of democracy"... a federally-incentivized national cartel of states adopted the education establishment's curriculum standards wish list

It's time for the "uber standards solution" mindset to end and to encourage states to again try different things; perhaps some will even allow local systems and charters to break the curricular mold. It would certainly be far more in line with the American spirit and culture than continuing to impose a uniform set of poorly-designed standards from on high on classrooms across the country.

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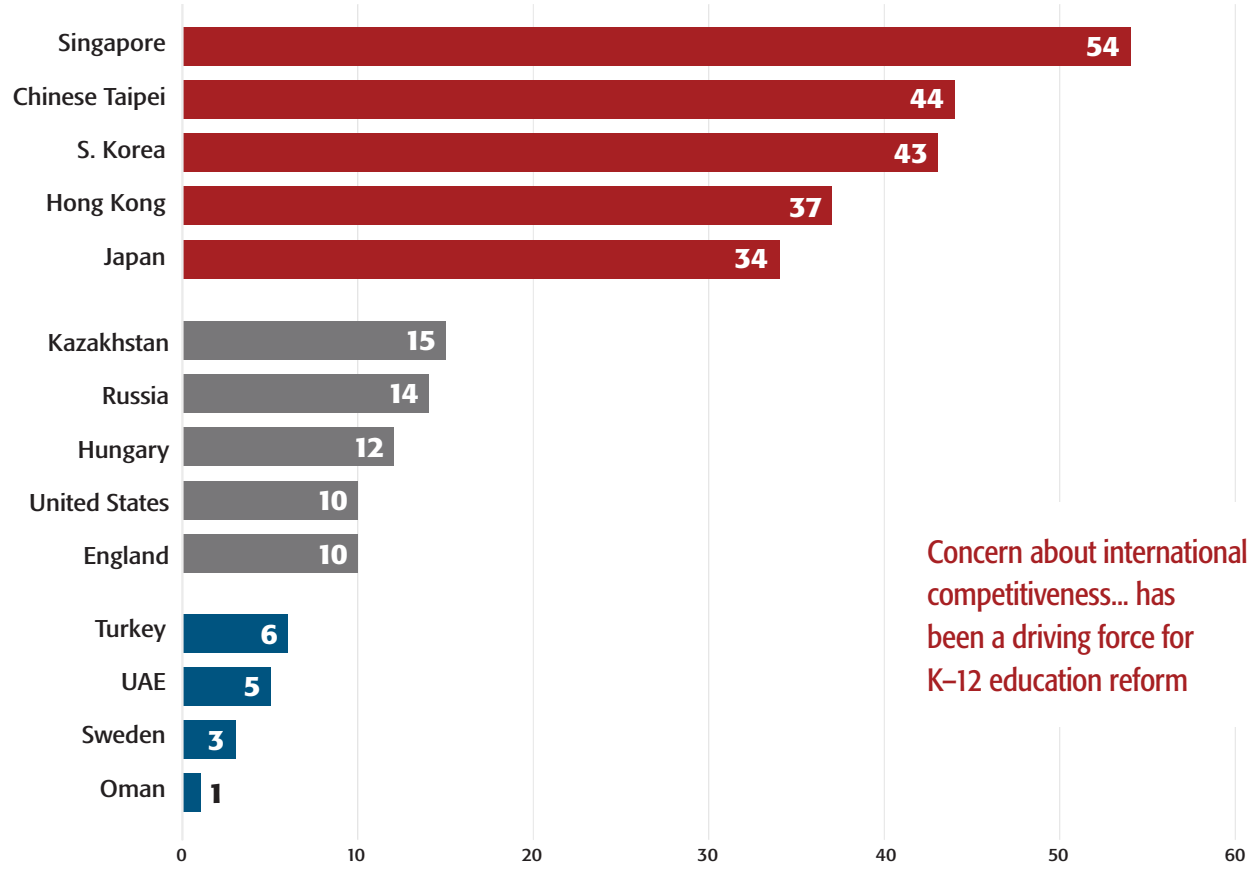
Introduction

In announcing the official launch of the initiative to develop the Common Core national curriculum standards on July 1, 2009, Governor Jim Douglas of Vermont, vice chair of the National Governors Association (NGA) boldly declared that "[t]o maintain America's competitive edge, we need all of our students to be prepared and ready to compete with students from around the world."[3] The announcement hearkened back to the seminal 1983 *A Nation At Risk* report nearly three decades earlier, which launched the modern reform movement with the goal of raising overall K–12 academic achievement. It too called for reforming elementary and secondary education and warned:

> We live among determined, well-educated, and strongly motivated competitors. We compete with them for international standing and markets, not only with products but also with the ideas of our laboratories and neighborhood workshops… Learning is the indispensable investment required for success in the "information age" we are entering.[4]

The Common Core announcement indicated that the new initiative—coordinated by NGA and its partners the Council of Chief State School Officers (CCSSO) and the business-backed Achieve, Inc., all based in Washington, D.C.—would be "both rigorous and internationally benchmarked".[5] With strong support and encouragement from the new Obama administration, 49 states and U.S. territories initially signed on to the new initiative.

Figure 1: TIMSS Grade 8 Percent of Students Attaining Math "Advanced" Level (2015)
(Solid Foundation for Math-Based, Post-Secondary STEM Degree)[6]



The concern about the international competitiveness of our students' skills in math and science and its impact on our economy has been a driving force for K–12 education reform for more than three decades. The impetus for much of this concern, which is well-founded, has come from the business community and is based on international studies of student achievement. While press reports on the results of these international comparisons sometimes describe the performance of U.S. students as falling in the "middle of the pack" among nations, such accounts understate the scope of the problem.

Figure 1, based on a data from the respected Trends in International Mathematics and Science Study (TIMSS), graphs the percentage of 8th graders that have achieved a sufficient foundation in mathematics to succeed in a challenging high school math curriculum that will prepare them for math-based science, technology, engineering or math (STEM) post-secondary degrees.[7] While the U.S., with 10 percent of its students achieving this level of competence, is in the "middle" group of countries, our absolute performance on this measure is actually closer to the bottom group of countries than it is to the top group. Singapore (54 percent) prepares more than five times as many of its students to succeed at this level as does the U.S., while Japan (34 percent) prepares more than three times as many to succeed at this level than we do. It is worth noting that the top-performing countries also typically prepare a higher proportion of all of their students to at least a "Basic" level of competence by this age, so they are not succeeding only with their most talented students.

In the 1990's and 2000's, states attempted to raise student achievement through state-wide adoption of very detailed, grade-by-grade specifications ("standards") for curriculum and instruction, along with aligned student assessments to monitor and enforce their implementation in every school. Previously, most states had left such detailed decisions about curricular content and teaching to local school systems. That variation, with different states making different decisions on the extent of state government regulation of local curriculum and testing, ended after Congress mandated state curriculum standards in 1994 as a condition of receiving federal K–12 education funds.[8]

Figure 2: NAEP Math Long-Term Trend 1978–2012 (13 year olds)[9]

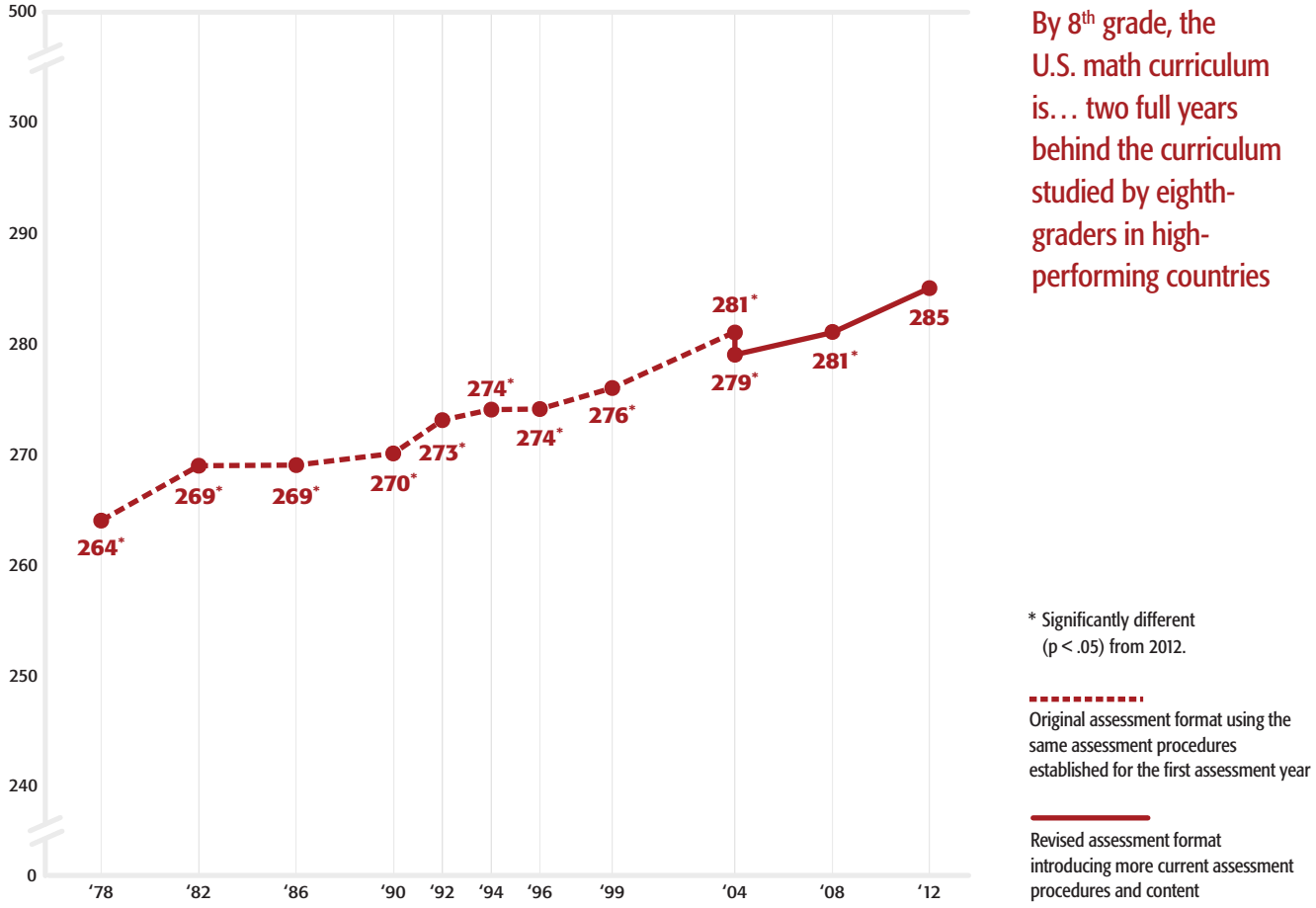


Figure 2 charts the slow, incremental improvement in student math scores at age 13 (typically, 8th grade) on the National Assessment of Educational Progress (NAEP) in the decades leading up to the implementation of Common Core. Two points are worth highlighting. First, the improvement, though slow, is remarkably steady over the entire period, with no sustained multi-year declines. Second, the gradual pace of improvement predated the launch of the "standards" movement in the early 1990's, going back at least as far as we have NAEP math data to the 1970's. The gains continue after 1994 and the new federal curriculum standards requirement, with no clear impact on the pace of improvement.

Despite these small gains in mathematics over three decades, U.S. students' international standing did not improve significantly, remaining low relative to students in high-performing countries. This left the business community and policymakers who were concerned about international competitiveness unsatisfied and searching for a new approach to boost achievement at a faster pace.[10]

By the late 2000's, an increasing number education analysts believed they had identified the key obstacle to achieving larger, faster gains in student achievement: there was still too much variation in perceived quality—this time among states—in curriculum standards and testing. The Fordham Institute's influential report, *The Proficiency Illusion*, declared: "Standards-based education reform is in deeper trouble than we knew…It's in trouble for multiple reasons. Foremost among these: on the whole, states do a bad job of setting (and maintaining) the standards."[11] The solution, they proposed, was "national standards for educational achievement."[12] The report offered no argument for why, if federal mandates for state curriculum standards and testing had resulted in standards of uneven quality and no major improvement, national curriculum standards and testing would be of high quality and result in major improvement. Internationally, students in countries with national curriculum standards do not tend to perform any better than students in countries that lack them.[13]

While there is no evidence to support the notion that nationalization of curriculum standards and testing improves student achievement, differences in curriculum and instruction do matter. The lower performance of American students when compared to those in top-scoring Asian countries has

often—incorrectly—been blamed entirely on cultural differences. But much of the fault actually lies with U.S. math curriculum and instruction. Put simply, by 8th grade, the U.S. math curriculum is "…two full years behind the curriculum studied by eighth-graders in high-performing countries"; students in top-performing countries largely complete the content of high school Algebra 1 and Geometry by the end of 8th grade, while most U.S. students begin to study these topics in 9th grade.[14] The elementary and middle grades math curriculum in the highest achieving countries does not simply move faster through all the same math content as the U.S. curriculum. Rather, at each grade the curriculum in high-performing countries is more focused on the math skills that are essential for success at the next grade, expects students to master these skills so less time is wasted on review at later grades, and emphasizes different instructional methods. To address the math curriculum competitiveness gap, the NGA, CCSSO, and Achieve, Inc., proposed in 2008:

> **Action 1:** Upgrade state standards by adopting a common core of internationally benchmarked standards in math and language arts for grades K–12 to ensure that students are equipped with the necessary knowledge and skills to be globally competitive.[15]

On June 2, 2010, less than a year after the public announcement of the initiative to develop the Common Core, the final curriculum standards were published—untested and unvalidated. Common Core, which largely packaged the views and biases of the educational establishment and labeled them "reform," was unsurprisingly embraced wholeheartedly by that same establishment. State adoption of the Common Core proceeded remarkably quickly for a change of this magnitude, with most state boards approving the curriculum standards in 2010 or 2011. Implementation, however, took significantly longer. Most states didn't fully implement the new curriculum standards in classrooms until the fall of 2014, with the first Common Core tests administered in the spring of 2015.

Despite Common Core's quick and wide adoption, a vocal minority of scholars and experts have argued since the release of the standards that they are flawed and would not be successful. Those in this group included James Milgram, Sandra Stotsky, Ze'ev Wurman, Williamson Evers, myself and others. These critiques came at the issue from different angles, some focused on specific content concerns and others on cross-cutting design issues.

My own analysis[16] noted that despite the goal of matching the accelerated mathematics curriculum of high-performing countries, the main track in the final Common Core math standards remained two years behind our international competitors by the end of 8th grade—the same as before Common Core! Instead of accelerating the math curriculum, the design of the Common Core math standards assumed and promoted certain flawed progressive instructional assumptions and dogmas. Since the math standards generally rejected the proven approach of high-achieving Asian countries, the final Common Core standards no longer claimed to be "internationally benchmarked" and indicated instead that they were merely "internationally informed."

The main track in the final Common Core math standards remained two years behind our international competitors by the end of 8th grade... Common Core...assumed and promoted certain flawed progressive instructional assumptions and dogmas.

The Common Core English standards also incorporated key progressive elements, such as a reduction in challenging, classic literary content and its replacement with simpler informational text supposedly intended to align with a student's future activities in the workforce.[17] My analysis also referenced renowned education scholar Jeanne S. Chall's review of a 100 years of research on teaching and learning, in which she concluded that progressive approaches generally resulted in lower student achievement than more classical approaches, with the different impact of these approaches more pronounced "…for those students who were less well-prepared."[18] Unfortunately, so far, through what is now the sixth year of Common Core implementation in most U.S. classrooms, that is precisely what we have seen.

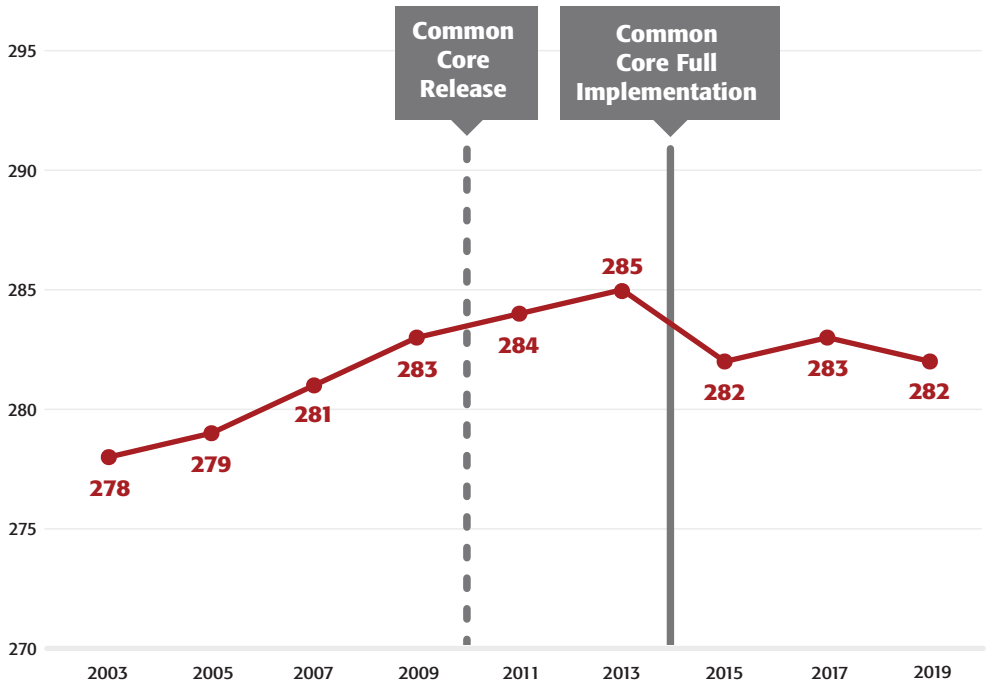
Common Core Results: National Math

Increasing the international competitiveness of American students in mathematics and science has been a key goal of K–12 education reform for several decades, including a goal of the Common Core math curriculum standards. The first international comparison of mathematics achievement that has taken place following a substantial number of years of Common Core implementation indicates that U.S. students continue to perform poorly. According to the Program for International Student Assessment (PISA)[19], developed by the Organization for Economic Cooperation and Development (OECD), U.S. 15-year-olds ranked 31st out of 37 mostly developed OECD countries in 2018.[20] U.S. students also performed significantly below the international OECD average. Students in China and Singapore, which are not in the OECD but also participated in the PISA study, performed significantly better than even the top OECD nations.[21]

The first international comparison... following a substantial number of years of Common Core implementation indicates that U.S. students continue to perform poorly.

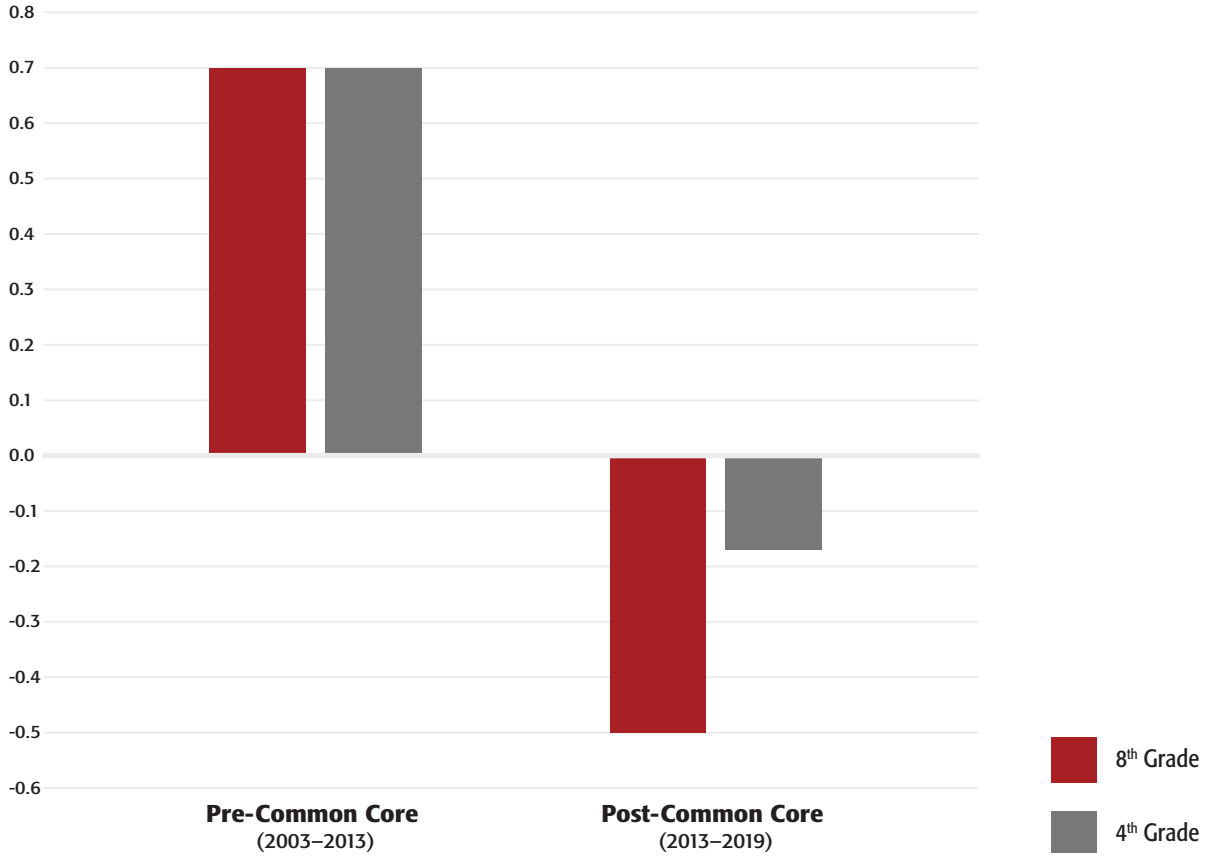
Until recently, U.S. students had made slow but relatively steady improvement in mathematics achievement despite not appreciably improving their international competitiveness. That is no longer the case since the implementation of Common Core. Figure 3 shows the trend in average grade 8 national student achievement in math on the National Assessment of Educational Progress (NAEP).[22] Scores increased by 1 to 3 points every two years from 2003 until 2013, the last NAEP test administration before widespread classroom implementation of Common Core in fall of 2014. Since 2013, average scores have generally declined and remain at a level that is statistically significantly lower than before Common Core (95 percent confidence level).

Figure 3: NAEP Math National Average Scale Score 2003–2019 (Grade 8)[23]



Since 2013, average scores have generally declined and remain at a level that is statistically significantly lower than before Common Core.

Figure 4: NAEP Math Average National Annual Gain Pre and Post Common Core (Grades 8, 4)[24]



It is informative to compare average annual improvement before Common Core and afterward. Figure 4 illustrates that gains averaged a little less than three quarters of a scale point per year at grades 8 and 4 before implementation of Common Core, while afterward we have seen average annual declines of half of a scale point at grade 8 and a little less than a quarter of a point at grade 4. At both grades, the total gain before Common Core was statistically significant and the total decline since Common Core was also statistically significant (both at 95 percent confidence level).

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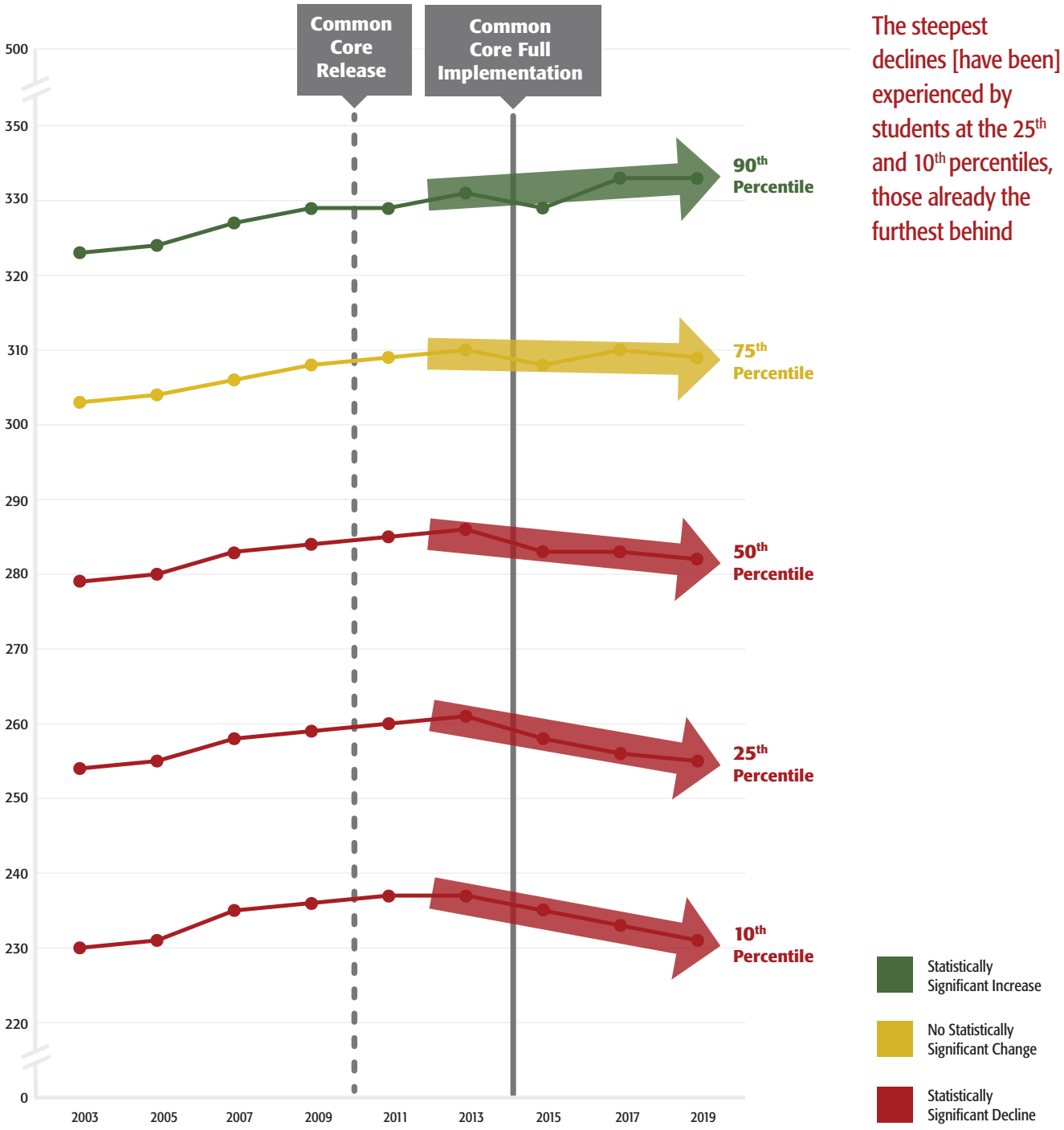
When average gains for all students are disentangled to look at higher- and lower-performing students, we can see significantly different results for these subpopulations. Figure 5 provides this data from NAEP at grade 8 in mathematics. It shows that students in the highest-performing group (90th percentile), after a possible initial hiccup immediately after Common Core implementation, have largely recovered and reestablished a very gradual upward trend line that is similar to their rate of improvement before Common Core (green arrow indicates that the slight improvement is statistically significant, at 95 percent confidence level.) The trend line for these students is largely unaffected by Common Core, neither substantially helped nor substantially hurt.

The NAEP assessment is not designed to answer questions about why a trend may be occurring. My own anecdotal experience based on conversations with parents and educators in different states is that more affluent parents, who on average tend to have higher-performing students, are either spending more time themselves or paying for outside tutoring to compensate for the difficulties their children encounter in Common Core. Less anecdotal is that tutoring has expanded substantially over the course of Common Core implementation. In the five years between 2014 and 2019, the online tutoring services industry has increased faster than the economy overall, an average of 6.9 percent per year.[25] Further, the total private tutoring market is currently projected to accelerate at a compound annual growth rate of 7.64 percent between 2019 and 2023, for $7.37 billion in incremental growth.[26]

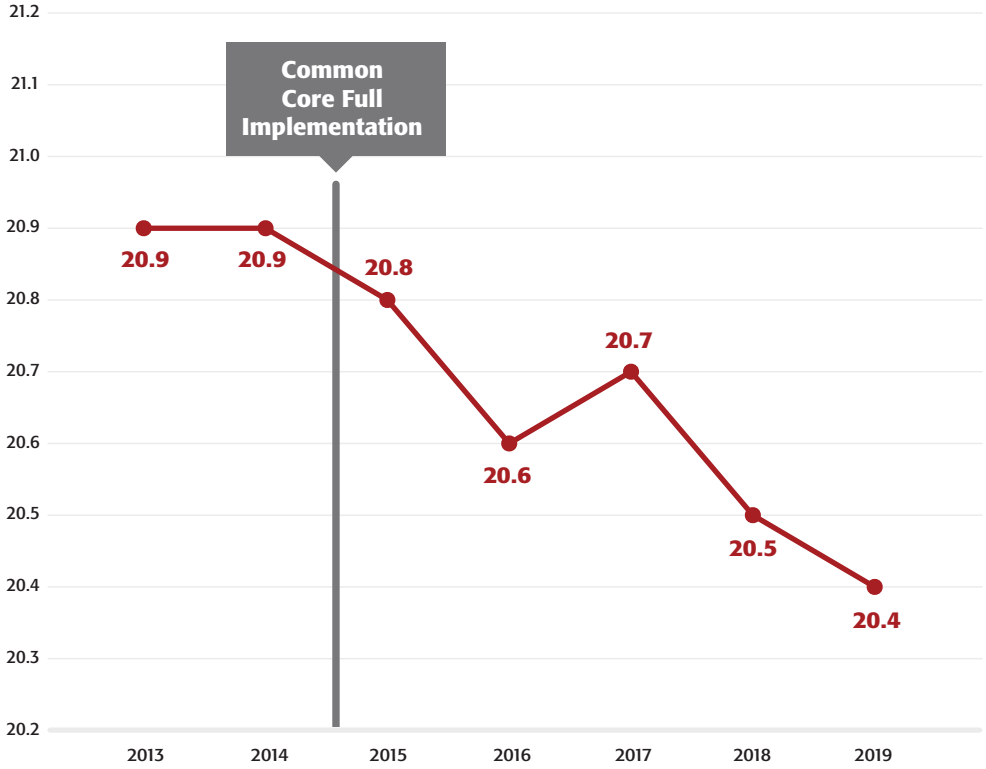
Figure 5: NAEP Math Average Scale Score at Percentiles 2003–2019 (Grade 8)[27]



The steepest declines [have been] experienced by students at the 25th and 10th percentiles, those already the furthest behind

Students who were not already top-performers before Common Core have fared less well since its implementation. Grade 8 math achievement for students at the 75th percentile, which was improving gradually before Common Core, has plateaued and remained at about the same level (yellow arrow indicates no statistically significant change since Common Core, at 95 percent confidence level). Students who were average (50th percentile) or below before Common Core have declined since its implementation, with the steepest declines experienced by students at the 25th and 10th percentiles, those already the furthest behind (red arrows indicate statistically significant declines since Common Core, at 95 percent confidence level). As discussed above in the Introduction, this pattern is what we would expect to see based on the design of Common Core and Jeanne S. Chall's comprehensive review of the relevant research.[28]

Figure 6: ACT Math National Average Score 2013–2019[29]



NAEP results are not available for grade 12 over the period of Common Core's implementation (and there are some questions about the motivation of students taking NAEP at that level). ACT college entrance examination results, however, are available. While the ACT results are not based on a nationally representative sample of students, they are nevertheless illustrative. Figure 6 charts the trend in average ACT math scores each year since 2013. On this indicator as well, we see a sustained decline since the implementation of Common Core.

Common Core Results: National Reading

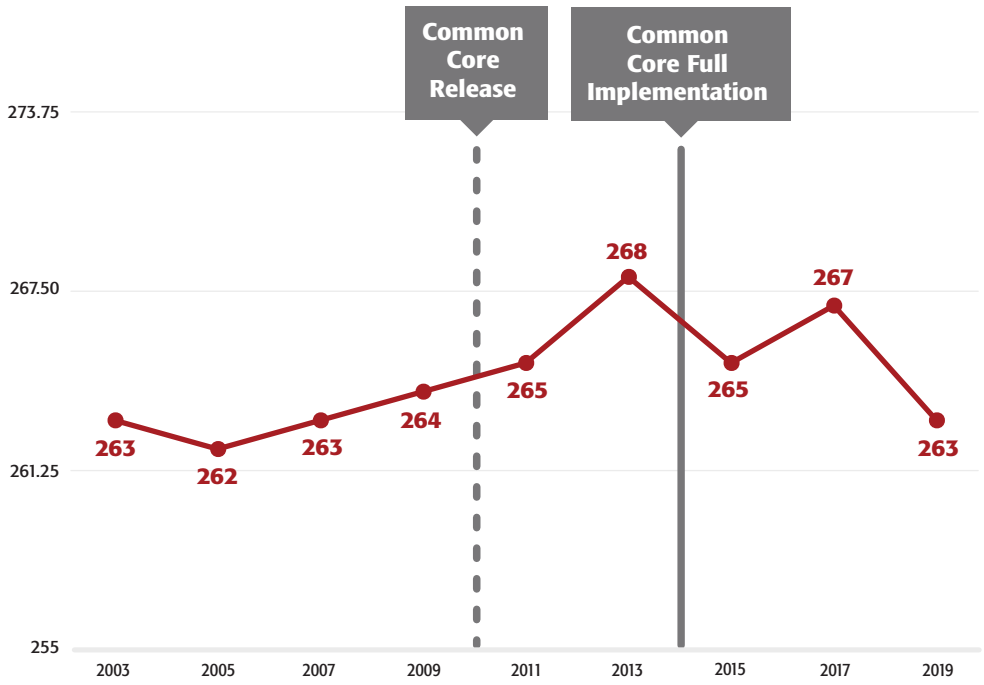
International competitiveness has historically been less of a concern in reading. According to the OECD's PISA 2018 international comparison in reading[30], U.S. 15-year-olds ranked 13th among all participating countries, a better showing than in math.[31] Interestingly, Singapore and China, which rank at the top in PISA math, also rank at the top in reading.[32]

National reading achievement results on the NAEP are broadly similar to the results in math. Figure 7 shows the trend in average national grade 8 student achievement in reading on the NAEP.[33] in the decade before implementation of Common Core (2003–2013); except for a small exception in a single year (2005), achievement typically improved by 1–2 points every two years. Since 2013, the trend in reading has been uneven but scores have generally declined and remain at a level that is statistically significantly lower than before Common Core (95 percent confidence level).

Figure 8 compares the average annual national gain at grades 8 and 4 before Common Core and afterward. Reading gains averaged about half a scale point per year before implementation of Common Core, while afterward there are average annual declines of approximately three quarters of a point at grade 8 and one quarter of a point at grade 4. At both grades, the total gain before Common Core was statistically significant and the total decline since Common Core was also statistically significant (both at 95 percent confidence level).

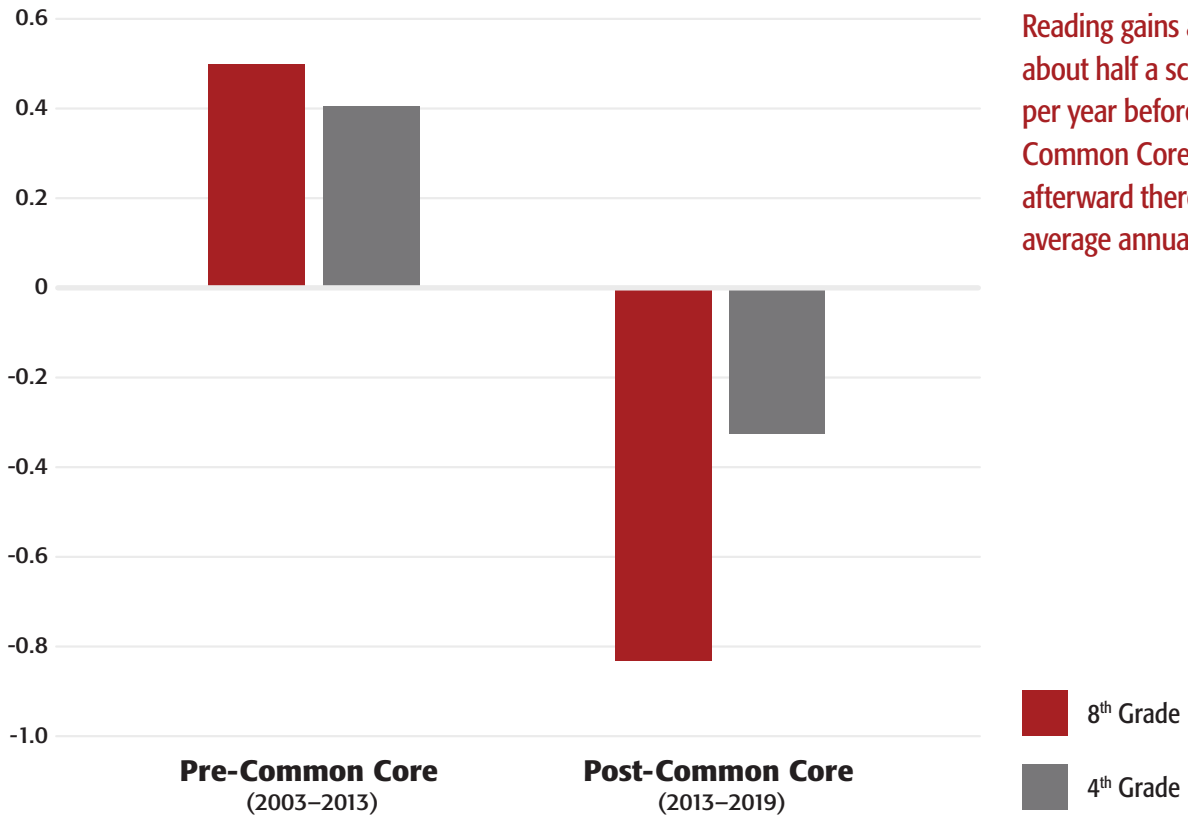
Disentangling average gains for all students to examine the results for higher- and lower-performing students reveals substantial differences for these subpopulations. Figure 9 illustrates this data for NAEP national grade 8 reading results. Students in the highest-performing group

Figure 7: NAEP Reading National Average Scale Score 2003–2019 (Grade 8)[34]



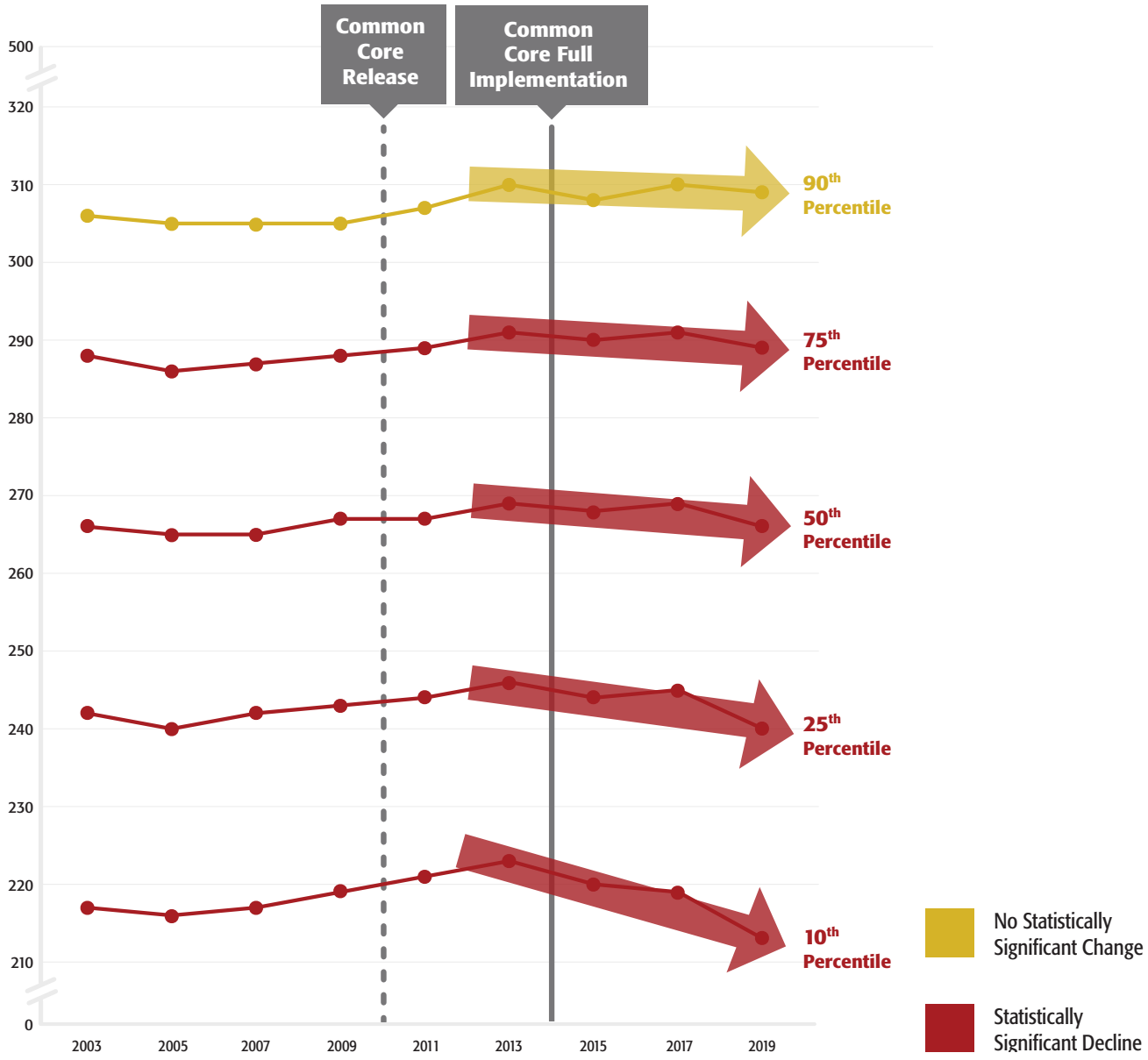
The trend in reading has been uneven but scores have generally declined

Figure 8: NAEP Reading National Average Annual Gain Pre and Post Common Core (Grades 8, 4)[35]



Reading gains averaged about half a scale point per year before... Common Core, while afterward there are average annual declines.

Figure 9: NAEP Reading Average Scale Score at Percentiles 2003–2019 (Grade 8)[36]

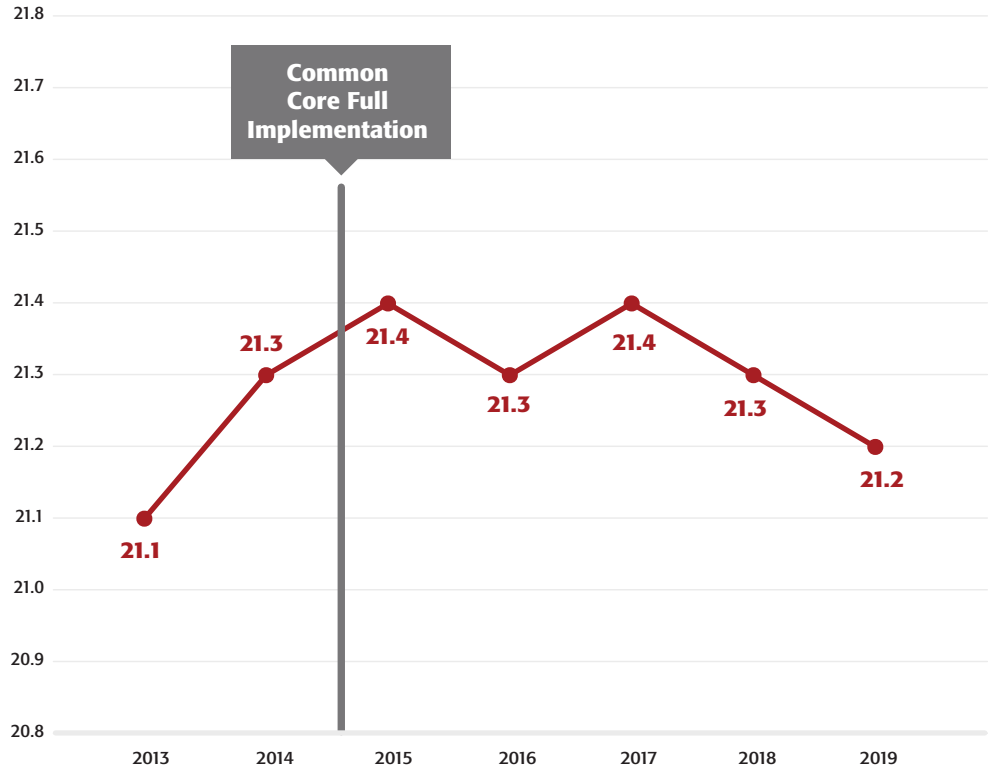


(90th percentile) are no longer improving and have remained at about the same level (yellow arrow indicates no statistically significant change since Common Core, at 95 percent confidence level). Students who were not already such high-scorers before Common Core have performed even less well since its implementation. Students at the 75th percentile and below before Common Core have declined since its implementation, with the sharpest declines by students at the 25th and 10th percentiles, those previously the furthest behind (red arrows indicate statistically significant declines since Common Core, at 95 percent confidence level). As discussed in the Introduction, these are the results we should expect based on the design of Common Core and Professor Chall's comprehensive review of the relevant research.[37]

The sharpest declines [have been] by students at the 25th and 10th percentiles, those previously the furthest behind.

Again, NAEP results are not available for grade 12 since the implementation of Common Core (and there are questions about the motivation of participating students). There are results available from the ACT college entrance examination. While the ACT results are not for a nationally representative sample of students, they are nevertheless illustrative. Figure 10 charts

Figure 10: ACT Reading National Average Scores 2013–2019[38]



the trend in average ACT reading scores since 2013. Unlike the NAEP reading results, this indicator of reading achievement does not show a clear trend after the implementation of Common Core. It is beyond the scope of this analysis to investigate possible reasons for this divergence, which may involve other curricular trends, specific features of the ACT reading test or student sample, or other factors.

Common Core Excuses Don't Compute

The typical excuse offered by Common Core defenders for the poor results that began appearing soon after its implementation in most classrooms is to claim inadequate funding. However, the U.S. spends more per student than nearly all developed countries in the world. According to a recent international comparison of K-12 education spending, the U.S. ranks second out of 27 OECD countries in annual per student expenditure and spends $3,300 above the average.[39]

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Further, from the 2012/13 school year through the 2018/19 school year (which includes Common Core implementation), U.S. public school spending per student increased by approximately 10.5 percent in constant dollars, from $11,552 to $12,760 (not including capital expenditure).[40]

In the years immediately before Common Core was implemented in most classrooms, between 2008/09 and 2012/13, per-student public school spending was cut by approximately 5.2 percent due to the economic recession, yet student achievement mostly continued its prior upward trajectory. Sustained decreases in student achievement occurred after 2013, when full implementation of Common Core began in most classrooms and despite coincident increases in spending!

Other defenders of Common Core have attempted to develop more creative explanations for the poor results. The president of the strongly pro-Common Core Thomas B. Fordham Institute has hypothesized that lower student achievement since 2013 is a multi-year delayed effect of the 2009 economic recession, impacting test scores of students born during that period many years later when they are tested on NAEP at grade 4 (roughly 2019). Based on this hypothesis, he predicted before the 2019 NAEP scores were released that scores at grade 4 would be worse but, "if we're lucky," test scores might increase at grade 8.[41] However, after the 2019 NAEP results were released and scores declined again at grade 8 as well as grade 4, he continued to blame the "lingering effects" of the recession that occurred ten years earlier.[42]

Sustained decreases in student achievement occurred after 2013... despite coincident increases in spending!

Even if we set aside the continued decline at grade 8,

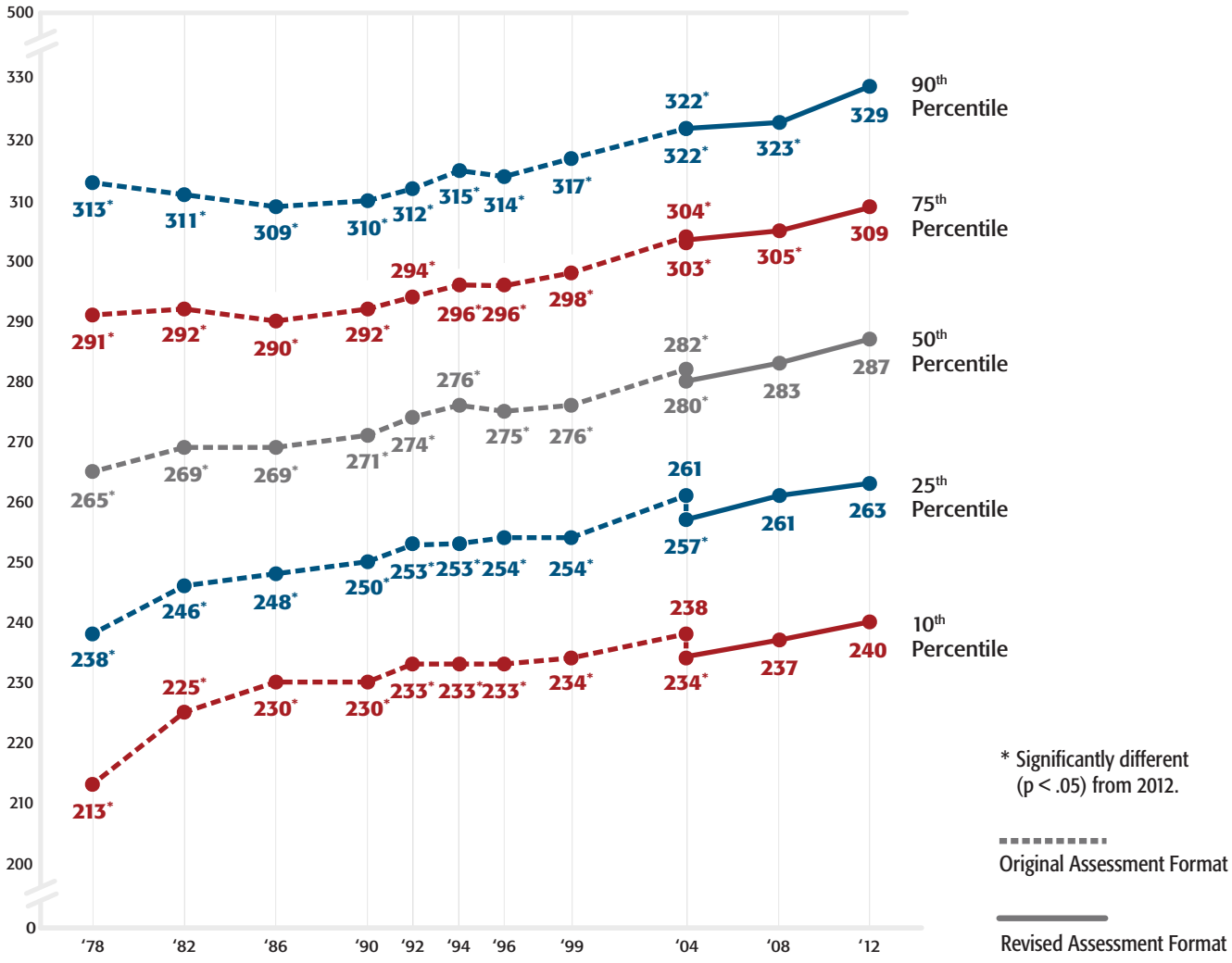
whose population is composed of students born before the last recession, there are many additional problems with this hypothesis. First, no research is cited to support such a large-scale, long-delayed negative achievement effect based on birth during a recession. We know from an increasing body of research that children's brains are not "fixed" in any determinative sense at birth or even in the first couple of years of life, but continue to develop into their 20s[43], suggesting the potential for resilience to temporary recessionary phenomena. Findings from rigorous research on the impact of recessions on student achievement indicate that the negative impact is not the same in all school districts, it occurs during the recession—not only afterward—and it is tied to concrete factors, such as reductions in teaching staff resulting from decreased revenues.[44] If such factors had negatively impacted overall NAEP achievement scores during the most recent recession, we should have seen an effect before full implementation of Common Core, such as in 2008/09, 2010/11, and possibly 2012/13—but NAEP scores generally increased during those years.

In contrast to the sustained achievement declines... in the lower half of the student achievement distribution since the adoption of Common Core, there was no consistent decline after the 1982 recession.

Second, while no two recessions are exactly alike, we have countervailing evidence on NAEP from the last comparably severe recession—the double-dip recession in 1980/1982. While the annual unemployment rate peaked at 9.9 percent in 2009 during the recent recession, the rate reached 10.8 percent during the 1982 recession. Median household income in constant dollars was also lower during the recession in the 1980's than during the recent recession.

Yet, in contrast to the sustained achievement declines in both math and reading in the lower half of the student achievement distribution since the adoption of Common Core, there was no consistent decline after the 1982 recession. Figure 11 shows increases after

Figure 11: NAEP Math Percentile Score Trends from 1978–2012 (13 year olds)[45]



1982 in math achievement for 13-year-old students on the NAEP long term trend assessment, especially for students in the bottom half of the achievement distribution. Math results for 9-year-olds and 17-year-olds on the same NAEP assessment also generally showed increases for students in the bottom half of the achievement distribution.

The NAEP long-term trend assessment in reading does show declines in achievement for 9-year-olds for the lower half of the student distribution between 1980 and 1990, and there were similar reading declines for 13-year-olds in the 10th percentile from 1988 to 1994, and for 17-year-olds in the bottom quarter of the population from 1988 through the 1990s. However, for two reasons these declines in reading do not advance the hypothesis that substantial recessions cause declining student achievement years later.

First, there is no reason to think that such an effect would negatively impact both math and reading after the recent recession but only impact reading and not math after the 1982 recession. If the recessionary effect is real for the overall population, it should be expected to impact math as well as reading.

Second, there is a more plausible alternative explanation for the decline in NAEP reading achievement that began in the 1980s and continued into the 1990s. Starting in the early 1980s, the progressivist "whole language" movement—which avoided systematic phonics instruction for initial reading instruction—increasingly dominated reading instruction in much of the country.[46] One would expect to see a negative impact on achievement from this misguided instructional philosophy first with younger students, with consequences for older students appearing later as students advance in grade level. That is exactly what we see in the NAEP reading results of this period—declines throughout the 1980's for 9-year-olds, followed by declines for older students in the late 1980's and 1990's. Professor Chall noted in a 1991 interview that "[f]ourth-grade reading scores went up in the 1970's when there was more teaching of skills and phonics…[t]hey began to go down in the 1980's when schools started switching to whole language."[47] If professor Chall was correct, then neither reading nor math achievement results on the NAEP after the 1982 recession support the hypothesis.

The bottom line is that this far-fetched hypothesis is unlikely to be correct.

Another response from Common Core advocates has been to point to one or two (of very few) states that have managed to raise student achievement since the advent of Common Core and exclaim: see, it's possible! But the criticism of Common Core is not that its negative effects will always, under any circumstances, outweigh all other factors impacting student achievement. The question is whether it is generally helpful in raising student achievement or if it is generally harmful. This is answered by examining the overall of impact of Common Core—the only major national education reform adopted during this time period—across the states. Touting, after the fact, the performance of a particular state or territory that managed to increase student achievement during this period is likely just confounding the impact of Common Core with idiosyncratic effects that are unique to that jurisdiction. For example, Common Core advocates have held up as a positive "bright spot" the rise in student achievement in Washington, D.C.[48], but this is a district where: a) nearly half of all public school students are enrolled in semi-independent charter schools, and b) demographic trends are resulting in a reduced proportion of students from a lower-income or minority background.[49]

Quibbling about what happened and its causes in a particular state or school district doesn't really address the issue. Common Core advocates must be able to defend the *national* results for this *national* reform. They can't.

Quibbling about what happened... in a particular state or school district doesn't really address the issue. Common Core advocates must be able to defend the *national* results. They can't.

Common Core Results: State Sample

This section includes graphs comparing average annual NAEP achievement gains before and after implementation of Common Core for a number of illustrative states. California, Florida, New York and Illinois are included because they were the largest states to adopt Common Core. Kentucky is here because it was the first to implement Common Core. Massachusetts was a high-performing state that replaced its well-regarded curriculum standards with Common Core, so it too is included. Georgia is also included for additional geographic coverage.

As a group, the results in these states generally reflect the national results, though there are some differences and a couple of noteworthy highlights. Kentucky's longer implementation—due to an earlier start—does not yield substantially different results from the rest of the states. Massachusetts saw the largest difference in its math gains, from relatively large increases before to relatively large decreases after Common Core.

California

California's state board adopted Common Core on August 2, 2010[50], and implemented it fully in classrooms starting in fall of 2014.

As illustrated in Figure 12, California's average annual math achievement gains before Common Core were substantial, a little over three quarters of a point at grade 8 and a little over half a point at grade 4. After Common Core, average math gains declined to almost nothing at grade four and actually fell at grade eight.

Figure 13 illustrates California's average annual reading achievement gains before and after Common Core. Average gains before Common Core were over one point per year at grade 8 and nearly three quarters of a point at grade 4, declined substantially to approximately negative half of a point at grade 8, but remained over one half per year at grade 4.

Figure 12: California NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[51]

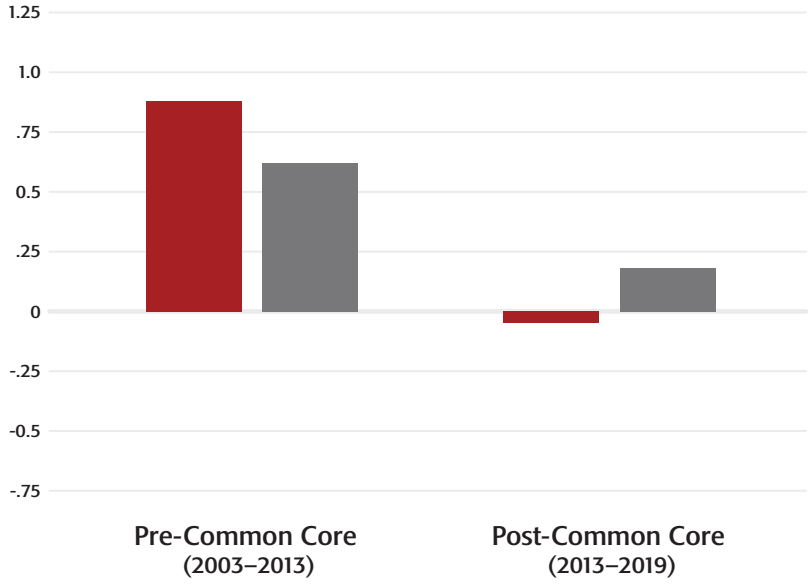
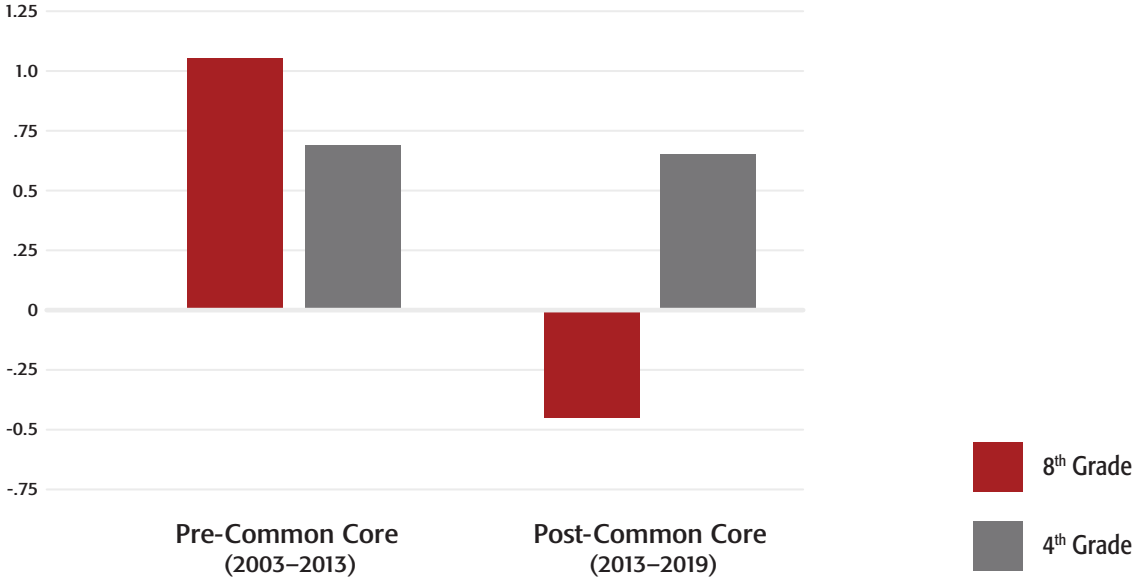


Figure 13: California NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[52]



Florida

Florida's state board adopted Common Core on July 27, 2010[53], and implemented it fully in classrooms starting in fall of 2014.

Figure 14 illustrates Florida's average annual math achievement gains before Common Core of nearly 1 point per year at grade 8 and over three quarters of a point at grade 4. Grade 8 declined substantially to close to negative half of a point, though grade 4 remained close to three quarters of a point.

Figure 15 shows substantial declines in Florida's average annual reading gains, from over three quarters of a point at grade 8 and nearly a full point at grade 4 before Common Core, to close to negative half of a point at grade 8 and 4 after 2013.

Figure 14: Florida NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[54]

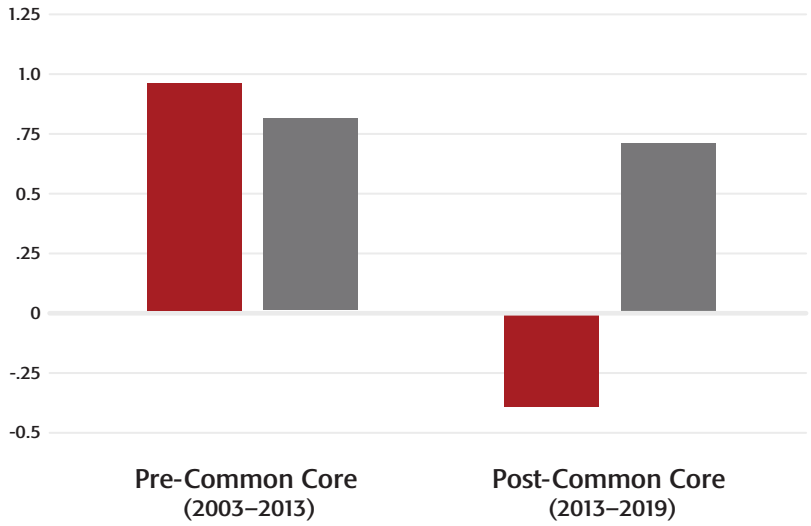
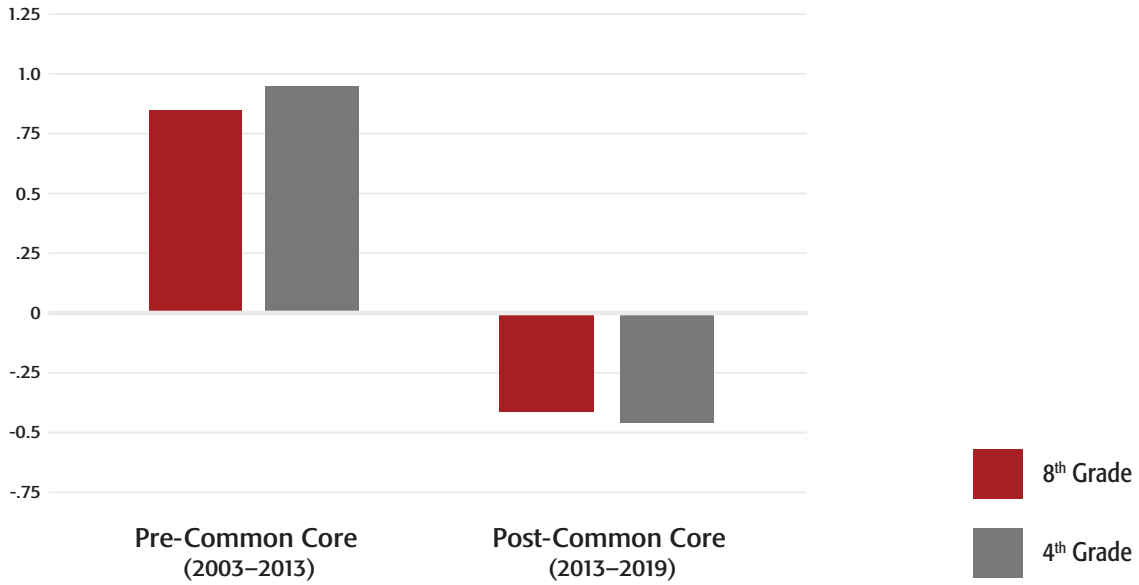


Figure 15: Florida NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[55]



Georgia

Georgia's state board adopted Common Core on July 8, 2010[56], and implemented it fully in classrooms starting in fall of 2014.

Figure 16 illustrates Georgia's average annual math achievement gains before Common Core of nearly one point per year at grades 8 and 4, declining after Common Core to nearly zero at grade 8 and worse than negative one quarter at grade 4.

Figure 17 illustrates Georgia's average annual reading achievement gains before Common Core of approximately three quarters of a point per year, declining to worse than negative one quarter at grade 8 and worse than negative half of a point at grade 4.

Figure 16: Georgia NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[57]

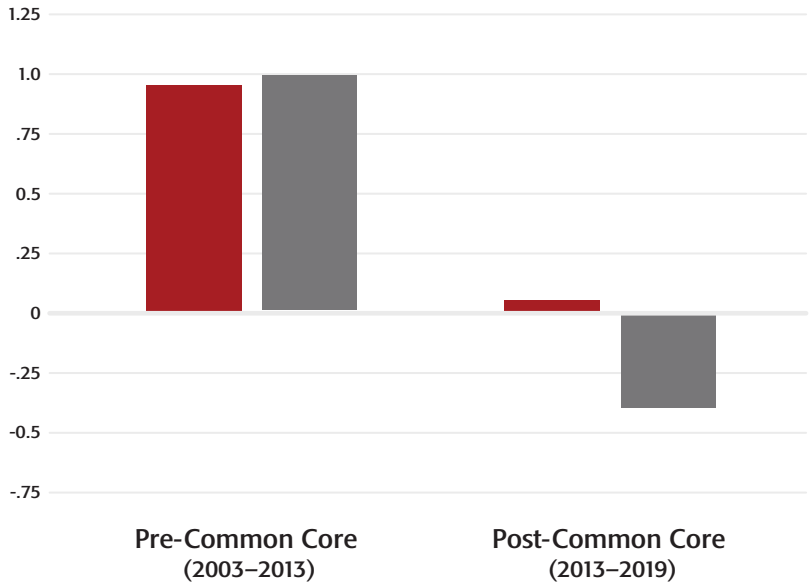
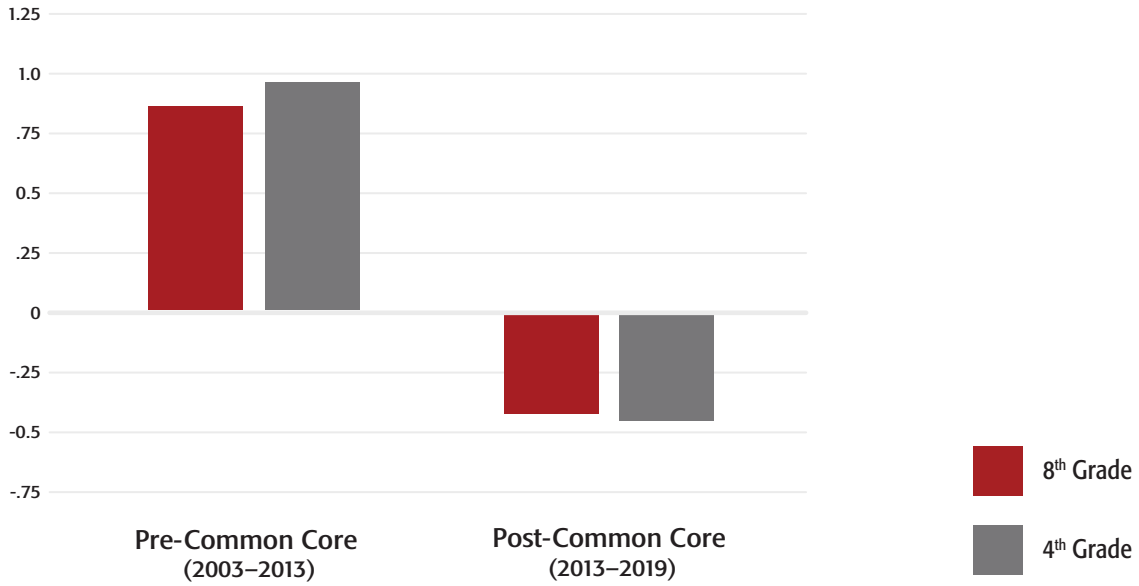


Figure 17: Georgia NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[58]



Illinois

Illinois's state board adopted Common Core on June 24, 2010[59], and implemented it fully in classrooms starting in fall of 2013.

Figure 18 illustrates Illinois's average annual math achievement gains before Common Core of three quarters of a point at grade 8 and over half of a point at grade 4, declining after Common Core to worse than negative a quarter at grades 8 and 4.

Figure 19 illustrates Illinois's average annual reading achievement gains before Common Core at near zero at grade 8 and one quarter of a point at grade 4, declining after Common Core to worse than negative a quarter at grade 8 and near zero at grade 4.

Figure 18: Illinois NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[60]

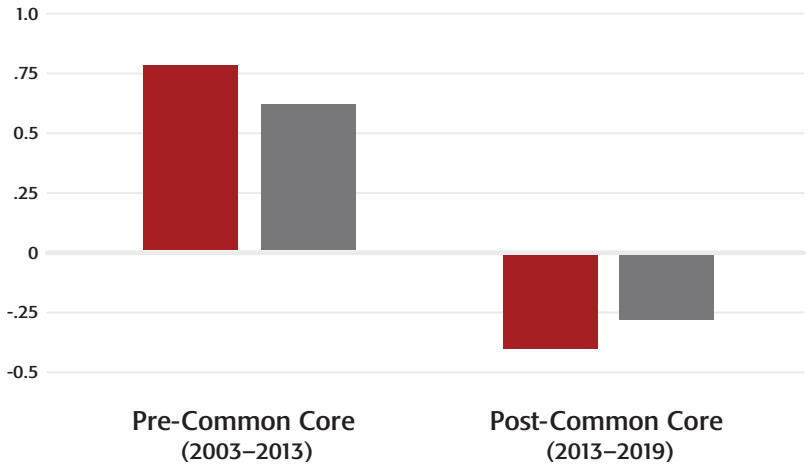
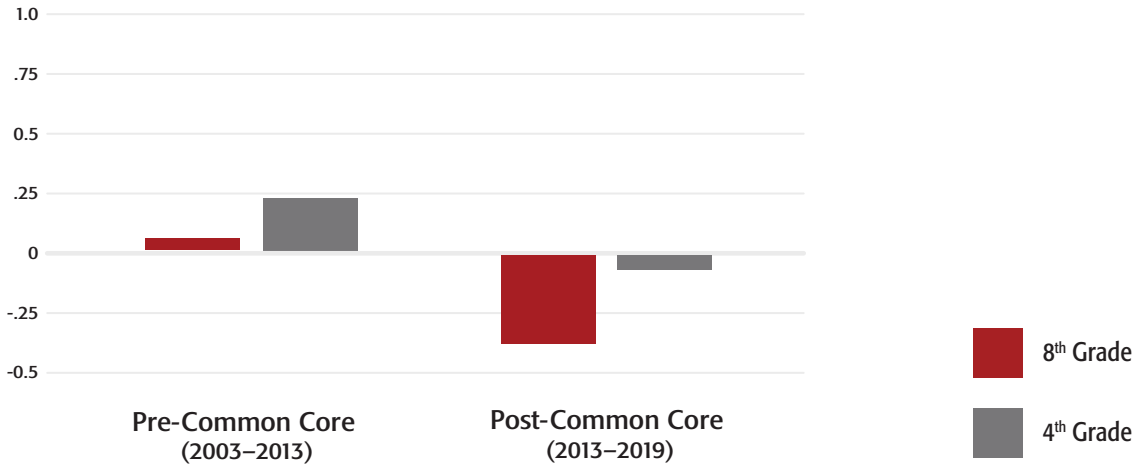


Figure 19: Illinois NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[61]



Kentucky

Kentucky's department of education adopted Common Core on February 10, 2010[62], and implemented it fully in classrooms starting in fall of 2011, earlier than all other states.

Figure 20 illustrates Kentucky's average annual math achievement gains before Common Core of nearly a point at grade 8 and a (relatively) large one-and-a-half points at grade 4, declining after Common Core to negative half of a point at grade 8 and negative one quarter of a point at grade 4.

Figure 21 illustrates Kentucky's average annual reading achievement gains before Common Core of about one quarter of a point at grade 8 and three quarters of a point at grade 4, declining after Common Core to negative three quarters of a point at grade 8 and negative half of a point at grade 4.

Figure 20: Kentucky NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[63]

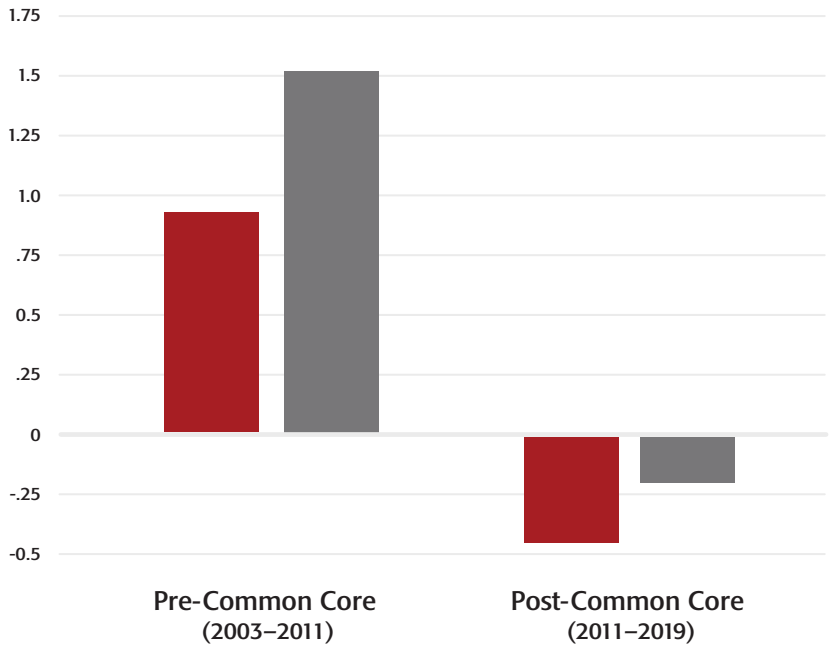
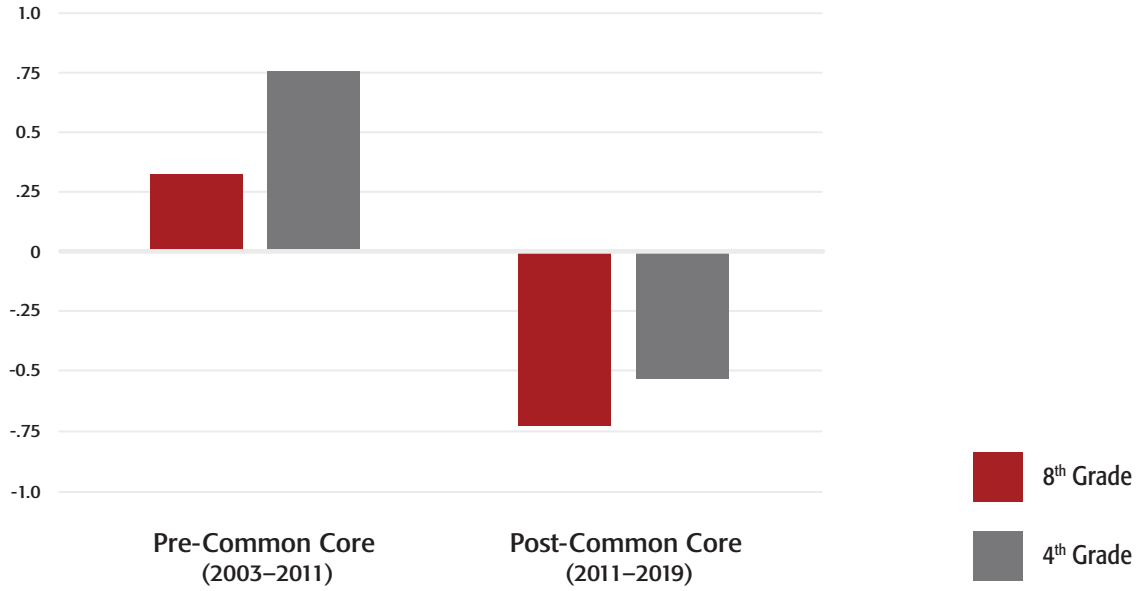


Figure 21: Kentucky NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[64]



Massachusetts

Massachusetts's state board adopted Common Core on July 21, 2010[65], to replace its highly respected pre-Common Core standards, and implemented Common Core in classrooms starting in fall of 2013.

Figure 22 illustrates Massachusetts's (relatively) large average annual math achievement gains before Common Core of nearly one-and-a-half points at grade 8 and over one point at grade 4, declining substantially after Common Core to approximately negative one point at grades 8 and 4.

Figure 23 illustrates Massachusetts's average annual reading achievement gains before Common Core of nearly half of a point, declining substantially after Common Code to worse than negative half of a point at grade 8 and nearly negative one quarter of a point at grade 4.

Figure 22: Massachusetts NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[66]

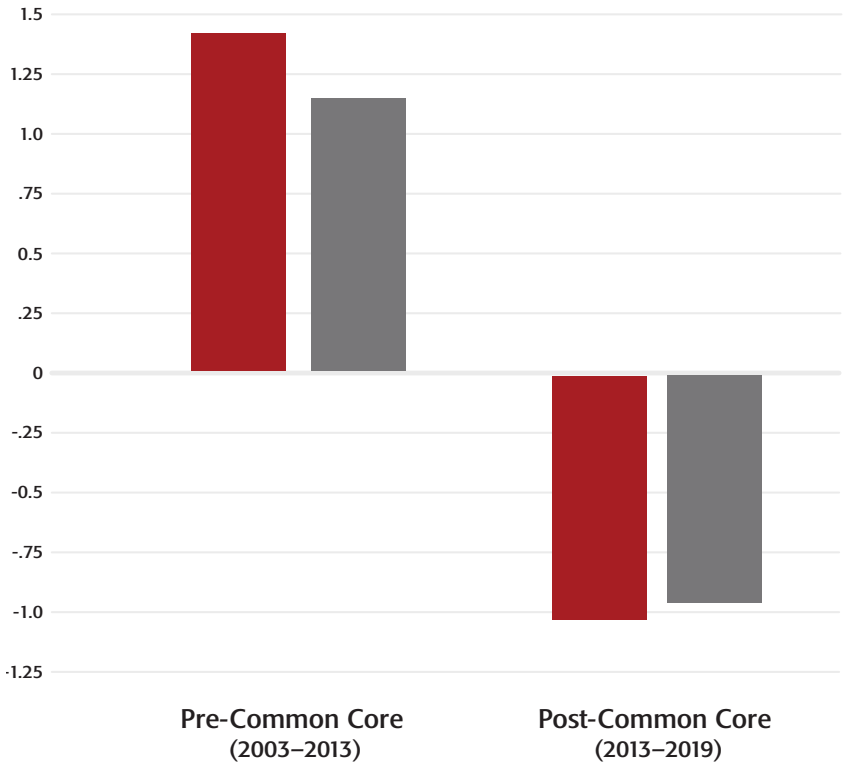
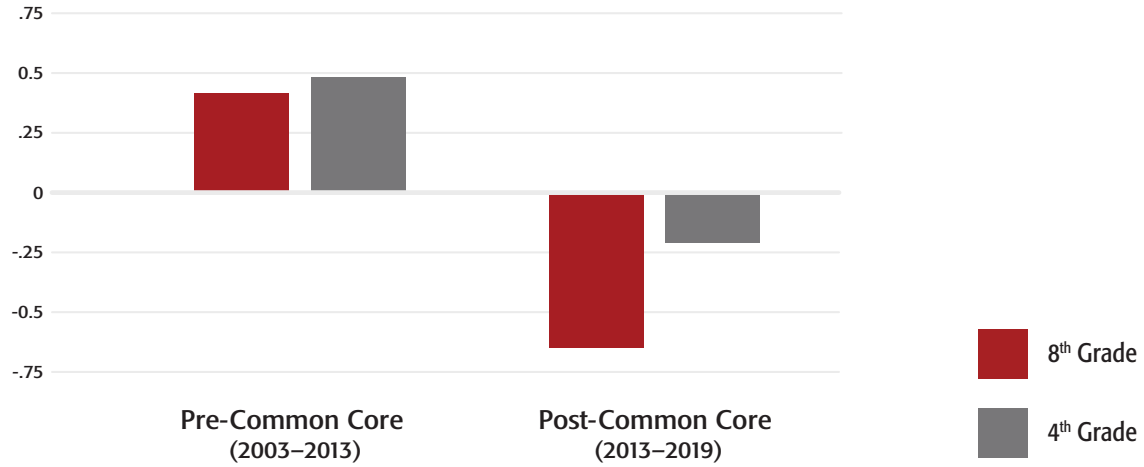


Figure 23: Massachusetts NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[67]



New York

New York's state board adopted Common Core on July 19, 2010[68], and implemented it fully in classrooms starting in fall of 2013.

Figure 24 illustrates New York's average annual math achievement gains before Common Core of approximately one quarter point at grade 8 and one half of a point at grade 4, declining after Common Core to negative one quarter at grade 8 and negative half of a point at grade 4.

Figure 25 illustrates New York's small average annual reading achievement gains before Common Core of less than a quarter of a point at grades 8 and 4, declining substantially after Common Core to approximately negative three quarters of a point at grades 8 and 4.

Figure 24: New York NAEP Math Average Annual Gain Pre and Post Common Core (Grades 8, 4)[69]

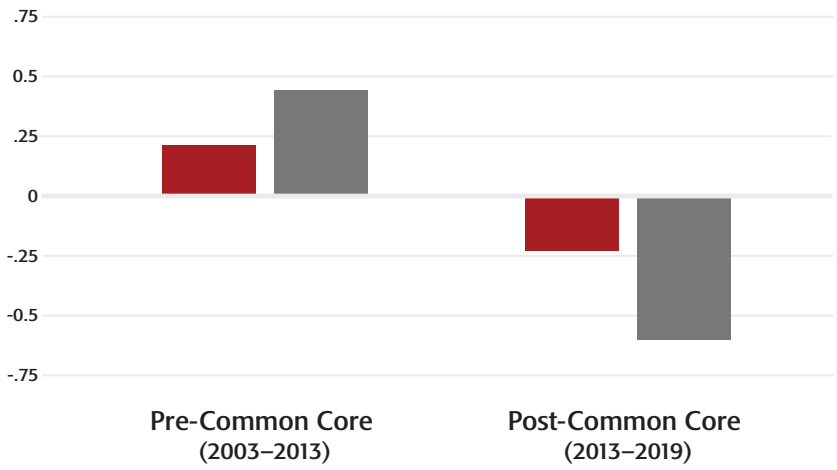
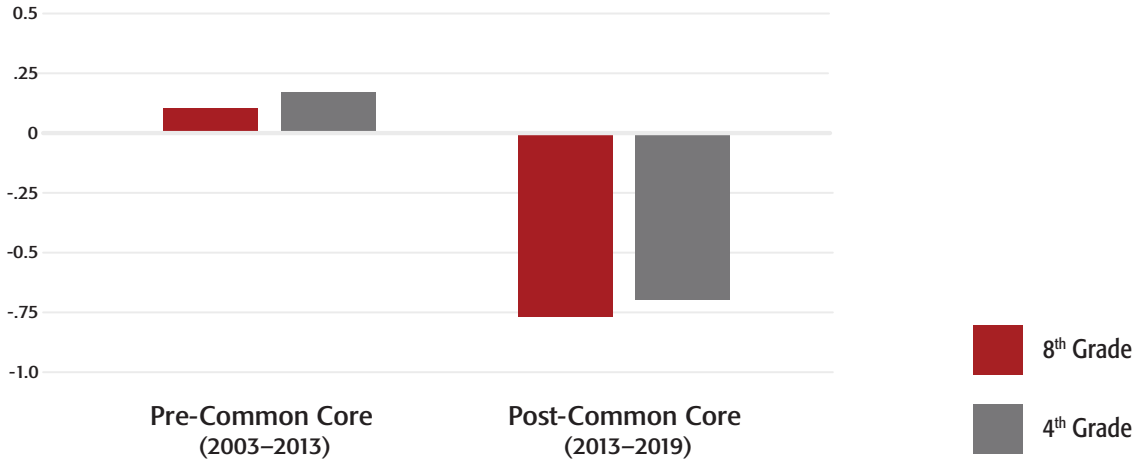


Figure 25: New York NAEP Reading Average Annual Gain Pre and Post Common Core (Grades 8, 4)[70]



Methodology

In evaluating the success of a curricular or instructional intervention such as Common Core, one would ideally design an experiment with some students and teachers randomly assigned to implement Common Core (the "treatment group") and the rest assigned to other approaches (the "control group") and compare the results. Since nearly all states implemented Common Core or similar approaches and students and teachers are not randomly assigned to use different curricula, evaluating the success of Common Core must rely on less ideal approaches.

This descriptive analysis is designed to be understood by a general, non-technical readership. It primarily compares student achievement gains on the NAEP after implementation of Common Core to student achievement gains in the years preceding implementation of Common Core. Since test score results, by their nature, tend to "bounce" somewhat from one year to the next and gains are rarely perfectly smooth, a significant part of the analysis determines the average annual gain since implementation of Common Core and compares that to the average annual gain before implementation of Common Core.

The "main" NAEP tests in math and reading have been administered regularly in the spring every two years since 2003 (less regularly before that) to representative national and state samples of students at grades 4 and 8. Results from both grades are typically included in this report but, where only one grade is included due to space or presentation considerations, it is the 8th. That grade is selected mainly because it is the more summative of the two grades.

National NAEP results included in this report are for all students, not just public school students. While some may assume that Common Core is only impacting public school students, that is not the case. There is considerable reason to believe that a substantial proportion of private and religious school students are feeling the effects as well,[71] so this analysis includes results for all students.

Special care was taken in determining the appropriate NAEP test administration year that serves as the endpoint of the pre-Common Core comparison group and also the starting point of the Common Core group ("transition" test year). While the great majority of state boards of education formally adopted the Common Core curriculum standards in 2010 or 2011, most did not fully implement it in classrooms until the fall of 2014. Therefore, the 2013 NAEP administration is used as the transition year for national results (there was no NAEP administration in spring of 2014). For the individual state analyses, the identification of the transition year was based on the actual year of classroom implementation of Common Core in each state.

NAEP is administered less frequently at grade 12 and could not be used to report achievement results at the high school level for this analysis. Further, some have questioned the validity of the grade 12 NAEP results on the basis of the age of the students and the lack of incentive for them to do their best work. Instead, national high school trend results since 2013 are reported for the ACT math and reading tests. High school students taking the ACT have an incentive to do their best since the results are used for admission to post-secondary institutions. ACT scores are used because—unlike the SAT—the ACT did not undergo significant modifications during this period.[72] It is important to note, however, that the ACT student test population is not nationally representative, so these results are illustrative and should be interpreted with caution.

This report also includes a section addressing defenses by Common Core advocates denying responsibility for the poor results. One of the arguments discussed blames the recent recession that ended in 2009. The response to this argument includes an analysis of the impact on student achievement of another similarly severe recession that ended in 1982. Since the main NAEP test only goes back to the early 1990's, student achievement is evaluated on a different NAEP test, the "long-term trend" NAEP.

Conclusion

So far, Common Core's long-time advocates appear largely unfazed by the educational wreckage expanding in its wake—millions of students, especially lower-achieving ones, experiencing unprecedented and sustained achievement declines. The advocates advise patience and staying the course. There is, however, one change that most do support: more funding! This despite the fact that per-student current expenditure has increased throughout Common Core's implementation and is currently at the highest level in our nation's history.[73]

Common Core will be difficult for much of the educational establishment to abandon, regardless of negative results for students, because it embodies the distilled essence of their beliefs. The detailed math and reading curriculum standards reflect the dominant viewpoint in schools of education on those subjects as well as that of the curriculum specialists they train. Similarly, the notion that a single set of national curriculum standards could be wielded by education policy elites—most with little experience operating successful schools—to create excellence in classrooms across America has been a dream for many decades. Except that now, it seems more like hubris.

Common Core will be difficult for much the educational establishment to abandon, regardless of negative results for students

In the Introduction to this report, I referred to a "vocal minority" of scholars and experts who have written and testified in disagreement with Common Core, some since early in its development. Given that Common Core represents the dominant viewpoint on curriculum and instruction within the education establishment, I am not suggesting that this alternative viewpoint is now likely to be adopted en masse across the country—regardless of how many negative results continue to pile up. But it *is* time to reconsider the national ambition of Common Core and to encourage states and local districts to try a broader range of approaches. Perhaps a few will choose approaches consistent with leading international competitors and many decades of education research on effective classroom teaching. Or perhaps some states will allow intrepid school districts interested in trying proven approaches to break free of the flawed "establishment standards" straight jacket, as for several years Massachusetts allowed many districts to stick with its successful pre-Common Core standards. If a few states succeed in this manner, others interested in learning from them could do so.

Whenever Common Core advocates have been confronted with criticism of its nation-wide reach and the initial coercive backing by the federal government that encouraged its adoption, they have pointed to the key role that state organizations—including the National Governors Association and the Council of Chief State School Officers—played in its development, maintaining that the initiative therefore represented "federalism."

However, not all that goes by the name of federalism is the same. Legal scholar Michael S. Greve has distinguished between the type of "competitive federalism" envisioned by the Framers of the Constitution and a harmful distortion of it that he terms "cartel federalism."[74]

Before Common Core and before the earlier Congressional mandate on curriculum standards, states competed to design the best education reforms, including the best policies on curriculum and standards and local control. It was an entrepreneurial and vibrant atmosphere, some states did a better job in some areas, and other states picked up ideas from them. We also avoided a nation-wide debacle like Common Core.

Justice Louis Brandeis described well how the type of federalism envisioned by the Founders would prevent a flawed experiment from damaging education for students across the entire country:

> [A] state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments *without risk to the rest of the country.*[75] *(Emphasis added)*

Unfortunately, most states did not follow the federalism of Justice Brandeis and the Founders, deciding instead to set aside competition and collude on an unproven educational experiment that put education at risk across the country. Unfortunately, that risk has not paid off, to put it mildly.

It *is* time to reconsider the national ambition of Common Core and to encourage states and local districts to try a broader range of approaches.

Leading business executives through organizations they control—such as the Gates Foundation, the Chamber of Commerce, the Business Roundtable, and Achieve, Inc.—who will admit privately that they personally know little about curriculum and instruction, followed the direction of the same establishment education experts who have been repackaging the same antiquated progressive curriculum "reforms" for many decades, damaging achievement especially for lower performing students wherever they are tried and evaluated. In the competitive business world, the failure of a single company normally does not bring down an entire industry. But in this case, these business leaders and the federal government persuaded most states to establish a cartel that damaged student achievement for the country as a whole.

It is human nature for those who supported a failed strategy to find it difficult to admit a monumental error. But our most vulnerable students are paying the steepest price for this particular error. After six years of digging this hole, the most fervent Common Core advocates seem to believe that we should continue to dig deeper. Instead, we must ensure that reason prevails and a different approach is considered.

Endnotes

1 U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 Mathematics Assessments. Available at: **https://www.nationsreportcard.gov/ndecore/xplore/NDE**

2 This graph is the same as Figure 4 in the main body of the report.

3 National Governors Association, Council of Chief State School Officers. Forty-Nine States and Territories Join Common Core Standards Initiative. NGA website. June 1, 2009. p. 1. Available at: **https://web.archive.org/web/20131004230129/http://www.nga.org/cms/home/news-room/news-releases/page_2009/col2-content/main-content-list/title_forty-nine-states-and-territories-join-common-core-standards-initiative.html#**

4 The National Commission on Excellence in Education. *A Nation At Risk: The Imperative for Educational Reform*. Washington, DC: U.S. Department of Education, April 1983 (p. 10).

5 National Governors Association, Council of Chief State School Officers. Forty-Nine States and Territories Join Common Core Standards Initiative. NGA website. June 1, 2009. p. 1. Available at: **https://web.archive.org/web/20131004230129/http://www.nga.org/cms/home/news-room/news-releases/page_2009/col2-content/main-content-list/title_forty-nine-states-and-territories-join-common-core-standards-initiative.html#**

6 See Exhibit 2.9 in Mullis, I. V. S., Martin, M. O., Foy, P., & Hooper, M. (2016). TIMSS 2015 International Results in Mathematics. Retrieved from Boston College, TIMSS & PIRLS International Available at: **http://timssandpirls.bc.edu/timss2015/international-results/wp-content/uploads/filebase/mathematics/2.-performance-at-international-benchmarks/2_9_math-performance-at-the-international-benchmarks-of-mathematics-achievement-grade-8.pdf**

7 Figure described in this paper includes only an illustrative selection of results, for full data see: TIMSS Figure 2. Percentage of 8th-grade students reaching the TIMSS international benchmarks in mathematics, by education system: 2015. Available here: **https://nces.ed.gov/timss/timss2015/timss2015_figure02.asp**

8 This federal requirement was included in Title I, Part A, of the Improving America's Schools Act of 1994 (P.L. 103–382, an amendment to the Elementary and Secondary Education Act of 1965), as interpreted in regulation by the U.S. Department of Education. It is available at: **https://www.congress.gov/bill/103rd-congress/house-bill/6**

9 U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1971–2012 Long-Term Trend Reading and Mathematics Available at: **https://www.nationsreportcard.gov/ltt_2012/**

10 In reading, less a driving concern from an international competitiveness standpoint, overall NAEP scores changed less than their math counterparts over the 1970's, 1980's, 1990's, and 2000's, improving only slightly over these four decades. However, significant changes did occur among high- and low-achieving student subpopulations. Some of these changes are discussed later in this document.

11 Chester E. Finn, Jr., and Michael J. Petrilli in the Foreword to John Cronin, Michael Dahlin, Deborah Adkins, and G. Gage Kingsbury. *The Proficiency Illusion*. Washington, DC: Thomas B. Fordham Institute & NWEA, October 2007. p. 2

12 Ibid, p. 5

13 Neal McCluskey, "Behind the Curtain: Assessing the Case for National Curriculum Standards," *Cato Policy Analysis, no. 661,* February 17, 2010, pp. 8–9.

14 National Governors Association, Council of Chief State School Officers, Achieve, Inc., "Benchmarking for Success: Ensuring U.S. Students Receive a World-Class Education, Common Core State Standards Initiative. (Washington, DC: NGA) 2008. p. 24. Available at: **http://www.corestandards.org/assets/0812BENCHMARKING.pdf**

15 Ibid, p. 6.

16 Theodor Rebarber and Neal McCluskey. Common Core, School Choice & Rethinking Standards-Based Reform. White Paper No. 186. Pioneer Institute. September 2018. pp. 8–19

17 For a summary of Sandra Stotsky's critique of the Common Core ELA standards, see Sandra Stotsky, Common Core Standards' Devastating Impact on Literary Study and Analytical Thinking. Issue Brief No. 3800. Washington, DC: The Heritage Foundation. December 11, 2012. It is available here: **http://thf_media.s3.amazonaws.com/2012/pdf/ib3800.pdf**

18 Jeanne S. Chall, *The Academic Achievement Challenge: What Really Works In The Classroom?* (New York: Guilford Publications, 2002), p. 171.

19 PISA results available here: **https://nces.ed.gov/surveys/pisa/**

20 Twenty-four of the 30 countries with higher scores than the U.S. had differences that were statistically significant at the 95 percent confidence level.

21 The Singapore students were a nationally representative sample while the Chinese students were from certain regions in China.

22 U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 Math Assessments. Available here: **https://www.nationsreportcard.gov/ndecore/xplore/NDE**

23 U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 Mathematics Assessments. Available at: **https://www.nationsreportcard.gov/ndecore/xplore/NDE**

24 Ibid

25 IBIS*World* industry statistics, available here: **https://www.ibisworld.com/industry-statistics/market-size/online-tutoring-services-united-states**

26 Business Wire, A Berkshire Hathaway Company, available here: **https://www.businesswire.com/news/home/20191003005317/en/Growth-Private-Tutoring-Market-Impacted-Cost-Benefits**

27 U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 Mathematics Assessments. Available at: **https://www.nationsreportcard.gov/ndecore/xplore/NDE**

28 Summary on p. 171 of Jeanne S. Chall, *The Academic Achievement Challenge: What Really Works In The Classroom?* (New York: Guilford Publications, 2002), p. 171.

29 For 2019 national ACT results, see:
ACT, Inc., The Condition of College & Career Readiness 2019, Alabama Key Findings, p. 10. Available at: **http://www.act.org/content/dam/act/unsecured/documents/cccr-2019/Alabama-CCCR-2019.pdf**

For 2014 - 2018 national ACT results, see:
ACT, Inc., ACT Profile Report - National, Graduating Class 2018. Table 1.3, p. 7. Available at: **https://www.act.org/content/dam/act/unsecured/documents/cccr2018/P_99_999999_N_S_N00_ACT-GCPR_National.pdf**

For 2013 national ACT results, see:
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72 Unfortunately, ACT implemented a reporting change in 2013 that prevents extending the trend analysis to earlier years.

73 Per pupil current expenditure in constant 2017/18 dollars based on fall enrollment (not including capital expenditure) was projected to be $12,760 in the most recently completed school year, 2018/19; the pre-recession peak of $12,183 in 2008/09 was surpassed again in 2015/16 ($12,330) and spending is projected to have increased in each subsequent year. Table 236-15. U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "National Public Education Financial Survey," 1989–90 through 2016–17; National Elementary and Secondary Enrollment Projection Model, 1972 through 2028; and Public Elementary and Secondary Education Current Expenditure Projection Model, 1973–74 through 2028–29. (Table prepared April 2019.)

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About the Author

Theodor Rebarber has worked on education reform and policy for three decades in the public, nonprofit and private sectors. He currently leads nonprofit AccountabilityWorks, which conducts education policy research and offers online testing services at AWSchoolTest.com. Among AW's projects have been: an evaluation of state curriculum standards; management of a consortium of five states that developed a large-scale assessment in English language in partnership with ETS, and; development of an online testing platform serving 40,000 students. Previously, he was co-founder and chief education officer of a venture capital-backed charter school management company that attained accelerated academic achievement for 10,000, primarily disadvantaged students in ten states. Rebarber served as senior staff in Congress, where he was the lead staff author of the federal charter schools statute for Washington, D.C., which resulted in nearly half of the city's public school students being educated in charter schools. He worked on education policy, including curriculum standards and testing, at the U.S. Education Department for the office of research and at the Vanderbilt Institute for Public Policy Studies. He has testified before Congress and state legislatures as well as developed a range of education policy analyses and publications, including on education costs, state and national standards and assessments, accountability systems, differential and performance-based teacher compensation, program evaluation and teacher certification.

About Pioneer

Pioneer Institute is an independent, non-partisan, privately funded research organization that seeks to improve the quality of life in Massachusetts through civic discourse and intellectually rigorous, data-driven public policy solutions based on free market principles, individual liberty and responsibility, and the ideal of effective, limited and accountable government.

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