TEACHING HIGHER

Educators' Perspectives on Common Core Implementation

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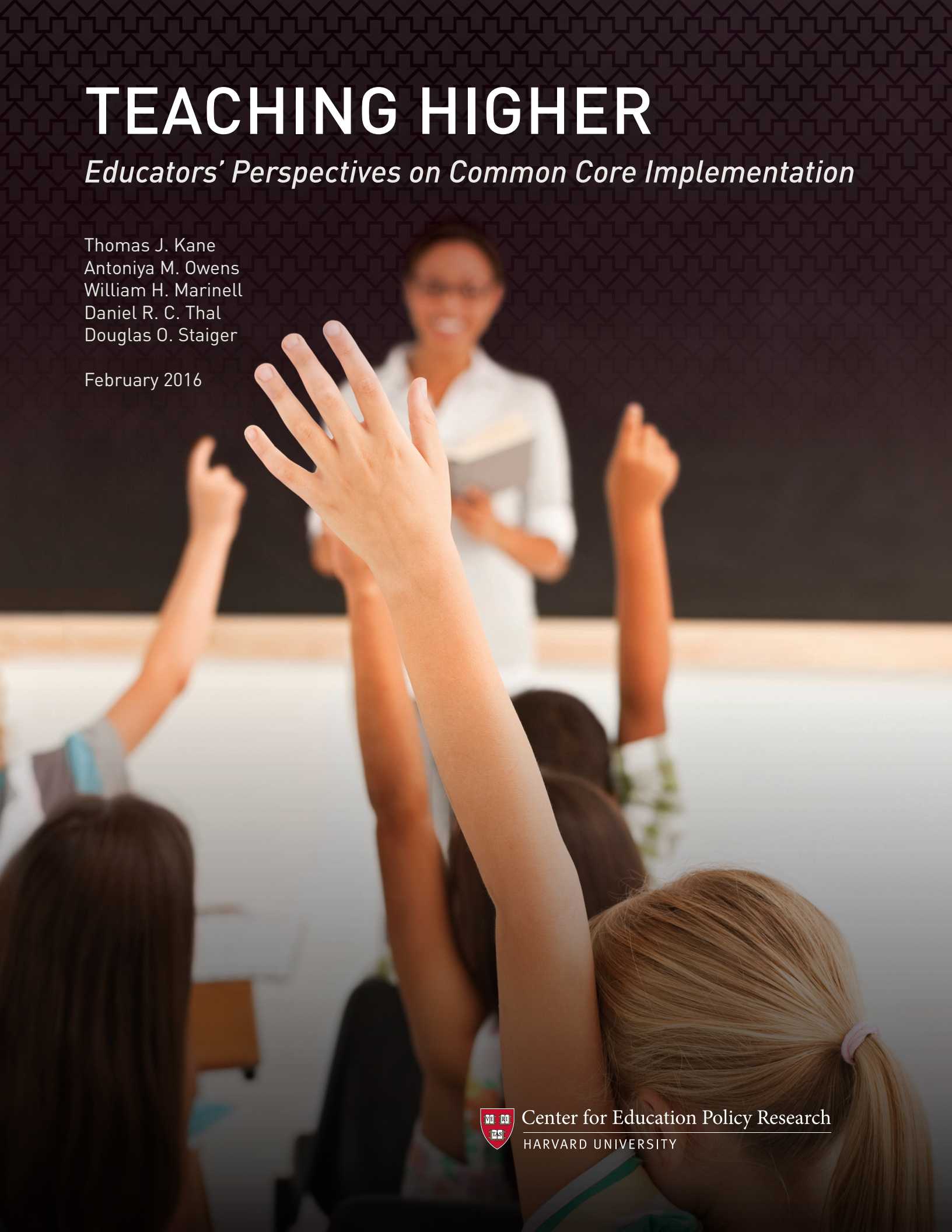

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Abstract

Now that the Every Student Succeeds Act (ESSA) has resolved the struggle over the federal role in education, leaders in the remaining Common Core states can refocus attention on the standards, the assessments, and the supports teachers and students need to succeed on them. To inform those efforts, the Center for Education Policy Research (CEPR) at Harvard University surveyed a representative sample of teachers in five states (Delaware, Maryland, Massachusetts, New Mexico, and Nevada) as they prepared their students to take the new Common Core-aligned assessments in the spring of 2015. We asked teachers and principals about the types and amounts of professional development they received, the textbooks they were using, the online resources they found most helpful, and the alignment between Common Core State Standards (CCSS) and teacher evaluations. We studied how each of the above was related to students' performance on the new assessments, after controlling for students' demographic characteristics and prior achievement on state assessments. We report four primary findings:

1. Teachers in the five study states have **made major changes** in their lesson plans and instructional materials to meet the CCSS.
   - *Four out of five mathematics teachers (82%) and three out of four English teachers (72%) reported that they have changed more than half of their instructional materials in response to the Common Core.*
   - *Seven out of eight English teachers (85%) reported having increased writing assignments in which students are expected to use evidence to support their arguments. A similar percentage have increased assigned reading of nonfiction texts.*

2. Despite the additional work, teachers and principals in the five states have largely **embraced the new standards.**
   - *Three out of four teachers (73%) reported that they have embraced the new standards "quite a bit" or "fully."*
   - *More than two thirds of principals (69%) believe that the new standards will lead to improved student learning.*

3. In mathematics, we identified three markers of successful implementation: more **professional development days,** more **classroom observations with explicit feedback** tied to the Common Core, and the **inclusion of Common Core-aligned student outcomes in teacher evaluations.** All were associated with statistically significantly higher student performance on the PARCC and Smarter Balanced assessments in mathematics.

4. In English language arts, we did not find evidence for or against any particular implementation strategies. However, the new English assessments appear **more sensitive to instructional differences** between teachers, especially in middle school grades. The greater sensitivity seems to be due to the greater weight on student writing in the new assessments. Although prior research has found math achievement to be more sensitive to instructional differences between teachers than English, the new English assessments are nearly as sensitive to teacher effects as the math assessments have been.

Our study highlights an important advantage of having a common set of standards and assessments across multiple states. Leaders in multiple states can now share the cost of learning about the challenges teachers are facing and the effectiveness of the resources they are using. Moreover, by linking teacher responses to their students' achievement and controlling for student characteristics, we can provide early evidence on the efficacy of educational initiatives much faster and cheaper than has been possible in the past.

Introduction

Over the past three years, while the battle over the Common Core State Standards (CCSS) has raged, teachers in many states have quietly retooled their lesson plans and materials to meet the new standards. Thus far, their efforts have been overshadowed by the political debate over the role of the federal government in U.S. education. Perhaps now that the Every Student Succeeds Act has brought a resolution to that struggle, leaders can refocus attention on the standards themselves and helping teachers and students succeed on them.

In the spring of 2015, the Center for Education Policy Research (CEPR) at Harvard University began investigating how teachers and principals in five U.S. states—Delaware, Maryland, Massachusetts, New Mexico, and Nevada—were implementing the new CCSS. We asked teachers and principals about the number of days of professional development they have received, the textbooks they have used, the online resources they have found most helpful, whether they have been observed by a supervisor or peer as they adjusted their instruction to meet the new standards, and about many other aspects of their Common Core implementation. In order to learn whether any of those efforts were actually helping teachers and their students to succeed, we linked teachers' responses to their students' achievement on two Common Core-aligned assessments—the Partnership for Assessment of Readiness for College or Careers (PARCC) and the Smarter Balanced Assessment Consortium (SBAC) tests. In order to measure the effectiveness of various supports, we controlled for students' demographic characteristics and prior achievement on state assessments, as well as teachers' past history of supporting achievement gains on the legacy assessments.

We learned the following four lessons:

- **Teachers in the five states have made major changes in their lesson plans and instructional materials to meet the new standards.** For example, four out of five math teachers (82%) and three out of four English teachers (72%) reported that they have changed more than half of their instructional materials in response to the CCSS. Seven out of eight English teachers (85%) reported having increased writing assignments in which students are expected to cite evidence to support their arguments. A similar percentage have increased assigned reading of nonfiction texts.

- **Despite the additional work, teachers and principals have largely embraced the new standards. Three out of four teachers (73%) reported that they have embraced the new standards "quite a bit" or "fully."** More than two thirds of principals (69%) believe that the new standards will lead to improved student learning.

- **In mathematics, we learned that three aspects of implementation—more professional development days, more classroom observations with explicit feedback tied to the Common Core, and the inclusion of Common Core-aligned student outcomes in teacher evaluations—are associated with statistically significantly higher student performance.**

- In English language arts, we did not find evidence for or against any particular implementation strategies. However, **we learned that the new English assessments are more sensitive to instructional differences between teachers, especially in middle school grades.** The greater sensitivity seems to be due to the greater weight on student writing in the new assessments. Perhaps the new assessments will encourage more teachers to focus on student writing.

In Section I of this report, we provide background information about the study's context, design, and methodology. Section II describes the various supports and strategies that teachers and principals have been using to implement the CCSS. In Section III, we report key findings about which Common Core implementation strategies are associated with students' achievement. Finally, in Section IV, we examine the instructional sensitivity of the Common Core assessments.

Studies of this kind—starting with a random sample of teachers, linking teacher survey responses to their students' achievement, and pooling results across states—would not have been possible two years ago. States' new ability to link teachers to specific students allows us to control for the prior achievement and

demographic characteristics of students whose schools and teachers have adopted new textbooks or implemented specific types of teacher training, thereby providing tentative answers on the impacts of those interventions much more quickly and cheaply. Our study design represents a necessary middle ground between randomized field trials—which are the only way to definitively establish causal effect of interventions, but are also costly, time-consuming, and sometimes impractical in education—and purely correlational studies.

The Magnitude of the Challenge

In 2009, the National Governors Association and the Council of Chief State School Officers began drafting rigorous mathematics and English language arts (ELA) standards to better prepare students for college and career. The resulting CCSS have been adopted in more than 40 states.[1]

The CCSS constitute a major departure from the previous generation of state standards. In English, the new standards focus on phonemic awareness, phonics, and fluency in the early grades, laying a strong foundation for reading. Rather than include the vague language encouraging teachers to use "appropriate" grade-level texts, the new standards list exemplar texts for each grade span.[2] When presenting options for non-fiction texts, the standards emphasize the essential American documents, such as George Washington's Farewell Address, the Gettysburg Address, and Martin Luther King's "Letter from a Birmingham Jail." Rather than seek general reading comprehension, students are required to explicitly cite evidence and to trace the reasoning in arguments. The writing standards, which were neglected many states in the past, emphasize grammar, usage, and mechanics. Moreover, in order to set clearer expectations for students and teachers, the standards provide examples of the writing students should be able to produce at each grade level and in various genres.

In mathematics, the Common Core prioritizes arithmetic in the elementary grades, over less crucial content drawn from later grades such as statistics. Rather than confusing students by attaching equal weight to invented and non-standard strategies, the new standards emphasize fluency with the standard algorithms. Moreover, the new standards require students to develop automaticity with addition and multiplication math facts. Probability and statistics are delayed until middle school, where they emphasized in greater depth than in most state standards (Dingman, Teuscher, Newton, & Kasmer, 2013). The math standards emphasize word problems starting in the early grades.

In 2010, the Thomas B. Fordham Institute compared the CCSS to the legacy standards in each state, providing grades for their clarity, specificity, content, and rigor (Carmichael, Martino, Porter-Magee and Wilson, 2010). The authors rated the CCSS with an "A-" in math and a "B+" in English. Among the states in our study, only Massachusetts achieved comparable grades, with a "B+" in math and an "A-" in English for its legacy standards. In contrast, the Fordham study rated the former math standards in Delaware, Maryland, Nevada, and New Mexico with grades of "B", "D", "C," and "C," respectively. In English, Delaware, Maryland, Nevada, and New Mexico earned an "F" and three "C's," respectively.

Like the new standards, the new assessments—PARCC and SBAC—are quite different from the legacy tests. The PARCC and SBAC use different item types as well as different platforms (computer vs. paper)[3]. For example, in ELA, most legacy assessments relied heavily on multiple-choice questions to measure reading comprehension. In contrast, PARCC and SBAC require students from Grades 3 through 11 to write short answers and longer essays. Student writing accounts for nearly 50% of the points on the PARCC ELA test in Grades 3 through 8. In contrast, open-response writing items in Massachusetts' highly-regarded legacy state assessment (MCAS), accounted for less than a third of the total score points in elementary and middle school grades (Ansel, 2015).

In mathematics, the PARCC and SBAC assessments required students to show their work and to demonstrate their mathematical reasoning, not simply to pick the correct answer. For example, the fifth-grade PARCC mathematics assessment includes questions such as: "Shannon is building a rectangular garden that is 18 feet wide and 27 feet long. Write an equation that represents

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[1] As of the writing of this report, the Common Core State Standards are still being used in 42 states and the District of Columbia, though their status is under review in five states (Missouri, New Jersey, North Carolina, Tennessee, Utah). One state (Minnesota) has adopted the standards for English language arts only. Three states that initially adopted the standards subsequently repealed them (Indiana, Oklahoma, South Carolina). Four states never adopted the standards for either mathematics or English language arts (Alaska, Nebraska, Texas, Virginia).

[2] Although the exemplar texts are not required reading, they provide a benchmark for teachers to use in drawing up their own reading lists.

[3] The Delaware Comprehensive Assessment System (DCAS)—Delaware's legacy assessment—is an exception, as its administration was entirely computer-based.

Many schools have had to overhaul their curricula, strengthen teachers' content knowledge, and rethink the focus of professional development.

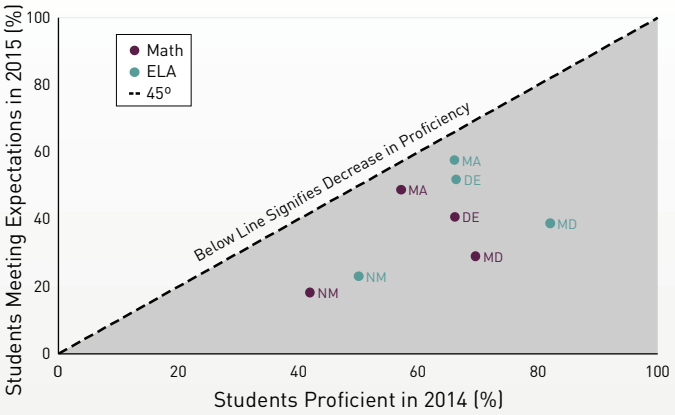
the area of Shannon's garden. In your equation, let g represent the area of Shannon's garden." (PARCC, 2015) In the past, students may simply have been asked to calculate the area of the garden and choose from four possible answers. In this assessment, students are also given the cost of fencing and a gate, and asked to write an expression describing the total cost. Such skills lay the groundwork for algebraic reasoning. However, they were not used in the past for three reasons: the need to cover a larger number of standards, the lack of capacity for computer scoring, and the high cost of hand scoring.

The nature of state standards and assessments influences the depth and breadth of teaching. When standards are numerous and broad, they must be assessed with multiple-choice questions, since that is the only economical way to assess a broad domain of topics in a short period of time. But, as a result, teachers provide a superficial treatment of each topic, focusing on basic skills. They have neither the time nor the incentive to help students learn to express ideas, make arguments, and analyze problems. In contrast, when the standards are more focused, and when both the standards and assessments explicitly emphasize students' writing and mathematical reasoning, teachers have more time and incentive to develop those skills (Faxon-Mills, Hamilton, Rudnick, & Stetcher, 2013).

The CCSS and the new assessments do set a higher standard, at least in the states we are studying. Figure 1 compares students' proficiency rates on the 2014 legacy assessments and the proportion of students meeting or exceeding expectations on the new assessments.[4] (We report a student-weighted average proficiency rate for students in Grades 3 through 8.) Because the Massachusetts standards and assessments were closest to the CCSS and PARCC in terms of rigor, their students saw the smallest decline. Nevertheless, the proportion of students meeting or exceeding expectations on the new tests was 8 percentage points lower than the 2014 proficiency rate, declining from 57% to 49% in math and 66% to 58% in English. The remaining states saw much larger declines. The proportion of students meeting expectations in Maryland was 41 points lower in math and 43 points lower in English. In Delaware, the rates fell by 26 points in math and 15 points in English. In New Mexico, the proportion of students meeting expectations was 24 points lower in math and 27 points lower in English.

The new standards and assessments represent a significant challenge for teachers and students. Many schools have had to overhaul their curricula, strengthen teachers' content knowledge, and rethink the focus of professional development. This study represents the first comprehensive examination of how the CCSS are being implemented in schools across five states and which of the strategies and supports that schools have been pursuing are associated with students' performance on the new assessments.

FIGURE 1: Comparing Rates of Proficiency in 2014 and Meeting Expectations in 2015, Grades 3–8, Math and ELA



[4] The SBAC assessment has four achievement levels and the PARCC test has five. We used the top two categories on the tests as meeting proficiency. In Massachusetts, we reported the 2014 and 2015 proficiency rates for the subset of schools that took the PARCC test in the spring of 2015.

Section I: The Study

Who knows more about how the CCSS are playing out in schools than the teachers and principals implementing them? To learn from their experiences, we surveyed teachers and principals in a representative sample of 151 elementary and middle schools across five states. Overall, 1,498 teachers and 142 principals completed the surveys in the early spring of 2015—equivalent to response rates of 86% for teachers and 93% for principals.

The following questions guided our study design:

1. **What strategies and supports are schools and teachers using to implement the CCSS?**
2. **Which Common Core implementation strategies are associated with students' performance on the 2014–2015 PARCC and Smarter Balanced assessments?**
3. **Are the new assessments more or less sensitive to the instructional differences between teachers?**

We looked for state partners who could fulfill three requirements essential to our research design. First, we looked for states that were participating in the PARCC or SBAC assessment consortia in the spring of 2015, as we needed to be able to pool student results across multiple states. Second, we sought out states that could connect specific teachers to specific students, because our analysis called for linking teacher survey responses to their students' achievement. Third, we needed partners who were committed to learning about the effectiveness of different CCSS implementation approaches, as we counted on them to provide timely access to their data. Ultimately, we selected five states as partners for the study: Delaware, Maryland, Massachusetts, New Mexico, and Nevada.[5]

In each state, we used a stratified random sampling strategy to identify a sample of schools.[6] The stratification was based on three characteristics: mean student academic achievement, percentage of students eligible for the free or reduced-price lunch program, and school location (urban, suburban, or rural). We randomly selected schools within each stratum. As Table 1 shows, the 135 schools that were randomly selected for the survey sample had very similar student and teacher characteristics to the schools that were not selected. Appendix Table A.1 shows these comparisons separately by state.[7] The random selection of schools, along with the application of appropriate sampling weights, ensures that our survey results are representative of each participating state.

TABLE 1: Student and Teacher Characteristics in Sample and Non-Sample Schools, Pooled Across States

	SAMPLE SCHOOLS	NON-SAMPLE SCHOOLS	DIFFERENCE (STD. ERROR)
School average 2013–2014 math score (standard deviations)	-0.063	-0.062	0.001 (0.067)
School average 2013–2014 ELA score (standard deviations)	-0.081	-0.062	-0.017 (0.057)
School percentage of students receiving free or reduced-price lunch	52.8%	53.3%	-1.0% (4.1)
School percentage of Black students	21.4%	18.9%	2.0% (2.9)
School percentage of Hispanic students	23.4%	24.4%	-1.2% (2.3)
Average teacher prior math value-added (standard deviations of student test scores)	-0.008	0.001	-0.010 (0.010)
Average teacher prior ELA value-added (standard deviations of student test scores)	0.001	0.002	-0.001 (0.008)
Average teacher experience (years)	10.8	10.9	-0.142 (0.433)

[5] Because the Nevada Department of Education does not collect statewide information on student–teacher links, we worked with the state to recruit two school districts with data on these links—Clark County School District and Humboldt County School District. Clark County is the state's largest school district, with more than 360 schools that enroll 70% of the state's student population. We randomly selected 17 Clark County elementary and middle schools for participation in the surveys. Humboldt County has five elementary and middle schools that collectively enroll about 2,300 students; all five schools were included in the surveys.

[6] We also collected data from an auxiliary sample of 16 schools, which the state education agencies believed to be "high implementers" of the standards. We did not use the survey responses from these schools in the descriptive survey results discussed in Section II. We did include the "high implementing" sample in Section III, however, in order to test whether the schools with high levels of teacher supports performed better. In no state did the number of "high implementing" schools represent more than 15% of the sample. Furthermore, survey response rates of teachers and principals in the "high implementing" schools were very similar to—and statistically indistinguishable from—those in the randomly selected schools.

[7] Only one of the differences (teachers' 2013–2014 value-added in ELA) for one of the states (Delaware) was statistically significant.

To inform the content of our survey, we conducted extensive background research as well as in-depth interviews with 11 state agency officials, 20 district leaders, seven principals, and 10 teachers to learn about their experiences implementing the CCSS. From these interviews, we created separate teacher and principal surveys to inquire about a broad range of factors, including the extent to which teachers and principals have embraced the CCSS, the supports they have received from their districts and states, and the specific strategies they are using to help students master the new standards. More specifically, our surveys focused on changes in instructional materials and lesson plans, the types and amounts of professional development, the frequency and type of collaboration within schools, classroom observations and feedback, and the content of teachers' performance evaluations. We piloted the surveys with roughly 30 individuals and conducted cognitive interviews with a subset of that group. The final teacher and principal surveys are in Appendix B.

We limited the teacher survey to mathematics and ELA teachers in Grades 4 through 8. Annual testing in those grades allowed us to study changes in student achievement from the end of one school year to the next. We administered the surveys between February and April of 2015. Appendix C provides additional information about both the number and percentage of teachers and principals who completed the surveys in each of the five states.

We conducted our analysis in two stages. First, we measured the degree of teacher and principal support for the standards and catalogued the strategies that teachers and principals have used to implement the CCSS. In the fall of 2015, when we received PARCC and SBAC test scores for individual students, we started the second stage, examining the degree to which particular aspects of implementation were associated with stronger student performance on these assessments. In doing so, we used statistical methods to control for students' characteristics (e.g., students' race/ethnicity and gender, whether they qualified for free or reduced-price lunch, etc.) and students' prior achievement on each state's previous assessments. To account for the possible effect of peers on students' achievement, we also controlled for the mean performance and characteristics of the peers in each classroom and school.

We also sought to control for characteristics of teachers and schools that might confound our results. For example, to account for the fact that stronger teachers or more effective schools may have chosen different implementation strategies, we computed and then controlled for teachers' value-added in mathematics or English in the prior school year. We describe the technical details of our analytical approach in Appendix E.

Unfortunately, we had to exclude Nevada from the second stage of our analysis. In the spring of 2015, most schools in Nevada experienced significant technical difficulties with the administration of the Smarter Balanced assessment. Only 30% of students in the state were tested successfully. The Clark County School District—Nevada's largest school district and home to most of the schools in our survey sample—tested only about 5% of its students. As a result, we could not include Nevada in our analysis of the relationships between Common Core implementation strategies and students' performance, presented in Section III. However, we have included Nevada principals' and teachers' survey responses in the descriptive findings reported in Section II.

Section II. Implementing the Common Core

In this section, we describe what we learned about the level of teacher and principal support, the professional development that teachers and schools have received, and the instructional changes that teachers and principals have made. Although we combine the responses across states for much of the analysis, we provide state-level results in Appendix D.

We report many of the results separately for mathematics teachers and ELA teachers. (If a teacher reported teaching both math and English, they were included in both subjects.)

Do teachers and principals support the Common Core?

Successful implementation of any initiative depends upon the support of teachers and principals. If teachers or principals were unconvinced of the CCSS' potential to improve students' achievement, they would be less inclined to invest the time and effort required to overhaul classroom instruction. In addition, teachers and principals play an important role in shaping parents' perceptions of the standards through their communication with students' families.

Our surveys reveal that teachers and principals in these five states have largely embraced the CCSS and believe that their schools are effectively implementing them. Three quarters of teachers reported that teachers in their school have embraced the CCSS "quite a bit" or "fully"; nine out of 10 said the same for their principal and their district administrators (see Figure 2). Furthermore, more than eight out of 10 teachers agreed that their colleagues as well as their principal were implementing the standards effectively; about three quarters (73%) reported that their district or charter school network leaders were effectively supporting the implementation process (see Figure 3).

FIGURE 2: Teacher Survey Item: *To what extent would you say that the following individuals have embraced the CCSS?*

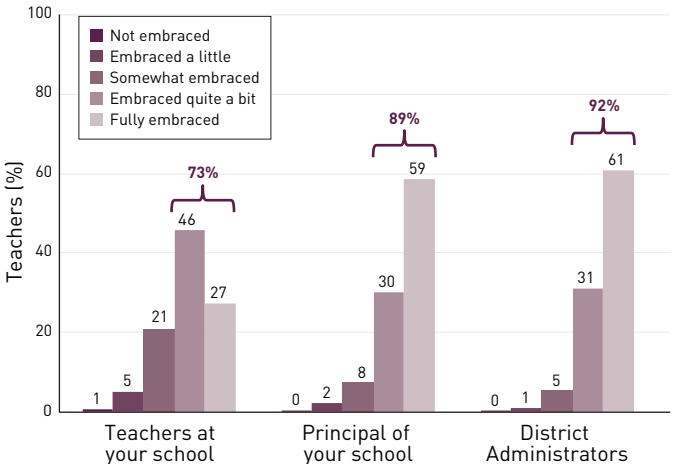
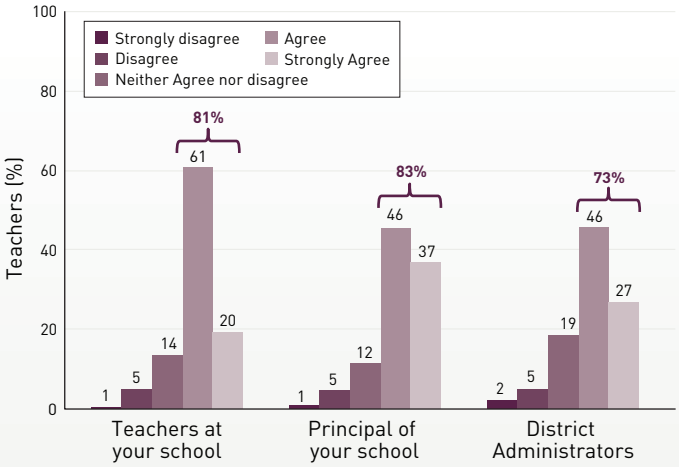


Figure 3: Teacher Survey Item: *To what extent would you agree/disagree that the following are effectively implementing the CCSS?*



Principals' responses were consistent with those of their teachers. As Figure 4 shows, nearly three quarters of principals reported that their mathematics and ELA teachers embraced the CCSS "quite a bit" or "fully." Moreover, almost seven in 10 principals (69%) agreed the CCSS will have a positive effect on student learning in the long run (see Figure 5), suggesting an underlying belief in the potential of the standards to enhance students' academic growth and development.

Seven in 10 principals (69%) agreed the CCSS will have a positive effect on student learning in the long run.

FIGURE 4: Principal Survey Item: *To what extent have teachers of these subjects at your school embraced the CCSS?*

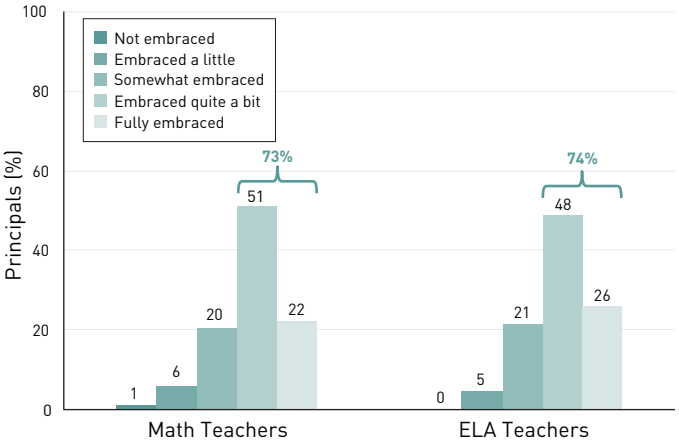
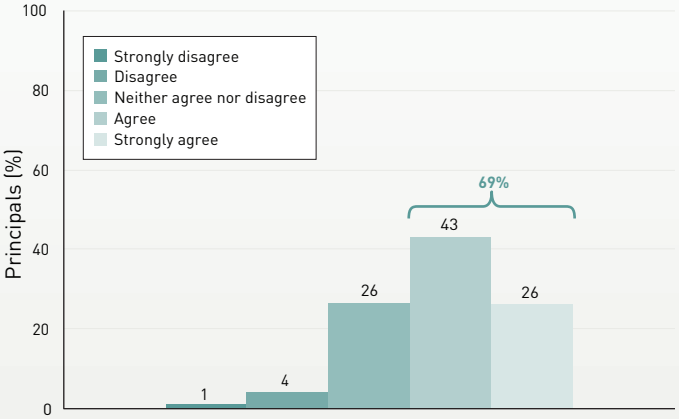
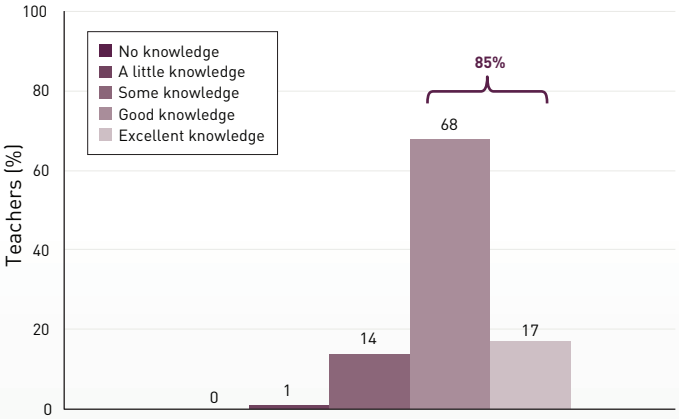


FIGURE 5: Principal Survey Item: *In the long run, do you agree or disagree the CCSS will have a positive effect on student learning?*



In addition to having embraced the Common Core, the majority of teachers reported being knowledgeable about the new standards. As Figure 6 reveals, 85% of teachers reported having good or excellent knowledge of the standards for the grades and subjects that they teach.

FIGURE 6: Teacher Survey Item: *How would you assess your own knowledge of the CCSS for the grade(s)/subject(s) you teach?*



To what extent have teachers changed their instructional practices and materials to align with the Common Core?

The teacher survey included a series of questions about the changes that teachers have made to their classroom instruction and materials, which appear to have been major. As Figure 7 shows, the vast majority of teachers have significantly altered their instructional materials, especially in mathematics. More than eight in 10 mathematics teachers (82%) reported changing at least half of their instructional materials; one in three changed almost all of them. The proportion of ELA teachers who changed their materials was a bit lower; 72% changed at least half of their materials, and one in five (21%) reported changing almost all of their materials.

The teacher survey also included questions about the extent to which teachers have changed their classroom instruction overall, as well as more detailed questions related to specific instructional shifts emphasized by the Common Core. As Figure 7 indicates, more than three quarters of teachers (76%) reported having changed at least half of their classroom instruction as a result of the CCSS; almost one fifth (19%) reported having changed almost all of it.

Figure 8 describes some of the specific changes teachers have made. The vast majority (81%) of mathematics teachers reported having increased their emphasis on students' conceptual understanding of mathematics; 78% have increased the time students spend on real-world application of mathematical skills and knowledge.

Among ELA teachers, 86% reported having increased the amount of assigned writing in which students are expected to ground their views in evidence. Similarly, 85% of ELA teachers reported having increased the amount of informational text/nonfiction that they assign. In addition, 29% of ELA teachers reported decreasing the amount of narrative writing in which students convey real or imaginary experiences; 28% reported decreasing the amount of literature they assign. These findings suggest that teachers are emphasizing the instructional shifts that the CCSS prioritize (i.e., writing with evidence and assigning nonfiction texts). At the same time, there were some surprises: 42% reported increasing narrative writing about personal or imaginary experiences; 38% reported increasing the use of literature in reading assignments. The latter findings could be due to the fact that teachers were previously underemphasizing writing and more challenging literature because neither were included on the legacy tests.

Teacher responses were generally consistent across elementary and middle school grades, with a few notable exceptions. In mathematics, for instance, a greater share of middle school teachers (89%) than elementary teachers (69%) reported having increased their emphasis on developing students' conceptual understanding. Similarly, a larger percentage of middle school teachers (44%) than elementary teachers (32%) have increased their emphasis on procedural skills. Among ELA teachers, a greater share of elementary teachers (35%) than middle school teachers (22%) reported having decreased narrative writing assignments related to real or imaginary experiences.

FIGURE 7: Teacher Survey Item: *Generally speaking, as a result of the CCSS, how much of your classroom instruction has changed? What percentage of your instructional materials in each subject has changed?*

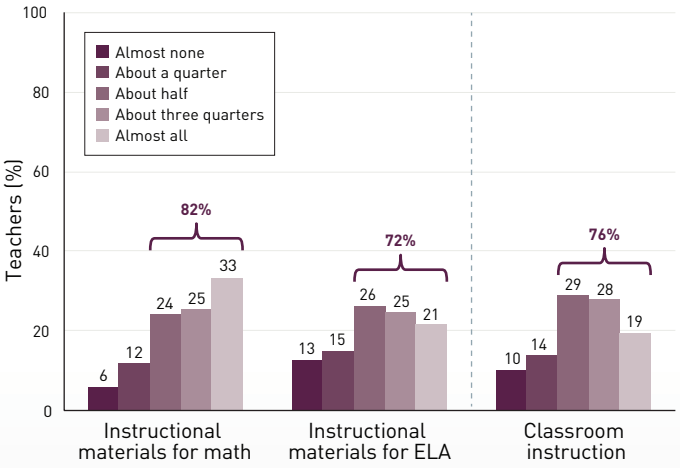
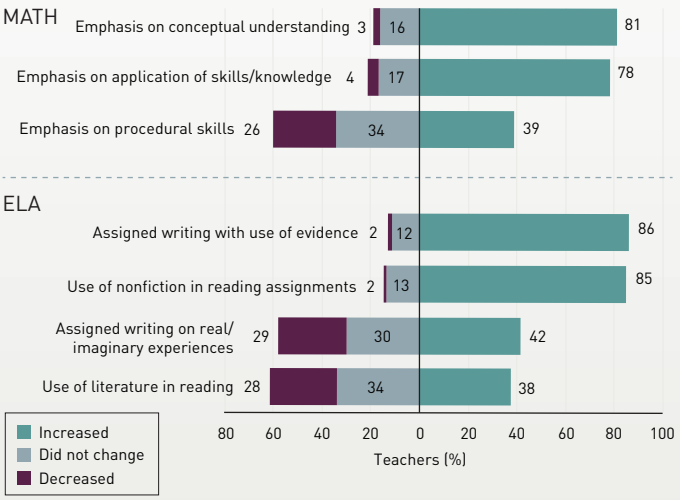


FIGURE 8: Percentage of teachers in each subject who indicated they have increased, not changed, or decreased each listed type of instruction.

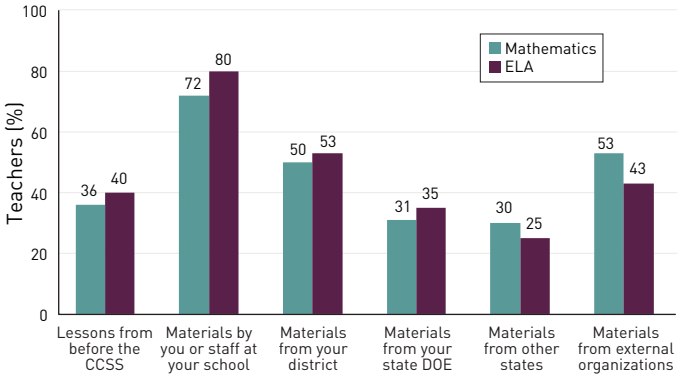


Teachers reported that they tend to use materials they have developed themselves or materials developed by other staff at their schools

What types of CCSS-aligned instructional materials are teachers using?

When asked about the types of CCSS-aligned instructional materials they use, teachers reported that they tend to use materials they have developed themselves or materials developed by other staff at their schools. As Figure 9 shows, 80% of ELA teachers and 72% of mathematics teachers reported using, on at least a weekly basis, curricular materials that they or their colleagues at their school developed. Only about half of the surveyed teachers said they have used materials from their district or charter school network on a weekly basis; similar shares have used materials from external organizations, such as commercial publishers. Finally, between a quarter and a third of teachers reported weekly use of materials developed by the state department of education in their own state or other states.

FIGURE 9: Teacher Survey Item: *How frequently do you use the following resources for instruction in English language arts/mathematics this school year? (Reported percentages combine "Between 1 and 3 times a week" and "Nearly every day.")*



Teachers also reported turning to a multitude of online sources. Table 2 lists the four sources that teachers most frequently identified as being valuable. One third of all surveyed teachers (33%) selected EngageNY and LearnZillion as valuable in aligning their instruction to the new standards; one in five (20%) selected Achievethecore.org. Twenty-eight percent of teachers also found their state's department of education website valuable. While these are the four sources most frequently reported as valuable in each of the survey states, their relative popularity varies across states. EngageNY and LearnZillion are particularly popular in Nevada, where nearly half of the surveyed teachers reported using them. The proportion of teachers using Achievethecore.org is especially high in Maryland, at 28%.

TABLE 2: Teacher Survey: *Select any of the following sources that have been valuable to you in aligning your instruction to CCSS this school year. (Select ALL that apply.)*

	% OF DE TEACHERS	% OF MA TEACHERS	% OF MD TEACHERS	% OF NM TEACHERS	% OF NV TEACHERS	% OF ALL TEACHERS
EngageNY	37%	39%	29%	19%	48%	**33%**
LearnZillion	22%	30%	40%	21%	45%	**33%**
State department of education website	25%	31%	30%	18%	27%	**28%**
Achievethecore.org	18%	17%	28%	13%	19%	**20%**

Note. Table shows the percentage of teachers who selected each source.

Teachers reported feeling only partially prepared to help students perform well on the new assessments.

Are students taking practice tests to prepare for the PARCC and Smarter Balanced assessments?

Aside from some limited pilot testing in 2014, the PARCC and Smarter Balanced assessments were administered for the first time in the spring of 2015. Our survey included a host of questions designed to learn more about teachers' and principals' views and experiences with these assessments, including the use of practice tests and sample items.

Teachers reported using example items or problems from PARCC and SBAC with varying frequency (see Figure 10). A quarter of teachers (23%) reported using sample items at least weekly, while one third of teachers (34%) said they use them one to three times a month.

In 2014–2015, the vast majority of students in the survey states took the computer-based version of the PARCC or Smarter Balanced assessment. (Massachusetts was an exception, where nearly half of the schools that administered PARCC opted for the paper-and-pencil administration.) When asked about how frequently their students have had the opportunity to take computer-based PARCC or SBAC practice tests in the past school year, six in ten teachers (58%) reported that their students had done so at least once (see Figure 11). This share was far higher—about 90%—in New Mexico and Nevada, as well as in schools in Massachusetts that opted for the computer-based PARCC. As Figure 11 also depicts, roughly one quarter of teachers (23%) across the five states reported that their students took a computer-based PARCC/SBAC test at least once a month.

How confident are teachers that they can teach students to succeed on these assessments?

Despite the preparations described above, teachers reported feeling only partially prepared to help students perform well on the new assessments. As Figure 12 shows, only one third of teachers (33%) reported feeling "quite prepared" or "extremely prepared" to teach their students what they need to know to succeed on PARCC/Smarter Balanced; nearly one quarter (24%) reported feeling "slightly prepared" or "not at all prepared."

FIGURE 10: Teacher Survey Item: *How frequently have you used example problems from PARCC or SBAC assessments this school year?*

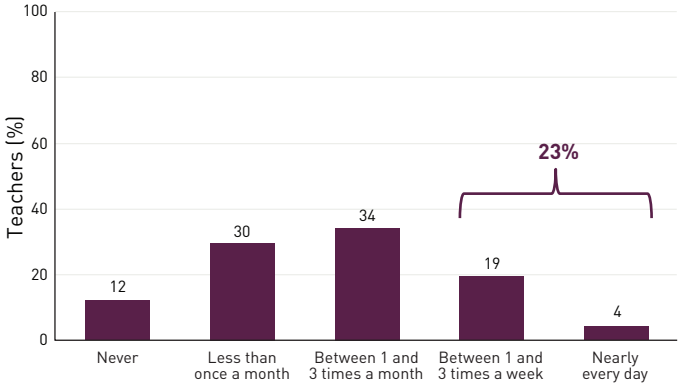


FIGURE 11: Teacher Survey Item: *How many times have your students used a computer or tablet for taking PARCC/SBAC practice assessments this school year?*

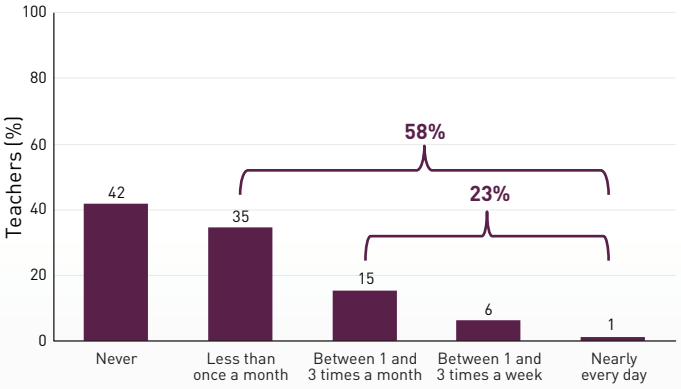
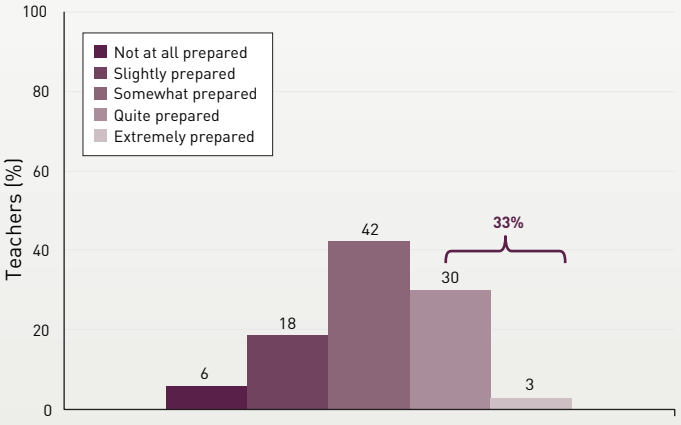


FIGURE 12: Teacher Survey Item: *How prepared do you feel to teach students what they need to know to succeed on the new CCSS-aligned assessments (PARCC/SBAC)?*



How much professional development related to the Common Core have teachers received? To what extent have teachers collaborated with each other in aligning their instruction?

Perhaps more than any other education initiative in recent history, the Common Core requires teachers to substantially change both their instructional practices and their curricular materials. Accordingly, teachers have been receiving substantial amounts of training—both in formal settings and informally at their schools—on multiple aspects of the implementation, from locating or developing high-quality aligned materials to mastering new pedagogical techniques. We asked a series of questions about the duration of training, the topics covered, and the training providers.

As shown in Table 3, the average teacher and principal reported having spent 4.5 days and 5.3 days, respectively, in formal professional development on the Common Core during the prior school year (2013–2014). When we surveyed them in the early spring of 2015, the average teacher and principal reported having spent 3.8 and 4.5 days, respectively, in CCSS-focused professional development so far that school year.

The number of professional development days varied somewhat by topic. Overall, about six in 10 teachers have received one or more days of training on each of the following topics: developing materials and assessments aligned with the CCSS, developing relevant content knowledge, and learning about the PARCC/SBAC assessments (not shown). Teachers did not report as much formal training on how to tailor instruction to students with different needs, such as English language learners—37% reported receiving one or more days of professional development on this topic. Finally, at least half of all teachers reported that colleagues at their schools were the primary providers of Common Core professional development, regardless of the topic.

The survey also asked teachers about their experiences working collaboratively with colleagues on topics related to the Common Core. As Table 4 shows, just under half of all teachers (45%) reported that they have collaborated on a CCSS-related topic every week. This varied widely by topic: The highest share, 36%, reported having collaborated every week to share effective instructional strategies for teaching to the new standards. Twenty-eight percent reported that they have worked together every week on developing CCSS-aligned materials and assessments.

TABLE 3: Teacher/Principal Survey: *How many total days have you spent in formal professional development on the CCSS in the prior school year (2013–2014)/this school year (2014–2015)?*

	AVERAGE NUMBER OF DAYS
Teachers	
This school year (2014–2015)	3.8
Last school year (2013–2014)	4.5
Principals	
This school year (2014–2015)	4.5
Last school year (2013–2014)	5.3

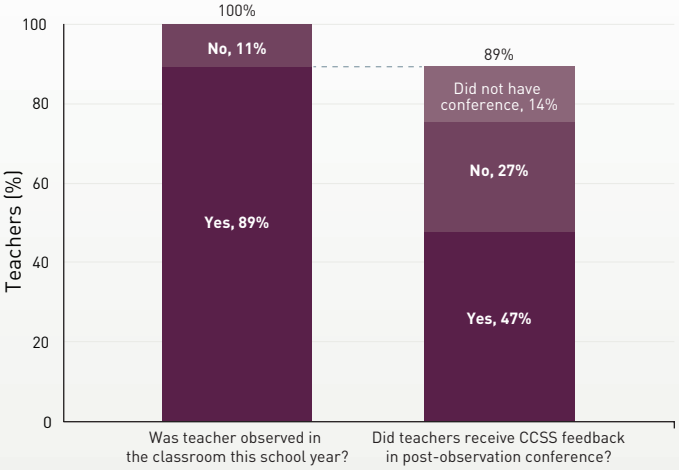
TABLE 4: Teacher Survey: *How frequently did you engage in the following types of collaborative work with colleagues, a team, or a Professional Learning Community this school year?*

	% OF TEACHERS COLLABORATING EVERY WEEK
Sharing effective instructional strategies for the CCSS	36%
Developing aligned materials or assessments	28%
Understanding CCSS and instructional shifts	24%
Analyzing student work to improve mastery of the CCSS	20%
Observing other teachers' lessons that model CCSS-aligned instruction	7%
One or more of these topics	45%

Were teachers observed in the classroom during the 2014–2015 school year? Did they receive explicit post-observation feedback on the alignment of their instruction to the Common Core?

We also asked about the types and amounts of feedback that teachers have received as they have worked to change their instruction. While the vast majority of teachers received classroom observations in 2014–2015, less than half reported receiving feedback that was directly related to the CCSS. As Figure 13 shows, nine out of 10 teachers (89%) have been observed in the classroom at least once as part of their performance evaluation, informally for coaching purposes, or both. However, just under half of all teachers (47%) have received explicit post-observation feedback on their alignment with the CCSS. Moreover, only 44% of teachers reported they could identify specific changes they made in their instructional practices as a result of that feedback (not shown). (Later, we show that specific feedback regarding alignment with the CCSS was associated with higher rates of student success in math.)

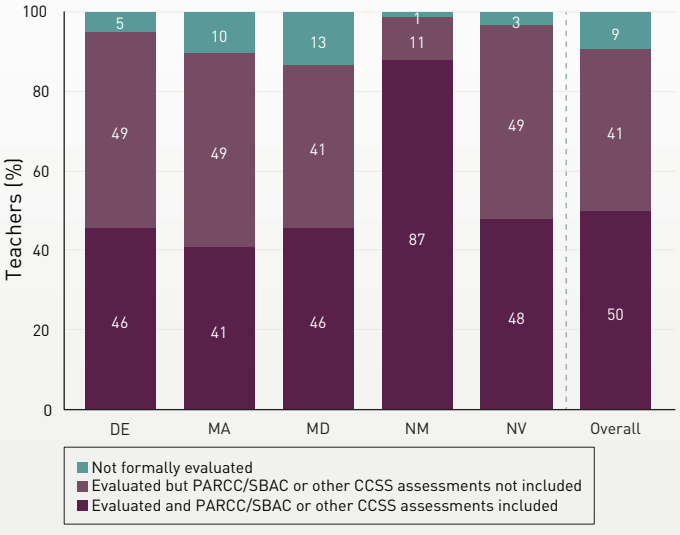
FIGURE 13: Teacher Survey Item: *Were you observed in the classroom this school year, either as part of a formal evaluation or for coaching or peer feedback? In your post-observation conferences, did you receive explicit feedback on the degree to which your instruction was aligned to the CCSS?*



To what extent is students' performance on CCSS-aligned assessments included in teachers' formal performance evaluations?

We asked teachers whether their students' performance on PARCC, Smarter Balanced, or any other CCSS-aligned assessment would play a role in their formal performance evaluation in 2014–2015. (The wording of the question was intentionally broad and included formative and interim assessments as well as the incorporation of student performance in evaluation measures like student learning objectives.) Overall, half of all teachers reported that student performance on some type of CCSS-aligned assessments would play a role in their performance evaluations (see Figure 14). This share was particularly high—at 87% of teachers—in New Mexico, the only state in the study where students' 2014–2015 PARCC test scores contributed to teachers' performance evaluations. In the remaining states, the Common Core student outcomes would have come from interim assessments, district assessments, or student learning objectives.

FIGURE 14: Teacher Survey Item: *Will your students' performance on PARCC/Smarter Balanced or other CCSS-aligned assessments (including formative or interim) play a role in your formal performance evaluation this school year (e.g., through student learning objectives, district-determined measures, etc.)?*



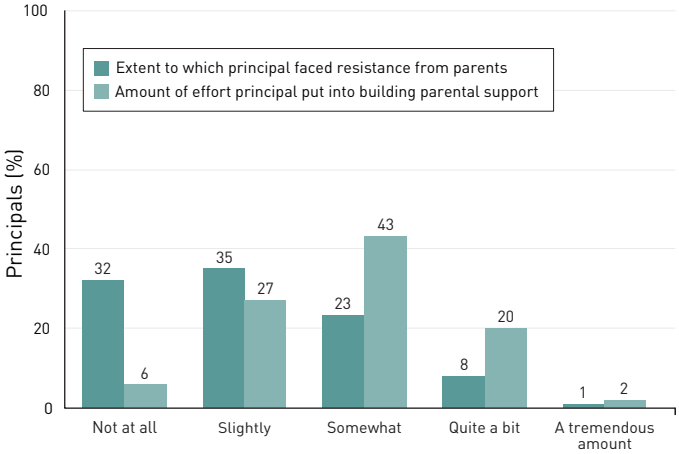
Have principals encountered resistance to the Common Core from parents?

As of the spring of 2015, principals in these five states described facing little resistance to the new standards from parents. One third of principals (32%) reported they have not encountered any parental opposition to the standards at all; another third (35%) reported having faced slight resistance (see Figure 15). In addition, 9% reported "quite a bit" or "a tremendous amount" of resistance. At the same time, two thirds of principals (66%) shared that they have put at least some effort into engaging parents to build support for the CCSS. (We have no information on whether perceptions of parental opposition have grown since the surveys were administered last spring.)

The descriptive findings presented here provide a snapshot of how the teachers and schools in our five states have been implementing the CCSS to date. As such, these results provide a foundation from which states can measure their future progress implementing the standards and preparing students for PARCC and SBAC. In addition, these results can help state policymakers assess the extent to which the current reality reflects their intended objectives for this stage of Common Core implementation.

While we hope that such descriptive findings are helpful in their own right, they do not address a critical question: Which of the strategies and supports helped students succeed on the PARCC and SBAC tests in the spring of 2015? Did schools where teachers or principals spent more time engaged in Common Core-related professional development have students that performed better on the new assessments? Did the schools where teachers reported particular types of instructional changes perform higher on PARCC and SBAC? Is there any evidence that a particular curriculum, textbook, or online resource is related to students' performance? We investigate these and other questions in the following section.

FIGURE 15. Principal Survey Item: *To what extent have you faced resistance to the CCSS from parents of students in your school? How much effort have you put into building support for CCSS implementation among parents of students in your school?*



Section III. Which Implementation Strategies Helped Students Succeed?

A novel feature of our research design is our ability to link teachers' survey responses to their students' test scores on the 2014–2015 PARCC and SBAC assessments, as well as to students' demographic characteristics and prior performance on the states' legacy assessments. This allowed us to investigate which strategies and which of the supports they received were associated with their performance on PARCC and SBAC, controlling for other factors that might affect their performance. We controlled for students' baseline test scores and characteristics (as well as the average prior achievement and characteristics of students in their classroom). In addition, we controlled for teachers' value-added on the legacy test in the prior school year. While a correlational study of this nature cannot support the same causal interpretation as a randomized controlled experiment, our design allowed us to provide much more timely evidence of promising approaches that teachers and schools are using to implement the Common Core.

As any educator knows, implementing an initiative as complex as the Common Core requires that schools use more than one strategy—for example, aligning curricula to the new standards while simultaneously offering teachers professional development and measuring students' progress on new interim assessments. While this type of multifaceted approach is to be expected, it makes it challenging for researchers to disentangle the importance of each individual strategy. Given the practical realities of how teachers and schools are implementing the CCSS, we conducted a principal components analysis on more than 50 survey items to identify clusters of strategies that schools tended to implement together. Based on this analysis, we consolidated the 50 survey items into 12 composite indices. We then analyzed the association between each composite index and students' performance on PARCC and SBAC. (Appendix E provides additional technical details about how the indices were created.) The 12 indices are described in Table 5.

TABLE 5. Composite Indices of CCSS Implementation Strategies

INDEX	SURVEY ITEM
Principal describes school as fully embracing and effectively implementing the CCSS	Principal agrees/disagrees school's math (or ELA) curriculum is well suited to help students master the CCSS
	Degree to which principal reports math (or ELA) teachers have embraced CCSS
	Degree to which principal reports school is prepared in terms of math (or ELA) curricula
	Degree to which principal reports school is prepared in terms of math (or ELA) formative/interim assessments
	Degree to which principal reports math (or ELA) teachers are prepared in terms of instructional practices
	Degree to which principal reports math (or ELA) teachers are prepared in terms of content knowledge
Teachers describe school as fully embracing and effectively implementing the CCSS	Math (or ELA) teacher reports that teachers in their school have embraced CCSS quite a bit or fully
	Math (or ELA) teacher reports that principal has embraced CCSS quite a bit or fully
	Math (or ELA) teacher reports that district administrators have embraced CCSS quite a bit or fully
	Math (or ELA) teacher agrees/strongly agrees that teachers at their school are effectively implementing CCSS
	Math (or ELA) teacher agrees/strongly agrees that principal is effectively implementing CCSS
	Math (or ELA) teacher agrees/strongly agrees that district leaders are effectively implementing CCSS
	Math (or ELA) teacher reports no, a little, some, good, or excellent knowledge of CCSS

Table 5. Composite Indices of CCSS Implementation Strategies, cont.

INDEX	SURVEY ITEM
Teachers describe substantial shifts in instruction and materials	Percent of classroom instruction that teacher has changed as a result of CCSS
	Percent of math (or ELA) instructional materials teacher has changed as a result of CCSS
	Math (or ELA) teacher uses lessons from before the CCSS with specified frequency (reverse-coded)
	Math teacher increased/did not change/decreased the amount of emphasis on conceptual understanding in math
	Math teacher increased/did not change/decreased the amount of time students spend on application in real-world situations
	ELA teacher increased/did not change/decreased the amount of informational text/nonfiction in reading assignments
	ELA teacher increased/did not change/decreased the amount of writing in which students use evidence
Students use CCSS-aligned practice tests	Teacher's students use a computer or tablet for taking PARCC/SBAC practice assessments with specified frequency
	Teacher uses example items from PARCC/SBAC with specified frequency
	Principal has encouraged teachers to administer CCSS-aligned practice assessments
Teachers report frequent classroom observations and feedback	Teacher was observed by principal/assistant principal with specified frequency
	Teacher was observed by department head with specified frequency
	Teacher was observed by a peer teacher with specified frequency
	Teacher was observed by other with specified frequency
	Teacher was observed by an instructional coach with specified frequency
	Teacher was observed and received post-observation feedback on CCSS alignment this school year
Principal is leading CCSS implementation, including adapting classroom observations	Degree to which principal feels prepared to identify CCSS instructional practices
	Principal changed the way school conducts classroom observation (including informal and formal observations)
	Degree to which principal considers teacher evaluation system to be aligned with CCSS
	Degree to which principal thinks simultaneous implementation of new teacher evaluation system has made CCSS implementation easier
	Number of days of professional development principal had last school year
	Principal agrees/disagrees that CCSS will have positive effect on learning
	Principal received a specified level of district support for CCSS implementation for math
	Degree to which principal views CCSS implementation as a priority
Principal reported an early start on CCSS preparation	When school began gap analysis between old and new standards for math (or ELA)
	When school began alignment of instructional materials for math (or ELA)
	When school began CCSS professional development for math (or ELA) teachers

Table 5. Composite Indices of CCSS Implementation Strategies, cont.

INDEX	SURVEY ITEM
Teachers are developing materials themselves or with colleagues in their schools	Math (or ELA) teacher uses CCSS-aligned materials developed by him- or herself, or staff at his or her school, with specified frequency
	Math (or ELA) teacher used textbook for 1 or 2 years (compared to no textbook or 3+ years), indicating a change of book (reverse-coded)
	Teacher uses assessments developed by him- or herself, or staff at his or her school, with specified frequency
Teacher professional development on CCSS	Number of days of professional development teacher received this school year
	Number of days of professional development teacher received last school year
Teacher performance evaluations include student scores on CCSS-aligned assessments	Teacher's performance evaluation includes his or her students' performance on PARCC/SBAC or other CCSS-aligned assessments
Teacher collaboration	Principal says teachers will collaborate on preparing for the CCSS with specified frequency this school year
	Teachers collaborate on understanding CCSS and instructional shifts with specified frequency
	Teachers collaborate on aligning materials or assessments to the CCSS with specified frequency
	Teachers collaborate on sharing effective instructional strategies for preparing students to meet CCSS with specified frequency
	Teachers collaborate on observing other teachers' lessons that model alignment with specified frequency
	Teachers collaborate on analyzing data to improve student mastery with specified frequency
School context	Teacher agrees/disagrees his or her school is a good place to work and learn
	Teacher agrees/disagrees teachers in his or her school are held to high professional standards
	Teacher agrees/disagrees students in his or her school follow rules of conduct
	Teacher agrees/disagrees parents/guardians support teachers

To the extent that teachers in the same school may describe the same implementation strategy differently, measurement error in teacher responses would cause us to understate the association between different strategies and students' performance based on teacher-level differences. As a result, we averaged teachers' survey responses to the school level before conducting the regression analyses described below. Therefore, we are focusing on between-school differences in implementation, using the average teacher response in each school.

Table 6 reports the relationship between each of the composite indices of school implementation and student achievement on the CCSS-aligned assessments.[8] The composite indices are standardized and reported in terms of school-level standard deviation units. The outcome variable is students' standardized scaled scores on the PARCC or SBAC tests, standardized by grade and state. The coefficients in Table 6 represent the change in test scores per one-unit change in the independent variable (the index) in the corresponding row.[9]

In general, we find more statistically significant relationships for mathematics than for English. Specifically, the following three composite indices were statistically significantly related to student achievement in mathematics, after controlling for other factors:

- The frequency and specificity of feedback from classroom observations.
- The number of days of professional development.
- The inclusion of student performance on CCSS-aligned assessments in teachers' evaluations.

The only factor that was statistically significantly related to students' performance in English was the school context factor, which essentially measured the degree to which teachers perceived their school to be a good place to work and learn. Although interesting, it is difficult to translate that finding into action. We describe the findings in greater depth below:

Mathematics

As Table 6 shows, a difference of one standard deviation in the observation and feedback index was associated with an increase of 0.044 standard deviations in students' mathematics test scores—roughly the equivalent of 1.4 scale score points on the PARCC assessment and 4.1 scale score points on the SBAC.

TABLE 6. Associations Between Select CCSS Implementation Strategies and Student Performance on PARCC and SBAC

	MATH COEFFICIENT (STD. ERROR)	ELA COEFFICIENT (STD. ERROR)
Principal describes school as fully embracing and effectively implementing the CCSS	-0.013 (0.018)	0.012 (0.015)
Teachers describe school as fully embracing and effectively implementing the CCSS	0.032* (0.016)	-0.015 (0.013)
Teachers describe substantial shifts in instruction and materials	0.020 (0.016)	0.003 (0.016)
Use of CCSS-aligned practice tests	-0.016 (0.021)	-0.025 (0.021)
Teachers report frequent observations and feedback	0.044** (0.018)	-0.019 (0.018)
Principal is leading CCSS implementation, including adapting classroom observations	0.010 (0.016)	-0.007 (0.012)
School reported an early start on CCSS preparation	0.004 (0.014)	0.014 (0.015)
Teachers are developing materials themselves or with colleagues in their schools	0.025 (0.018)	0.023 (0.014)
Days of professional development on CCSS	0.045*** (0.016)	0.017 (0.022)
Teacher performance evaluations include student scores on CCSS-aligned tests	0.054*** (0.019)	0.011 (0.020)
Teacher collaboration	0.028 (0.019)	-0.018 (0.012)
School context	0.058 (0.036)	0.081** (0.031)

Note. Units are student-level standard deviations.
* p < 0.1; ** p < 0.05; ***p < 0.01

[8] The results discussed in this section are derived from models in which each index is entered separately, without controlling for the other indices. However, the results we highlight are robust to the simultaneous inclusion of the other composite indices in the same model.

[9] To convert the outcomes in Table 6 into percentages, one would multiply by roughly 21. (This is similar to the calculation used to generate normal curve equivalents [NCEs].) Readers may also be interested in converting to scaled score points. To do so, one would multiply by 31 and 34 in math and ELA, respectively, to convert to scaled score points on the PARCC tests, and by 91 in math and 91 in English on the SBAC tests. (The standard deviation of PARCC mathematics test scores was equivalent to roughly 31 scale score points, though it varied somewhat by grade. On the SBAC mathematics assessment, a standard deviation was equivalent to approximately 91 scale score points, although it ranged from 75 points in Grade 4 to 112 points in Grade 8.)

Although not large, this is a moderately sizeable effect. For comparison purposes, many studies have found that students assigned to novice teachers—those with no prior teaching experience—learn about 0.08 to 0.10 standard deviations less than similar students assigned to experienced teachers (Clotfelter, Ladd, & Vigdor, 2006; Harris & Sass, 2006; Jacob, 2007; Rivkin, Hanushek, & Kain, 2005; Staiger & Rockoff, 2010). Thus, the effect of a one standard deviation difference in the index of observations and feedback is equivalent to increasing the proportion of students assigned to novice teachers by 50 percentage points.

The relationship appears to be driven primarily by the regular delivery of feedback tied to the Common Core. When we unpacked the index into its component parts—the number of observations that teachers received and the delivery of explicit feedback on the CCSS—it was the latter that mattered most. A 10-point difference in the percentage of teachers in a school who reported receiving explicit feedback was associated with a 0.01 standard deviation difference in students' performance on the PARCC/SBAC ($p < 0.05$). We also found that the frequency of observations by a department chair—someone with content knowledge in mathematics—was particularly impactful.

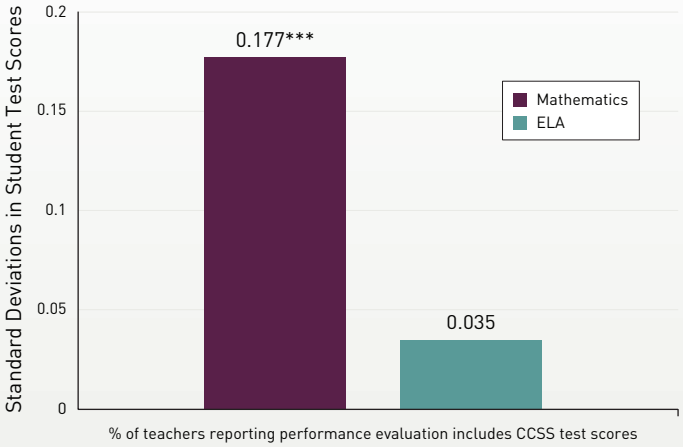
The importance of the frequency of observations and the specificity of feedback is consistent with findings of Taylor and Tyler (2012) in Cincinnati, as well as Papay, Taylor, Tyler, and Laski (2015) from Tennessee. In Cincinnati, Taylor and Tyler found that teachers who were observed and provided with explicit feedback on a formal rubric had students who performed 0.07 standard deviations higher in the year of observation and 0.11 standard deviations higher the subsequent year. In the more recent paper based on a randomized field trial in Tennessee, stronger teachers in a randomly chosen subset of schools were asked to mentor the weaker teachers in their own schools. Student achievement was 0.055 standard deviations higher in the treatment schools overall and 0.12 standard deviations higher in the weaker teachers' classrooms.

We also found a positive effect for the number of days teachers participated in **Common Core-related professional development (PD).** In Table 3, we reported that the average teacher received 3.8 days of PD in 2014–2015 and 4.5 days in 2013–2014. In a school that was one standard deviation above the mean school, math teachers spent, on average, about two additional days in PD each year. In other words, when teachers received two additional days of PD, the average student's performance on the mathematics PARCC/SBAC test was 0.045 standard deviations higher ($p < 0.01$), relative to similar schools.

We also examined the relationships between several individual survey items and students' PARCC and SBAC mathematics scores. Consistent with our findings on the payoff to professional development, we found that schools with higher percentages of teachers who reported being **knowledgeable about the CCSS** had students with higher mathematics scores. A 10-point difference in the percentage of math teachers reporting good to excellent knowledge of the standards was associated with a 0.015 standard deviation difference in math achievement ($p < 0.01$).

As we described in Section II, half of all teachers reported that student **achievement on CCSS-aligned assessments** played a role in their formal performance evaluations. We found that a 100-point difference in the percentage of teachers reporting that student test scores on a CCSS-aligned assessment would count in their formal evaluation was associated with a 0.18 standard deviation difference in students' achievement on the PARCC and SBAC mathematics assessments (see Figure 16).

FIGURE 16: Relationships between inclusion of students' test scores on CCSS-aligned assessments in teachers' performance evaluations and students' performance on PARCC/SBAC.



Note. Figure presents differences in student test scores between schools where 0% of teachers reported each strategy and schools where 100% of teachers reported each strategy.

Notably, we did not find strong associations between students' performance on the mathematics assessments and the extent to which teachers changed their classroom instruction or instructional materials.

We also examined whether there was a relationship between students' performance on PARCC or SBAC and the particular mathematics curricula and textbooks that teachers and schools were using. We found that 45% of all mathematics teachers switched to a new textbook during the 2013–2014 or 2014–2015 school year. (Another quarter of teachers, 24%, had used their current textbook for three or more years, and 31% were using no textbook at all.) While teachers in our sample reported using many different textbooks, there were five math textbooks that teachers reported using most frequently. When there were 30 or more teachers in the sample using a given textbook, we measured differences in their students' performance relative to the remaining students in the state.

We found no statistically significant difference in achievement for students using three of the textbooks. However, two textbooks were statistically significantly related to students' performance—one positively and one negatively. The average student using *GO Math!* (Houghton Mifflin Harcourt) as their primary textbook scored 0.1 standard deviations higher ($p < 0.05$) than similar students using other textbooks or no textbook at all. In contrast, the average student using another textbook scored 0.15 standard deviations lower ($p < 0.05$) on the new math assessments. (We are not releasing the name of the second textbook because we could not confirm which edition teachers were using.) Both estimates are sizable, implying that textbook choice is a high-stakes decision.

Our finding of positive achievement gains for students using *GO Math!* is consistent with an independent curriculum review published by EdReports.org, which gathered panels of math educators to evaluate the alignment of 20 mathematics textbooks. In Grades 4 through 8, *GO Math!* ranked in the top three in terms of focus, coherence, rigor, and mathematical practice-content connections. *GO Math!* was also ranked highly in a separate review by William Schmidt and his colleagues at Michigan State.[10]

English Language Arts

The only statistically significant predictor of students' performance on the PARCC and SBAC ELA assessments was a measure of school context, which we borrowed from New Teacher Center's (n.d.) Teaching, Empowering, Leading and Learning (TELL) survey. The school context index captures the degree to which teachers perceive a school to be a pleasant place to work, where they are held to high professional standards, and where students behave and parents are supportive. We find that schools where teachers reported a positive work environment performed statistically significantly higher on the ELA test.

Additional Results

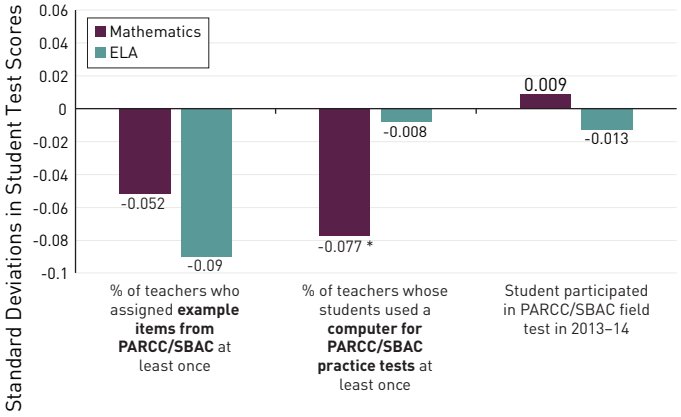
We did not find statistically significant relationships for some other implementation strategies that practitioners and educators frequently cited as important during our initial interviews and in the surveys. For example, a full quarter of all teachers ranked collaboration with their colleagues as the single most important strategy in helping them prepare for the new standards; another 15% considered it the second most important strategy. Moreover, nearly half of the teachers (45%) reported collaborating with their colleagues every week on a CCSS-related topic. However, we did not find any significant relationships between the frequency of teacher collaboration and student achievement for either mathematics or ELA. Moreover, we did not find that other factors—such as getting more frequent observations, receiving feedback, changing instructional materials, developing one's own materials, receiving more professional development—accentuated the effect of collaboration. Given the extent to which teachers endorsed collaboration, future work should investigate whether there are specific types of collaboration that we were unable to pinpoint in our survey that do pay off for children.

In Section II of this report, we reported that about six in 10 teachers have assigned PARCC/SBAC example questions to their students at least once a month. Six in ten teachers also reported that their students have taken a computer-based PARCC/SBAC practice test at least

[10] Based on personal communications with William Schmidt.For a description of the methodology used, see http://education.msu.edu/csc/pdf/Navigator-Report.pdf.

once. Neither of these practice strategies seems to be related to students' performance (Figure 17). Similarly, a subset of students in each state participated in the spring 2014 field tests for PARCC and SBAC. However, we found no evidence that such students outperformed similar students who were not exposed to the field tests the prior spring.[11]

FIGURE 17: Relationships between the use of PARCC/SBAC example items, the use of computers for PARCC/SBAC practice tests, and student participation in the 2013–2014 PARCC/SBAC field tests and students' performance on PARCC/SBAC.



Note. The figure presents differences in student test scores between schools where 0% of teachers reported each strategy and schools where 100% of teachers reported each strategy. Participation in the PARCC/SBAC field tests is a student-level indicator obtained from state data.

[11] The New Mexico Public Education Department was not able to provide records on which students participated in the 2013–2014 PARCC field tests. We therefore excluded New Mexico from analyses of this indicator.

Section IV. Gauging the Sensitivity of the New Assessments to Instructional Differences Between Teachers

A goal of the CCSS is to encourage teachers and schools to develop students' skills at writing, analyzing, and solving problems. Our surveys reveal that teachers in the participating states are, indeed, reporting greater emphasis in those areas. However, in order for those efforts to persist and for school districts to find effective means of supporting teachers in making that shift, the new tests must be sensitive to teachers' efforts to develop those skills. If the tests do identify teachers who are particularly successful at developing student writing, for instance, school districts will be more able to reward and retain those teachers. Moreover, they will be able to measure the impact of professional development programs aimed at helping teachers develop those skills.

Although we cannot point to specific implementation strategies that were effective in English language arts, our findings suggest that the new assessments are more sensitive to differences between teachers, especially in middle school English classes.

In order to measure the change in the overall sensitivity of the tests, we estimated the variation in teacher effects on student achievement on legacy and CCSS-aligned assessments. Specifically, we measured the difference between each student's actual and expected performance on the end-of-year assessments, based on the student's own prior achievement, demographic characteristics, and program participation, as well as the mean prior achievement and characteristics of his or her peers and school. We estimated teacher impacts by the degree to which the average student in the class outperformed (or underperformed in relation to) students with similar prior achievement and peers. We then gauged the variation across teachers in these effectiveness estimates. (For more details, see Appendix E.)

Essentially, we asked, "How much did the performance of students seem to depend upon the specific teacher who taught them?" We measured how the apparent importance of teachers changed over time, before and after the administration of the new assessments. If instructional differences between teachers mattered to the same degree for the new tests as for the legacy tests, then we should see little change in the variation in teacher effects. If, on the other hand, differences in instruction mattered more for the new tests, then we would expect to see an increase in the variation in student performance between teachers.

Our findings suggest that the new assessments are more sensitive to differences between teachers, especially in middle school English classes.

We estimated teacher effects for three school years, 2012–2013, 2013–2014, and 2014–2015. We report the results separately by grade level and subject as well as by year. For instance, as reported in Figure 18, a standard deviation in teacher effects in elementary math was equivalent to 0.20 student-level standard deviations in 2012–2013.[12] This means that the average student assigned to a teacher in the top quartile scored 0.50 standard deviations, or roughly 10 percentage points, higher than a student assigned to a teacher in the bottom quartile. That is quite a large difference in achievement for two teachers to produce in a single school year. For comparison purposes, the Black–White achievement gap is equivalent to approximately 0.8 standard deviations, or 16 percentage points (Staiger & Rockoff, 2010).

[12] The reported standard deviations for elementary teacher effects were adjusted downward to reflect the fact that they include teacher-by-year (or teacher-by-class) error variance. To calculate the adjustment factors, we ran a multi-year middle school model that estimated teacher, teacher-by-year, and class-level variance components. In these models, class-level variance accounted for 20.9% of total teacher, teacher-by-year, and class-level variance in math, and 20.3% in ELA. The variance of elementary teacher effects were adjusted downwards in those proportions. We were able to estimate the class-level variances in middle school by the variation in performance between different sections taught by the same teacher.

Although teacher effects grew in both elementary and middle schools and in both math and ELA between 2014 and 2015, the increase was especially large in middle school ELA, where the standard deviation in teacher effects grew by almost 50 percent (from 0.12 to 0.18).

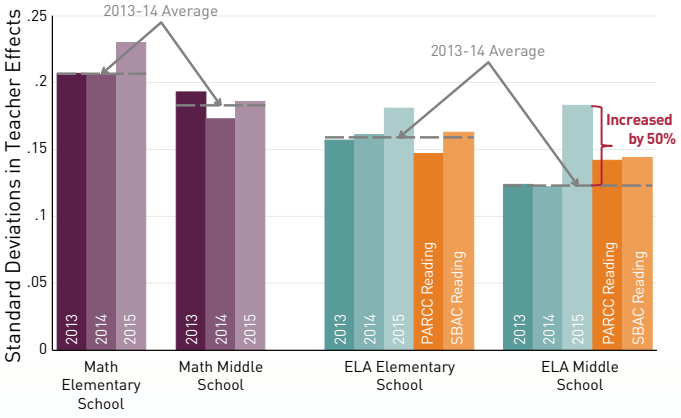
In the past, it has been common for researchers to find that teachers account for less variation in student performance in literacy than in math. Many researchers have interpreted such evidence to mean that teachers have smaller impacts on students' literacy than on their math skills. However, on the new CCSS-aligned tests, the variation in teacher effects on middle school ELA is similar in magnitude to the variation in teacher effects on math.

Why did the variation in teacher effects on the CCSS-aligned tests middle school increase? There is suggestive evidence that it is due to the greater weight placed on student writing. Given the high cost of scoring student writing, the legacy assessments in most states were primarily multiple choice tests of reading comprehension. Even as the standards called for students to become more proficient writers in middle school, the tests did not measure student writing. In Delaware, for instance, all of the items on the legacy middle school English exams were multiple choice. Even in Massachusetts, a state widely regarded as having a high quality legacy assessment, the writing prompts were limited to Grades 4 and 7. The failure to include writing would have diminished the sensitivity of the legacy assessments to differences in teachers' writing instruction. (It may also have weakened teachers' incentives to develop students' writing abilities.)

To investigate the role that writing may have played, we estimated teacher effects solely on the reading portion of the PARCC and SBAC tests. We have reported those in Figure 18 as well. When limited to the reading items, the teacher effects on the PARCC and SBAC tests are similar in magnitude—a standard deviation in teacher effectiveness corresponds to 0.14 standard deviations in student achievement—to those previously observed on the legacy state assessments. Apparently, the rise in variance of teacher effects is due to the new subscores on the tests.[13] On the PARCC test, the only other subscore is writing and, in a separate analysis, we found larger variance in teacher effects on writing. On the SBAC test, the three additional subscores are in writing, speaking and listening, and research and inquiry. When analyzing the results further, we saw that most of the increase was due to increased variance in teacher effects on the writing subscore, rather than speaking and listening or research and inquiry.

On one hand, our survey identified few school-level implementation strategies that were predictive of instructional improvement and student achievement on the CCSS in English. None of the factors that were associated with better mathematics achievement seemed to predict better English achievement. On the other hand, the new assessments seem to be more sensitive to instructional differences between teachers, especially in middle school English. These results suggest that we need more work to find effective interventions designed to help teachers with writing instruction. In future surveys of this kind, researchers should include more detailed questions about the types of supports in writing instruction that teachers have received.

FIGURE 18: Standard deviation of teacher effects, by subject, grade level, and year.



[13] Another possible explanation is the fact that the student baseline scores from 2014 did not include writing, while the outcome scores did. It seems unlikely, however, given that the proportion of the variance in the PARCC and SBAC scores "explained" by baseline achievement and student and peer characteristics was similar to that from earlier years. The proportion of variance in the outcomes did not decline. Also, in the year before the new tests, the variation in English teacher effects in Massachusetts was larger in Grades 4 and 7, which included writing. We will see if the variation in teacher effects in ELA remain high in 2015–2016, when students' baseline scores will include controls for writing.

Conclusion

In the five states included in this study, teachers and principals have embraced the CCSS and believe their students will benefit from them in the long run. Moreover, they report having made substantial changes in their lesson plans and instructional materials to align with the new standards. Much of teachers' and principals' professional development has been focused on preparing for the Common Core, and in one state—New Mexico—policymakers have altered the statewide teacher evaluation system to include data on students' performance on PARCC. While the political debate over the Common Core has swirled, teachers and administrators have been working to implement the standards. It would be ironic if states, in the name of resisting federal power, were to undercut the investments their teachers have made and change direction yet again.

Our results identify several state- and district-level policies that can support students' mastery of the new, more ambitious standards. For instance, we find that more training and more classroom observations with explicit feedback on the required changes in instruction are associated with greater student achievement on the PARCC and SBAC math assessments. Yet, in many schools and districts, observations of teachers' classroom practices have not yet been adapted to reflect the new standards. Only about half of teachers reported getting explicit feedback related to the Common Core. Teachers will be more successful in implementing the standards if they are not simply left to make instructional changes on their own and instead get the feedback they need to change their instruction.

We also find that students perform better when teachers are being evaluated based on student achievement. Critics of teacher evaluation reforms have worried that doing so leads teachers to teach to the test. This is a greater concern when the assessments are measuring low-level skills. With more rigorous assessments designed to measure higher standards, such incentives may be helpful in encouraging schools to meet the new standards. For instance, the new math assessments require students to show their work and demonstrate mathematical reasoning. Such changes will hopefully lead to better math instruction.

Finally, although we cannot yet point to specific ways to help teachers improve student performance on the English assessments, our results suggest that the new assessments are more sensitive to the work they are doing, especially in middle school English language arts. In the past, state assessments have focused heavily on reading comprehension and, therefore, missed what middle school teachers may have been doing to support student writing. In turn, the paucity of student writing on the legacy tests may have led some teachers to lessen their emphasis on writing. The new assessments are more sensitive to writing instruction and, hopefully, may encourage teachers to emphasize writing in their classrooms.

As schools in multiple states continue to implement the new standards in coming years, we will have more opportunities to track implementation and identify predictors of success. In addition to providing the field with timely evidence about promising implementation strategies, we believe that the design of this study can serve as a useful model for informing future implementation. By collaborating with states committed to using evidence to inform policy and practice, we were able to overcome many of the traditional limitations of survey-based research (e.g., low response rates, inability to link teachers to their students, inability to identify and link individual survey responses to additional sources of data). Through these collaborations, we are able to provide timely evidence on the implementation of the Common Core. We hope this is just the first of many future examples of rigorous, fast-turnaround studies designed to support local implementation.

Appendix A

TABLE A1: Student and Teacher Characteristics in Sample and Non-Sample Schools, by State

	DELAWARE			MARYLAND		
	Sample schools	Non-sample schools	Difference (std. error)	Sample schools	Non-sample schools	Difference (std. error)
School average 2013–2014 math score *(standard deviations)*	-0.029	-0.204	0.175 (0.117)	-0.172	-0.086	-0.086 (0.098)
School average 2013–2014 ELA score *(standard deviations)*	-0.021	-0.203	0.181 (0.123)	-0.154	-0.088	-0.066 (0.091)
School percentage of FRPL students	54.6%	59.9%	-5.3% (0.057)	52.8%	51.3%	1.5% (0.056)
School percentage of Black students	26.8%	36.8%	-10.0% (0.065)	42.6%	37.4%	5.2% (0.062)
School percentage of Hispanic students	23.7%	16.3%	7.3% (0.067)	11.8%	13.7%	-1.8% (0.028)
Average teacher prior math VAM	0.009	-0.004	0.014 (0.018)	-0.008	0.001	-0.010 (0.012)
Average teacher prior ELA VAM	0.021	-0.001	0.022** (0.010)	-0.002	0.001	-0.004 (0.005)
Average teacher experience *(years)*	12.2	12.6	-0.449 (0.614)	11.3	11.0	0.371 (0.537)
	MASSACHUSETTS			**NEW MEXICO**		
	Sample schools	Non-sample schools	Difference (std. error)	Sample schools	Non-sample schools	Difference (std. error)
School average 2013–2014 math score *(standard deviations)*	0.009	-0.037	0.047 (0.133)	-0.011	-0.036	0.025 (0.088)
School average 2013–2014 ELA score *(standard deviations)*	-0.051	-0.042	-0.009 (0.107)	-0.016	-0.025	0.009 (0.086)
School percentage of FRPL students	38%	42.7%	-4.7% (0.081)	82.6%	79.3%	3.2% (0.068)
School percentage of Black students	10.7%	9.0%	1.7% (0.045)	1.2%	1.7%	-0.5% (0.004)
School percentage of Hispanic students	17.7%	18.3%	-0.6% (0.044)	56.9%	60.5%	-3.6% (0.059)
Average teacher prior math VAM	-0.022	0.002	-0.024 (0.020)	0.02	0.003	0.017 (0.013)
Average teacher prior ELA VAM	0	0.002	-0.001 (0.019)	0.002	0.002	0.001 (0.009)
Average teacher experience *(years)*	9.7	10.4	-0.687 (0.935)	11.2	11.1	0.069 (0.694)

Note. FRPL = free and reduced-price lunch; VAM = value-added measure.

The technical difficulties Nevada experienced with the 2014–2015 Smarter Balanced administration left most students without SBAC test scores. As these scores serve as the main outcome measure in this study, we were unable to include surveys from Nevada in the full analyses and did not collect any individual student or teacher data from its two participating districts. However, using aggregate school-level information from the Nevada Department of Education website, we confirmed that the survey schools selected at random from Clark County School District do not differ from the rest of the district schools in important student demographic and achievement characteristics. See Table A2 below for more information:

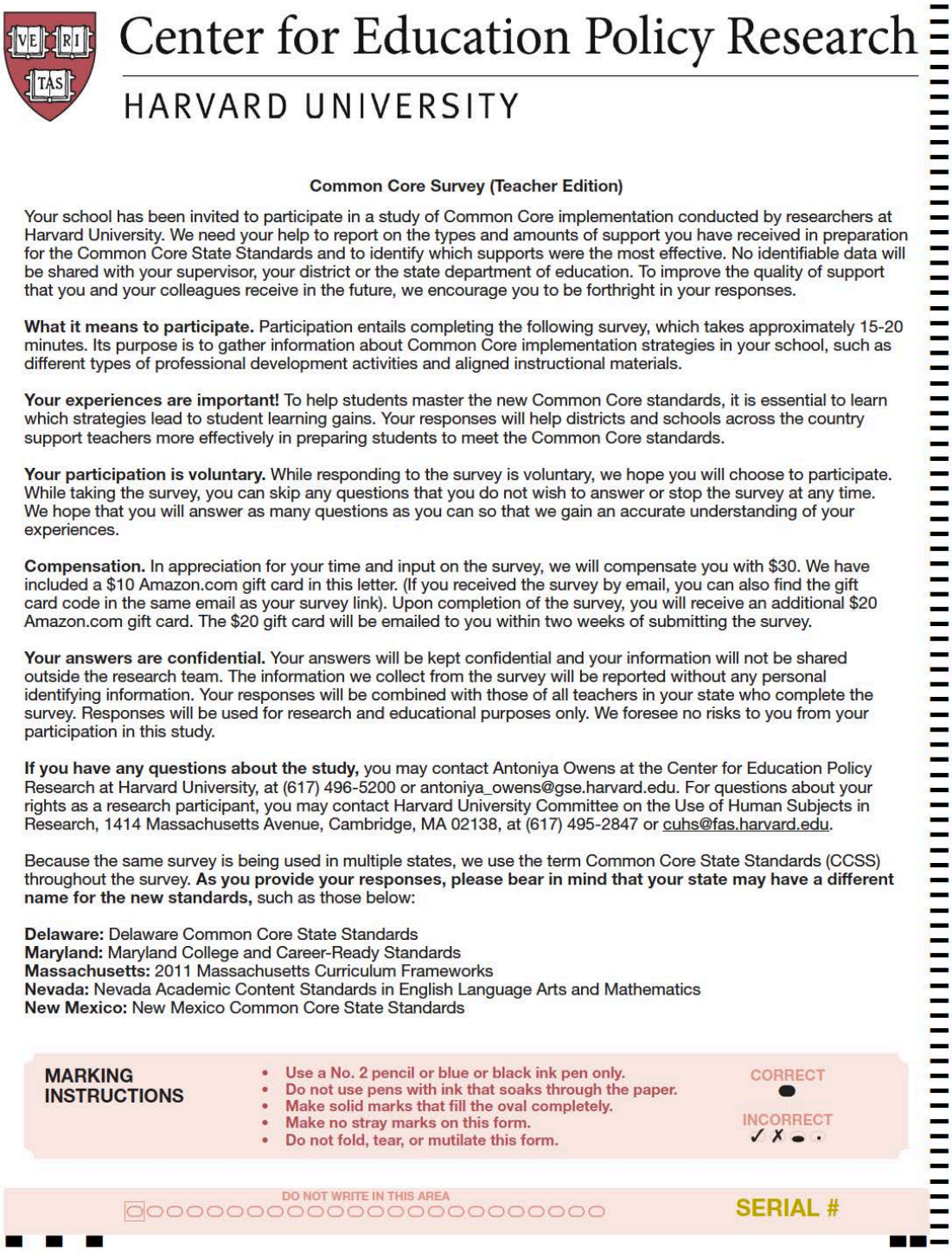
TABLE A2: Student and Teacher Characteristics in Sample and Non-Sample Schools from Clark County School District, Nevada

	NEVADA		
	Sample schools	Non-sample schools	Difference (std. error)
School average percentage of proficient students in math (2013–2014)	58.6%	61.1%	-2.5% (0.046)
School average percentage of proficient students in ELA (2013–2014)	63.9%	62.9%	0.91% (0.038)
School percentage of FRPL students	59.9%	62.2%	-2.4% (0.062)
School percentage of Black students	13.3%	13.0%	0.26%
School percentage of Hispanic students	44.8%	45.7%	-0.98% (0.058)

Note. FRPL = free and reduced-price lunch.

Appendix B

TABLE B1: Teacher Survey



Center for Education Policy Research

HARVARD UNIVERSITY

Common Core Survey (Teacher Edition)

Your school has been invited to participate in a study of Common Core implementation conducted by researchers at Harvard University. We need your help to report on the types and amounts of support you have received in preparation for the Common Core State Standards and to identify which supports were the most effective. No identifiable data will be shared with your supervisor, your district or the state department of education. To improve the quality of support that you and your colleagues receive in the future, we encourage you to be forthright in your responses.

What it means to participate. Participation entails completing the following survey, which takes approximately 15-20 minutes. Its purpose is to gather information about Common Core implementation strategies in your school, such as different types of professional development activities and aligned instructional materials.

Your experiences are important! To help students master the new Common Core standards, it is essential to learn which strategies lead to student learning gains. Your responses will help districts and schools across the country support teachers more effectively in preparing students to meet the Common Core standards.

Your participation is voluntary. While responding to the survey is voluntary, we hope you will choose to participate. While taking the survey, you can skip any questions that you do not wish to answer or stop the survey at any time. We hope that you will answer as many questions as you can so that we gain an accurate understanding of your experiences.

Compensation. In appreciation for your time and input on the survey, we will compensate you with $30. We have included a $10 Amazon.com gift card in this letter. (If you received the survey by email, you can also find the gift card code in the same email as your survey link). Upon completion of the survey, you will receive an additional $20 Amazon.com gift card. The $20 gift card will be emailed to you within two weeks of submitting the survey.

Your answers are confidential. Your answers will be kept confidential and your information will not be shared outside the research team. The information we collect from the survey will be reported without any personal identifying information. Your responses will be combined with those of all teachers in your state who complete the survey. Responses will be used for research and educational purposes only. We foresee no risks to you from your participation in this study.

If you have any questions about the study, you may contact Antoniya Owens at the Center for Education Policy Research at Harvard University, at (617) 496-5200 or antoniya_owens@gse.harvard.edu. For questions about your rights as a research participant, you may contact Harvard University Committee on the Use of Human Subjects in Research, 1414 Massachusetts Avenue, Cambridge, MA 02138, at (617) 495-2847 or cuhs@fas.harvard.edu.

Because the same survey is being used in multiple states, we use the term Common Core State Standards (CCSS) throughout the survey. **As you provide your responses, please bear in mind that your state may have a different name for the new standards,** such as those below:

Delaware: Delaware Common Core State Standards
Maryland: Maryland College and Career-Ready Standards
Massachusetts: 2011 Massachusetts Curriculum Frameworks
Nevada: Nevada Academic Content Standards in English Language Arts and Mathematics
New Mexico: New Mexico Common Core State Standards

MARKING INSTRUCTIONS

- Use a No. 2 pencil or blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the oval completely.
- Make no stray marks on this form.
- Do not fold, tear, or mutilate this form.

CORRECT ● INCORRECT ✓ ✗ ● ·

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SERIAL #

TABLE B1: Teacher Survey

1. **Please indicate your agreement with the conditions outlined on page 1.**
   - ○ I agree to participate in this survey. The purpose and conditions of this research have been sufficiently explained.
   - ○ I do not agree with the conditions outlined above and will not participate in the survey.

2. **Do you teach *English Language Arts* or *Mathematics* at either the elementary or middle school level?**
   - ○ I teach English Language Arts.
   - ○ I teach mathematics.
   - ○ I teach both English Language Arts and mathematics.
   - ○ I do not teach either subject.

   If you selected **"I do not teach either subject"**, please stop here. The survey is intended for mathematics and/or ELA teachers only. Thank you for your time.

3. **To what extent would you say that the following individuals have embraced the Common Core State Standards?**

	Not embraced	Embraced a little	Somewhat embraced	Embraced quite a bit	Fully embraced
Teachers at your school	○	○	○	○	○
The principal of your school	○	○	○	○	○
District administrators	○	○	○	○	○

4. **To what extent do you agree or disagree with the following statements?**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Teachers at my school are effectively implementing the Common Core State Standards.	○	○	○	○	○
The **principal** of my school is effectively supporting the implementation of the Common Core State Standards.	○	○	○	○	○
District/charter school network leaders are effectively supporting the implementation of the Common Core State Standards.	○	○	○	○	○

5. **How would you assess your own knowledge of the Common Core State Standards for the grade(s)/subject(s) you teach?**
   - ○ No knowledge
   - ○ A little knowledge
   - ○ Some knowledge
   - ○ Good knowledge
   - ○ Excellent knowledge

6. **Generally speaking, how much of your classroom instruction has changed as a result of the Common Core State Standards?**
   - ○ Almost none
   - ○ About a quarter
   - ○ About half
   - ○ About three quarters
   - ○ Almost all

7. **If you have made any important changes to your classroom instruction since the adoption of the Common Core State Standards, please tell us about the most important change.**

   _____
   _____
   _____

The following questions focus on the instructional materials and resources you have used for instruction in English Language Arts during this school year *(2014-15).*

Only answer **Questions 8 through 18** if you teach ELA or you teach *both* ELA and mathematics.
If you teach mathematics *only,* please **skip to Question 19.**

8. **How frequently do you use the following resources for instruction in English Language Arts *this school year (2014-15)?***

	Never	Less than once a month	Between 1 and 3 times a month	Between 1 and 3 times a week	Nearly every day
Lessons you used **before the CCSS were adopted.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **you** or **staff at your school.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by your **district** or **charter school network** (including in collaboration between district/network and school staff).	○	○	○	○	○
Instructional materials aligned with the CCSS developed by your **state department of education** (e.g. model curriculum units, exemplars, etc.).	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **other states.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **external organization(s)** (e.g. commercial publishers, nonprofits, higher education institutions, etc.).	○	○	○	○	○

9. **Please select the name of the textbook, curriculum or program you are using for instruction in English Language Arts *this school year (2014-15).* (Mark only ONE. If you are using more than one, please select the one you use the most.)**
   - ○ **Accelerated Reader**
   - ○ **Book It!**
   - ○ **Direct Instruction** (published by Scholastic)
   - ○ **Elements of Literature** (published by Holt McDougal)
   - ○ **Harcourt Reading** (published by Harcourt)
   - ○ **Houghton Mifflin Reading** (published by Houghton Mifflin Harcourt)
   - ○ **Great Source**
   - ○ **Journeys** (published by Houghton Mifflin Harcourt)
   - ○ **Literacy by Design** (published by Houghton Mifflin Harcourt)
   - ○ **Literature** (published by Holt McDougal)
   - ○ **Prentice Hall Literature** (published by Prentice Hall Pearson)
   - ○ **RAZ-Kids**
   - ○ **Reading Wonders** (published by McGraw Hill)
   - ○ **Scott Foresman Reading Street** (published by Pearson)
   - ○ **SRA Reading** or **SRA Open Court Reading**
   - ○ **Storytown** (published by Harcourt)
   - ○ **Treasures** (published by Macmillan-McGraw-Hill)
   - ○ **Trophies** (published by Harcourt)
   - ○ Other: Please specify title, publisher, edition.

     _____
   - ○ No, I do not use any.

TABLE B1: Teacher Survey

If you selected **"No, I do not use any"** in Question 9, please **skip to Question 13.**

10. **How many years has the textbook, curriculum or program you selected in question 9 been used in your school?**
○ This is the first year. ○ This is the second year. ○ It has been in use for 3 or more years.

11. **How frequently do you use the textbook, curriculum or program you selected in question 9 in your ELA/Reading instruction this school year?**
○ Less than once a month ○ Between 1 and 3 times a month ○ Between 1 and 3 times a week ○ Nearly every day

12. **Please describe the ways in which you are using the textbook, curriculum or program you selected in question 9 as part of your instruction this school year.**
○ I use it as my primary curriculum ○ I use it as supporting material (e.g., as a source of text for reading practice, homework assignments, or assessment tasks)

13. **If you are using any other *online* English Language Arts curricula or programs that you have found particularly valuable in preparing students for the CCSS, please list them here.**

14. **Overall, approximately what percentage of your instructional materials in English Language Arts has changed as a result of the Common Core State Standards?**
○ Almost none ○ About a quarter ○ About half ○ About three quarters ○ Almost all

15. **Since the adoption of the Common Core State Standards, have you changed the amount of informational text (non-fiction) in your reading assignments?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

16. **Since the adoption of the Common Core State Standards, have you changed the amount of literature in your reading assignments?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

17. **Since the adoption of the Common Core State Standards, have you changed the amount of assigned writing in which students are expected to support a point of view with reasons and specific evidence or write informative/explanatory texts to convey ideas and information clearly?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

18. **Since the adoption of the Common Core State Standards, have you changed the amount of student narrative writing, in which students convey real or imagined experiences?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

The following questions focus on the instructional materials and resources you have used for instruction in mathematics during this school year *(2014-15).*

Only answer **Questions 19 through 28** if you teach mathematics or you teach *both* mathematics and ELA.
If you teach ELA *only,* please **skip to Question 29.**

19. **How frequently do you use the following resources for instruction in mathematics *this school year (2014-15)?***

	Never	Less than once a month	Between 1 and 3 times a month	Between 1 and 3 times a week	Nearly every day
Lessons you used **before the Common Core State Standards were adopted.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **you** or **staff at your school.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by your **district** or **charter school network** (including materials developed in collaboration between district/network and school staff).	○	○	○	○	○
Instructional materials aligned with the CCSS developed by your **state department of education** (e.g. model curriculum units, exemplars, etc.).	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **other states.**	○	○	○	○	○
Instructional materials aligned with the CCSS developed by **external organization(s)** (e.g. commercial publishers, nonprofits, higher education institutions, etc.).	○	○	○	○	○

20. **Please select the name of the textbook or curriculum you are using for instruction in mathematics *this school year (2014-15).* (Mark only ONE. If you are using more than one textbook or curriculum, please select the one you use the most.)**
○ **Algebra I** (published by Prentice Hall Pearson)
○ **College Preparatory Mathematics** (published by CPM)
○ **Connected Mathematics** (published by Prentice-Hall Pearson)
○ **enVisionMATH** (published by Scott Foresman-Pearson)
○ **Everyday Mathematics** (published by Everyday Learning McGraw-Hill)
○ **GO Math!** (published by Houghton Mifflin Harcourt)
○ **HSP Math** (published by Houghton Mifflin Harcourt)
○ **Holt McDougal Mathematics** (published by Holt McDougal-HMH)
○ **Math Connects** (published by Glencoe McGraw-Hill)
○ **Math Expressions** (published by Houghton Mifflin Harcourt)
○ **Math in Focus or Singapore Math** (published by Great Source HMH)
○ **Prentice Hall Math** (published by Prentice Hall-Pearson)
○ **Think Math!**
○ Other: Please specify title, publisher, edition.
○ No, I do not use any.

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SERIAL #

TABLE B1: Teacher Survey

If you selected **"No, I do not use any"** in Question 20, please **skip to Question 24.**

21. **How many years has the textbook or curriculum you selected in question 20 been used in your school?**
○ This is the first year. ○ This is the second year. ○ It has been in use for 3 or more years.

22. **How frequently do you use the textbook or curriculum you selected in question 20 in your mathematics instruction this school year?**
○ Less than once a month ○ Between 1 and 3 times a month ○ Between 1 and 3 times a week ○ Nearly every day

23. **Please describe the ways in which you are using the textbook or curriculum you selected in question 20 as part of your instruction this school year.**
○ I use it as my primary curriculum ○ I use it as supporting material (e.g., as a source of problems for practice, homework assignments, or assessment tasks)

24. **If you are using any other *online* mathematics curricula or programs that you have found particularly valuable in preparing students for the CCSS, please list them here.**

25. **Overall, approximately what percentage of your instructional materials in mathematics has changed as a result of the Common Core State Standards?**
○ Almost none ○ About a quarter ○ About half ○ About three quarters ○ Almost all

The Common Core State Standards attempt to balance three aspects of rigor in mathematics: conceptual understanding, procedural skill and fluency, and application. The following questions ask you to describe the degree to which you have changed your focus on each of the three aspects of rigor since the adoption of the standards.

26. **Since the adoption of the new standards, to what extent have you changed your emphasis on *conceptual understanding* in math, helping students learn the meaning behind the math?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

27. **Since the adoption of the new standards, to what extent have you changed the time students spend on *procedural skill,* helping students quickly and accurately perform operations?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

28. **Since the adoption of the new standards, to what extent have you changed the time students spend on *application,* helping students apply their skills and knowledge in real-world situations?**
○ Decreased quite a bit ○ Decreased somewhat ○ No change ○ Increased somewhat ○ Increased quite a bit

29. **Select any of the following sources that have been valuable to you in aligning your instruction to the CCSS *this school year.* (Select ALL that apply.)**
○ Blackboard Learn (Maryland)
○ EdWin (Massachusetts)
○ Other online repository of sample instructional materials
○ State department of education website
○ Side-by-side crosswalks or gap analyses between the old and the new standards
○ EQuIP/Tri-State Rubric
○ Other rubrics or tools for evaluating alignment of instructional materials to the CCSS
○ Achievethecore.org
○ Better Lesson
○ EngageNY
○ Learn Zillion
○ Open Educational Resource Commons
○ Share My Lesson
○ Teaching Channel
○ Other online resources: Please describe.

30. **How frequently have you used the following types of assessments aligned to the Common Core *this school year?***

	Never	Less than once a month	Between 1 and 3 times a month	Between 1 and 3 times a week	Nearly every day
Assessments developed by **you** or **staff at your school**	○	○	○	○	○
Interim or formative assessments developed by your **district** or **charter school network** (including in collaboration between district/network and school staff)	○	○	○	○	○
Interim or formative assessments developed by the **state department of education**	○	○	○	○	○
Interim or formative assessments developed by **other states**	○	○	○	○	○
Interim or formative assessments developed by **external organization(s)** (e.g. commercial publishers, nonprofits, higher education institutions, etc.)	○	○	○	○	○
Example problems from PARCC or Smarter Balanced assessments	○	○	○	○	○

31. ***This school year,* have you used any assessments developed by external organizations (e.g., Scantron Performance Series, ANet, ATI Galileo, Test Whiz, etc.)?**
○ No ○ Yes, please specify:

TABLE B1: Teacher Survey

32. Generally speaking, how prepared do you feel to teach students what they need to know to succeed on the new CCSS-aligned assessments (PARCC/Smarter Balanced)?

○ Not at all prepared ○ Slightly prepared ○ Somewhat prepared ○ Quite prepared ○ Extremely prepared

33. How many times have your students used a computer or tablet for taking PARCC/Smarter Balanced practice assessments this school year?

○ Never ○ Less than once a month ○ Between 1 and 3 times a month ○ Between 1 and 3 times a week ○ Nearly every day

34. How many times have your students used a computer or tablet for taking other types of assessments, including formative or interim assessments?

○ Never ○ Less than once a month ○ Between 1 and 3 times a month ○ Between 1 and 3 times a week ○ Nearly every day

35. Overall, how frequently do your students use a computer or tablet in your class(es) for any purpose?

○ Never ○ Less than once a month ○ Between 1 and 3 times a month ○ Between 1 and 3 times a week ○ Nearly every day

---

The following questions focus on your experience with formal professional development (e.g. training sessions, workshops, etc.) related to the Common Core State Standards.

36. How many total days have you spent in formal professional development on the Common Core State Standards *this school year (2014-15)?* (Please add up all training sessions focused on the Common Core State Standards, including partial days. Please add up the total number of hours and divide by 8 hours, the equivalent of a full day. Then round the total number of days to the nearest integer. Feel free to approximate.)

○ Less than 1 day ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 days or more

37. How many total days have you spent in formal professional development on the Common Core State Standards *last school year (2013-14)?* (Please add up all training sessions focused on the Common Core State Standards, including partial days. Please add up the total number of hours and divide by 8 hours, the equivalent of a full day. Then round the total number of days to the nearest integer. Feel free to approximate.)

○ Less than 1 day ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 days or more

38. Please describe your experience *this school year (2014-15)* with formal professional development on the following topics. (If a training session covered more than one topic, please report the approximate time spent on each topic. Please add up the total number of hours and divide by 8 hours, the equivalent of a full day. Then round the total number of days to the nearest integer. Feel free to approximate.)

	How many days did you participate in each kind of professional development?							What was the format of this professional development?		
	Did not participate	Less than 1 day	1 day	2 days	3 days	4 days	5 or more days	In person	Online	Both in person and online
Understanding the Common Core standards and instructional shifts	○	○	○	○	○	○	○	○	○	○
Developing materials or assessments aligned with the Common Core standards	○	○	○	○	○	○	○	○	○	○
Tailoring instruction to students with different needs (e.g. ELL students, students with special needs)	○	○	○	○	○	○	○	○	○	○
Developing your knowledge of content in your subject area(s)	○	○	○	○	○	○	○	○	○	○
Learning about the new assessments (PARCC, Smarter Balanced)	○	○	○	○	○	○	○	○	○	○

39. Who was the primary provider of each type of professional development?

	Did not participate	Staff from my school (administrator, lead teachers)	Staff from my district or charter school network	State department of education	Institute of higher education	External provider	I don't know
Understanding the Common Core standards and instructional shifts	○	○	○	○	○	○	○
Developing materials or assessments aligned with the Common Core standards	○	○	○	○	○	○	○
Tailoring instruction to students with different needs (e.g. ELL students, students with special needs)	○	○	○	○	○	○	○
Developing your knowledge of content in your subject area(s)	○	○	○	○	○	○	○
Learning about the new assessments (PARCC, Smarter Balanced)	○	○	○	○	○	○	○

TABLE B1: Teacher Survey

Only answer **Questions 40–42** if you selected **"External provider"** in Question 39. Otherwise, **skip to Question 43.**

40. If you participated in professional development on the Common Core led by an external provider *this school year,* please identify the provider below. (Mark only ONE. If you have participated in professional development with more than one provider, please identify the provider with which you've worked the most.)

- ○ Achieve
- ○ Expeditionary Learning
- ○ International Reading Association
- ○ Knowledge Delivery Systems
- ○ Laying the Foundation
- ○ Marzano Research Laboratory
- ○ PARCC
- ○ Pearson
- ○ Smarter Balanced
- ○ Solution Tree
- ○ Student Achievement Partners
- ○ Other: Please describe. _____

41. How many days did you spend in professional development led by the external provider you selected in Question 40 *this school year?* (For partial days, please consider 8 hours to be equal to 1 day.)

○ Less than 1 day ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 days or more

42. How useful did you find the professional development led by the external provider you selected in Question 40 teaching to the Common Core State Standards?

○ Not at all useful ○ Slightly useful ○ Somewhat useful ○ Quite useful ○ Extremely useful

43. How frequently did you engage in the following types of *collaborative work* with colleagues, a team, or a professional learning community *this school year?*

	Once a year or never	1–3 times a semester	1–3 times a month	Every week
Understanding the Common Core standards and instructional shifts	○	○	○	○
Aligning materials or assessments to the Common Core State Standards	○	○	○	○
Sharing effective instructional strategies for preparing students to meet the Common Core State Standards	○	○	○	○
Observing other teachers' lessons that model instruction aligned to the Common Core State Standards	○	○	○	○
Analyzing data (e.g. formative assessment results, student work) to improve student mastery of the Common Core State Standards	○	○	○	○

The following questions focus on your experiences with classroom observations and instructional coaching during *this school year (2014-15).*

44. Were you observed in the classroom *this school year (2014-15),* either as part of a formal evaluation or for coaching or peer feedback?

○ Yes ○ No

If you selected **"No"** in Question 44, please **skip to Question 49.**

45. How frequently were you observed by these individuals on the alignment of your instruction to the Common Core State Standards *this school year?* (Please consider both formal and informal classroom observations.)

	Never	1–2 times	3–4 times	More than 4 times
Principal or assistant principal	○	○	○	○
Instructional coach	○	○	○	○
Department head	○	○	○	○
Peer teacher	○	○	○	○
Other	○	○	○	○

46. In the classroom observations that were part of your *formal performance evaluation* this school year, were you explicitly evaluated on the alignment of your classroom instruction to the Common Core State Standards?

○ Yes ○ No ○ I did not have a formal performance evaluation this school year.

47. In your post-observation conferences this school year, did you receive explicit feedback on the degree to which your instruction was aligned to the Common Core State Standards? (Please consider post-observation conferences from both formal and informal observations.)

○ Yes ○ No ○ I did not have post-observation conferences.

48. Can you identify specific changes in your instruction that you made as a result of post-observation feedback related to its alignment to the Common Core State Standards? (Please consider post-observation feedback from both formal and informal observations.)

○ Yes ○ No ○ I did not receive post-observation feedback.

49. Will your students' performance on PARCC/Smarter Balanced or other CCSS-aligned assessments (including formative or interim) play a role in your formal performance evaluation this school year (e.g. through Student Learning Objectives, District-Determined Measures, etc.)?

○ Yes ○ No ○ I do not have a formal performance evaluation this school year.

50. Outside of classroom observations, how frequently did an instructional coach provide you with other types of support on the alignment of your instruction to the Common Core State Standards this school year?

○ Once ○ 1–3 times a semester ○ 1–3 times a month ○ Every week ○ I did not work with an instructional coach.

TABLE B1: Teacher Survey

51. How useful was your work with the instructional coach?

- ○ Not at all useful
- ○ Slightly useful
- ○ Somewhat useful
- ○ Quite useful
- ○ Extremely useful
- ○ I did not work with an instructional coach.

52. When you think about all of the strategies for implementing the Common Core State Standards, how useful was each of the following strategies for helping you prepare your students to meet the CCSS?

	Not at all useful	Not useful	Somewhat useful	Useful	Very useful	*Not applicable*
Instructional materials	○	○	○	○	○	○
Formative and interim assessments	○	○	○	○	○	○
PARCC/Smarter Balanced practice assessments	○	○	○	○	○	○
Formal professional development	○	○	○	○	○	○
Collaborative work with colleagues, a team, or a professional learning community	○	○	○	○	○	○
Classroom observations and feedback	○	○	○	○	○	○
Work with instructional coach(es)	○	○	○	○	○	○

53. When you think about all of the strategies for implementing the Common Core State Standards, please rank the degree to which each strategy has helped you prepare your students to meet the standards this school year, ranging from 1 (most important) to 7 (least important).

Please mark rank clearly in box, example: [2]

- ☐ Using aligned instructional materials
- ☐ Formative and interim assessments
- ☐ PARCC/Smarter Balanced practice assessments
- ☐ Formal professional development
- ☐ Collaborative work with colleagues, a team, or a professional learning community
- ☐ Classroom observations and feedback
- ☐ Work with instructional coach(es)

54. To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Overall, my school is a good place to work and learn.	○	○	○	○	○
Teachers are held to high professional standards for delivering instruction.	○	○	○	○	○
Students at this school follow rules of conduct.	○	○	○	○	○
Parents/guardians support teachers, contributing to their success with students.	○	○	○	○	○

55. What is the primary subject you teach? (If you teach multiple subjects, please select the subject you teach for the highest number of hours during a typical week.)

- ○ All subjects (General education)
- ○ English Language Arts or Reading
- ○ Mathematics
- ○ Science
- ○ Social Studies or History
- ○ Art or Music
- ○ Physical Education/Health Science
- ○ Technology or other Applied Science
- ○ Career or Technical Education
- ○ Other: Please describe _____

56. Which option best describes your current teaching load?

- ○ Full-time
- ○ Less than full-time but more than half-time
- ○ Half-time
- ○ Less than half-time

57. How many years, including this year, have you been a teacher?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10
- ○ 11
- ○ 12
- ○ 13
- ○ 14
- ○ 15
- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20 years or more

58. Were you teaching in your *current* school last school year (2013-14)?

- ○ Yes
- ○ No

59. What grade(s) do you teach this school year (2014-15)? (Select ALL that apply.)

- ○ Pre-K
- ○ Kindergarten
- ○ 1st Grade
- ○ 2nd Grade
- ○ 3rd Grade
- ○ 4th Grade
- ○ 5th Grade
- ○ 6th Grade
- ○ 7th Grade
- ○ 8th Grade
- ○ 9th Grade
- ○ 10th Grade
- ○ 11th Grade
- ○ 12th Grade

60. Please enter your name, date and email address in the spaces provided below.
Please note that we will only use this information to send you your $20 gift card.

Name (first and last): _____

Today's Date (mm/dd/yyyy): M M – D D – Y Y Y Y

Email address: _____

TABLE B2: Principal Survey

Center for Education Policy Research

HARVARD UNIVERSITY

Common Core Survey (Principal Edition)

Your school has been invited to participate in a study of Common Core implementation conducted by researchers at Harvard University. We need your help to report on the types and amounts of support your school has received in preparation for the Common Core State Standards and to identify which supports were the most effective. No identifiable data will be shared with your supervisor, your district or the state department of education. To improve the quality of support that you and your colleagues receive in the future, we encourage you to be forthright in your responses.

What it means to participate. Participation entails completing the following survey, which takes approximately 15-20 minutes. Its purpose is to gather information about Common Core implementation strategies in your school, such as different types of professional development activities and aligned instructional materials.

Your experiences are important! To help students master the new Common Core standards, it is essential to learn which strategies lead to student learning gains. Your responses will help districts and schools across the country support teachers more effectively in preparing students to meet the Common Core standards.

Your participation is voluntary. While responding to the survey is voluntary, we hope you will choose to participate. While taking the survey, you can skip any questions that you do not wish to answer or stop the survey at any time. We hope that you will answer as many questions as you can so that we gain an accurate understanding of your experiences.

Compensation. In appreciation for your time and input on the survey, we will compensate you with $30. We have included a $10 Amazon.com gift card in this letter. (If you received the survey by email, you can also find the gift card code in the same email as your survey link). Upon completion of the survey, you will receive an additional $20 Amazon.com gift card. The $20 gift card will be emailed to you within two weeks of submitting the survey.

Your answers are confidential. Your answers will be kept confidential and your information will not be shared outside the research team. The information we collect from the survey will be reported without any personal identifying information. Your responses will be combined with those of all teachers in your state who complete the survey. Responses will be used for research and educational purposes only. We foresee no risks to you from your participation in this study.

If you have any questions about the study, you may contact Antoniya Owens at the Center for Education Policy Research at Harvard University, at (617) 496-5200 or antoniya_owens@gse.harvard.edu. For questions about your rights as a research participant, you may contact Harvard University Committee on the Use of Human Subjects in Research, 1414 Massachusetts Avenue, Cambridge, MA 02138, at (617) 495-2847 or cuhs@fas.harvard.edu.

Because the same survey is being used in multiple states, we use the term Common Core State Standards (CCSS) throughout the survey. **As you provide your responses, please bear in mind that your state may have a different name for the new standards,** such as those below:

Delaware: Delaware Common Core State Standards
Maryland: Maryland College and Career-Ready Standards
Massachusetts: 2011 Massachusetts Curriculum Frameworks
Nevada: Nevada Academic Content Standards in English Language Arts and Mathematics
New Mexico: New Mexico Common Core State Standards

MARKING INSTRUCTIONS

- Use a No. 2 pencil or blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the oval completely.
- Make no stray marks on this form.
- Do not fold, tear, or mutilate this form.

CORRECT ●

INCORRECT ✓ ✗ ⬬ ·

TABLE B2: Principal Survey

1. **Please indicate your agreement with the conditions outlined on page 1.**
   - ○ I agree to participate in this survey. The purpose and conditions of this research have been sufficiently explained.
   - ○ I do not agree with the conditions outlined above and will not participate in the survey.

The following questions focus on the progress and readiness of your school in terms of Common Core State Standards implementation.

2. **To what extent has CCSS implementation required your teachers to change their instructional practices?**
   ○ Not at all ○ Slightly ○ Somewhat ○ Quite a bit ○ A tremendous amount

3. When did your school begin significant efforts related to the following aspects of CCSS implementation?	School year 2012-13 or earlier	School year 2013-14	School year 2014-15	Planning to do this but have not started	Not planning to do this
Gap analysis between old and new standards for mathematics	○	○	○	○	○
Gap analysis between old and new standards for ELA	○	○	○	○	○
Alignment of instructional materials for mathematics	○	○	○	○	○
Alignment of instructional materials for ELA	○	○	○	○	○
Professional development for mathematics teachers	○	○	○	○	○
Professional development for ELA teachers	○	○	○	○	○

4. *Prior to this school year (2014-15),* how prepared were the following aspects of your school for implementing the CCSS?	Not at all prepared	Slightly prepared	Somewhat prepared	Quite prepared	Extremely prepared
Mathematics teachers' instructional practices	○	○	○	○	○
ELA teachers' instructional practices	○	○	○	○	○
Mathematics teachers' content knowledge	○	○	○	○	○
ELA teachers' content knowledge	○	○	○	○	○
Mathematics curricula	○	○	○	○	○
ELA curricula	○	○	○	○	○
Mathematics formative and interim assessments	○	○	○	○	○
ELA formative and interim assessments	○	○	○	○	○

5. *As of now,* how prepared are the following aspects of your school for implementing the CCSS?	Not at all prepared	Slightly prepared	Somewhat prepared	Quite prepared	Extremely prepared
Mathematics teachers' instructional practices	○	○	○	○	○
ELA teachers' instructional practices	○	○	○	○	○
Mathematics teachers' content knowledge	○	○	○	○	○
ELA teachers' content knowledge	○	○	○	○	○
Mathematics curricula	○	○	○	○	○
ELA curricula	○	○	○	○	○
Mathematics formative and interim assessments	○	○	○	○	○
ELA formative and interim assessments	○	○	○	○	○

The following questions focus on your teachers' and your views about the Common Core State Standards and the professional development you have received related to CCSS implementation.

6. To what extent have teachers of different subjects at your school embraced the CCSS?	Not embraced	Embraced a little	Somewhat embraced	Embraced quite a bit	Fully embraced
Mathematics teachers	○	○	○	○	○
ELA teachers	○	○	○	○	○
Teachers of other subjects	○	○	○	○	○

7. **In the long run, do you agree or disagree that the CCSS will have a positive effect on student learning?**
   ○ Strongly disagree ○ Disagree ○ Neither agree nor disagree ○ Agree ○ Strongly agree

8. **How many total days have you spent in formal professional development on the CCSS *this school year (2014-15)?***
   (Please add up the total number of hours, including partial days, and divide by 8 hours, the equivalent of a full day. Then round the total number of days to the nearest integer. Feel free to approximate.)
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 days or more

9. **How many total days did you spend in formal professional development on the CCSS *last school year (2013-14)?***
   (Please add up the total number of hours, including partial days, and divide by 8 hours, the equivalent of a full day. Then round the total number of days to the nearest integer. Feel free to approximate.)
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 days or more

10. **How satisfied are you with the quality of the professional development you have received related to the CCSS?**
    ○ Not at all satisfied ○ Slightly satisfied ○ Somewhat satisfied ○ Quite satisfied ○ Extremely satisfied

11. **To what extent do you feel prepared to identify CCSS-aligned instructional practices during classroom observations of your teachers?**
    ○ Not at all ○ Slightly ○ Somewhat ○ Quite a bit ○ A tremendous amount

The following questions focus on the capacity, resources and supports for your school related to Common Core State Standards implementation.

12. **Which staff member at your school has been the primary leader of CCSS implementation for *mathematics*?**
    ○ *There is no primary leader.* ○ Principal ○ Assistant principal ○ Department chair ○ Instructional coach ○ Lead teacher ○ Other: _____

TABLE B2: Principal Survey

13. Please describe the level of involvement of the following staff member(s) at your school with CCSS implementation for *mathematics*.

	Not at all involved	Slightly involved	Somewhat involved	Quite involved	Extremely involved
Principal	○	○	○	○	○
Assistant principal	○	○	○	○	○
Department chair	○	○	○	○	○
Grade-level/department teams	○	○	○	○	○
Instructional coaches	○	○	○	○	○
Lead teachers	○	○	○	○	○

14. Which staff member at your school has been the primary leader of CCSS implementation for *English Language Arts*?

○ *There is no primary leader.* ○ Principal ○ Assistant principal ○ Department chair ○ Instructional coach ○ Lead teacher ○ Other: _____

15. Please describe the level of involvement of the following staff member(s) at your school with CCSS implementation for *English Language Arts*.

	Not at all involved	Slightly involved	Somewhat involved	Quite involved	Extremely involved
Principal	○	○	○	○	○
Assistant principal	○	○	○	○	○
Department chair	○	○	○	○	○
Grade-level/department teams	○	○	○	○	○
Instructional coaches	○	○	○	○	○
Lead teachers	○	○	○	○	○

16. Please indicate your level of agreement with the following statements:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Our school's **mathematics** curriculum is well suited to help our students master the CCSS.	○	○	○	○	○
Our school's **ELA** curriculum is well suited to help our students master the CCSS.	○	○	○	○	○

17. Do all schools in your district at your grade level use the same curricula for the following subjects?

Mathematics ○ Yes ○ No ELA ○ Yes ○ No

18. In response to your state's adoption of the CCSS, have you taken any of the following actions?

a. Encouraged teachers to use collaborative time to work with their colleagues to prepare for the CCSS	○ Yes	○ No
b. Changed the way your school conducts classroom observations (including informal and formal observations of full or partial lessons)	○ Yes	○ No
c. Encouraged teachers to administer CCSS-aligned practice assessments	○ Yes	○ No
d. Encouraged teachers to analyze and discuss examples of students' work	○ Yes	○ No

Only answer **Question 19,** if you selected **Yes** on **Question 18a**

19. In a typical month *this school year,* approximately how much time do teachers have to collaborate in preparing for the CCSS?

○ An hour or two ○ A half-day ○ 1 day ○ 2–3 days ○ 4 days or more

Only answer **Questions 20 and 21,** if you selected **Yes** on **Question 18b**

20. Approximately how many classroom observations will the average ELA or math teacher receive *this school year* that explicitly focus on CCSS-aligned instruction?

○ 1–2 ○ 3–4 ○ 5–6 ○ 7–9 ○ 10 or more

21. Please tell us how your school's classroom observation process has changed as a result of CCSS? [Select ALL that apply.]

○ Using a different rubric
○ Conducting more observations
○ Referring teachers to training materials or opportunities
○ Providing post-observation feedback focused on aligning instruction to the CCSS
○ Other: _____

22. How effective was the support you have received from your *school district or charter school network* in implementing the CCSS for each subject?

	Did not receive support	Ineffective	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Very effective
Mathematics	○	○	○	○	○	○
English Language Arts	○	○	○	○	○	○

23. How effective was the support you have received from your *state department of education* in implementing the CCSS for each subject?

	Did not receive support	Ineffective	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Very effective
Mathematics	○	○	○	○	○	○
English Language Arts	○	○	○	○	○	○

24. To what extent have you faced resistance to the CCSS from *parents* of students in your school?

○ Not at all ○ Slightly ○ Somewhat ○ Quite a bit ○ A tremendous amount

25. How much effort have you put into building support for CCSS implementation among *parents* of students in your school?

○ Not at all ○ Slightly ○ Somewhat ○ Quite a bit ○ A tremendous amount

TABLE B2: Principal Survey

26. Please describe any *partnerships* with *external organizations* that you have formed as part of CCSS implementation?

	Have you partnered with the following types of organizations?		How would you assess the quality of these partnerships?			
	Yes	No	Low	Medium	High	N/A
College or universities	○	○	○	○	○	○
Non-profit organizations	○	○	○	○	○	○
Commercial vendors	○	○	○	○	○	○

27. Which of the following options best describes the priority of CCSS implementation at your school?

○ My top priority ○ Among my top three priorities ○ A priority, but below my top three priorities ○ Not a priority

28. Schools in your state are simultaneously implementing the CCSS and a new teacher evaluation system. To what extent is the new teacher evaluation system aligned with the CCSS?

○ Not at all ○ Slightly ○ Somewhat ○ Quite a bit ○ A tremendous amount

29. To what extent has the simultaneous implementation of the new teacher evaluation system made it easier or more difficult for your school to implement the CCSS?

○ Much more difficult ○ More difficult ○ Neither easier nor more difficult ○ Easier ○ Much easier

30. When you think about all of the strategies you have used to implement the CCSS at your school, please rank the degree to which each strategy has helped you prepare your students to meet the standards this school year, ranging from 1 (most important) to 7 (least important).

Please mark rank clearly in box, example: [2]

- ☐ Aligning instructional materials
- ☐ Formative and interim assessments
- ☐ PARCC/Smarter Balanced practice assessments
- ☐ Formal professional development
- ☐ Collaborative work with colleagues, a team, or a professional learning community
- ☐ Classroom observations and feedback
- ☐ Work with instructional coach(es)

31. When you think about all of the obstacles you have faced in your implementation of the CCSS, please rank the challenges below from 1 (most challenging) to 5 (least challenging).

Please mark rank clearly in box, example: [2]

- ☐ Insufficient/low-quality curricular materials and assessments
- ☐ Insufficient technology
- ☐ Funding limitations
- ☐ Limitations in teachers' content knowledge or instructional practices
- ☐ Limitations in students' prior knowledge

The following questions focus on the administration of the PARCC/Smarter Balanced assessments.

32. In which of the following grades and subjects did students in your school participate in the field tests of PARCC/Smarter Balanced *last school year* (i.e. in the spring of 2014)? [Select ALL that apply.]

Grade 3	○ Mathematics	○ ELA	Grade 5	○ Mathematics	○ ELA	Grade 7	○ Mathematics	○ ELA
Grade 4	○ Mathematics	○ ELA	Grade 6	○ Mathematics	○ ELA	Grade 8	○ Mathematics	○ ELA

33. Will students in your school be taking the *computer-based* PARCC/Smarter Balanced assessments *this school year (2014-15)?* ○ Yes ○ No

34. To what extent do the following issues present a challenge to administering the computer-based PARCC/Smarter Balanced assessments at your school?

	I don't know	Too soon to tell	Not a Challenge	Minor Challenge	Major Challenge
Availability of sufficient numbers of computers with adequate processing speed and screen characteristics.	○	○	○	○	○
Availability of adequate internet access and bandwidth.	○	○	○	○	○
Availability of expertise to address technology problems that may arise during test administration.	○	○	○	○	○

35. How many years have you served as the principal of *this* school?

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 ○ 16 ○ 17 ○ 18 ○ 19 ○ 20 years or more

36. How many *total* years have you served as the principal of *this* or *any other* school?

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13 ○ 14 ○ 15 ○ 16 ○ 17 ○ 18 ○ 19 ○ 20 years or more

37. Please enter your name, date and email address in the spaces provided below.
Please note that we will only use this information to send you your $20 gift card.

Name (first and last): _____

Today's Date (mm/dd/yyyy): M M – D D – Y Y Y Y

Email address: _____

Appendix C

TABLE C1: Teacher Sample Sizes and Survey Response Rates

	Teachers in sample *(n)*	Teachers completing surveys *(n)*	Response rate
Delaware	297	252	85%
Massachusetts	321	292	91%
Maryland	447	399	89%
New Mexico	410	335	82%
Nevada	272	220	81%
Total	**1747**	**1498**	**86%**

TABLE C2: Principal Sample Sizes and Survey Response Rates

	Principals in sample *(n)*	Principals completing surveys *(n)*	Response rate
Delaware	23	23	100%
Massachusetts	28	28	100%
Maryland	37	34	92%
New Mexico	42	36	86%
Nevada	22	20	91%
Total	**152**	**141**	**93%**

Appendix D

TABLE D1: Teacher Survey

TO WHAT EXTENT WOULD YOU SAY THAT TEACHERS AT YOUR SCHOOL HAVE EMBRACED THE CCSS?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Not embraced	1.6%	0.1%	0.9%	0.3%	2.3%	0.7%
Embraced a little	6.6%	4.0%	5.0%	6.5%	8.2%	5.2%
Somewhat embraced	24.2%	16.4%	26.5%	15.3%	22.7%	20.7%
Embraced quite a bit	40.2%	50.8%	44.1%	45.5%	32.9%	45.7%
Fully embraced	26.7%	28.4%	23.1%	32.4%	32.9%	27.4%
Skipped question	0.7%	0.2%	0.5%	0.0%	0.9%	0.3%
Number of teachers	225	253	348	295	219	1340
TO WHAT EXTENT WOULD YOU SAY THAT THE PRINCIPAL OF YOUR SCHOOL HAS EMBRACED THE CCSS?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Not embraced	0.0%	0.9%	0.0%	0.0%	0.4%	0.4%
Embraced a little	4.4%	2.7%	1.3%	2.5%	1.4%	2.2%
Somewhat embraced	5.9%	6.9%	8.7%	6.9%	6.5%	7.5%
Embraced quite a bit	35.9%	28.2%	31.2%	33.5%	23.5%	30.1%
Fully embraced	50.6%	59.8%	57.1%	56.2%	67.8%	58.5%
Skipped question	3.2%	1.4%	1.8%	0.9%	0.4%	1.5%
Number of teachers	225	253	348	295	219	1340
TO WHAT EXTENT WOULD YOU SAY THAT DISTRICT ADMINISTRATORS HAVE EMBRACED THE CCSS?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Not embraced	2.8%	0.0%	0.0%	0.2%	0.4%	0.2%
Embraced a little	1.9%	0.1%	0.8%	2.5%	2.0%	0.9%
Somewhat embraced	3.8%	5.6%	3.7%	7.1%	7.7%	5.2%
Embraced quite a bit	31.7%	35.9%	27.0%	32.6%	22.8%	31.1%
Fully embraced	56.4%	57.1%	66.4%	56.7%	65.4%	60.9%
Skipped question	3.4%	1.2%	2.2%	0.9%	1.7%	1.7%
Number of teachers	225	253	348	295	219	1340

TABLE D2: Teacher Survey

TO WHAT EXTENT DO YOU AGREE OR DISAGREE TEACHERS AT YOUR SCHOOL ARE EFFECTIVELY IMPLEMENTING THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Strongly disagree	0.0%	0.0%	1.0%	0.2%	2.3%	0.6%
Disagree	8.6%	2.4%	6.2%	6.3%	7.7%	5.0%
Neither agree nor disagree	9.0%	13.1%	13.2%	14.3%	18.7%	13.5%
Agree	64.1%	66.4%	60.8%	52.8%	50.9%	61.1%
Strongly agree	18.2%	18.1%	18.5%	26.4%	20.4%	19.6%
Skipped question	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
Number of teachers	225	253	348	295	219	1340
TO WHAT EXTENT DO YOU AGREE OR DISAGREE YOUR PRINCIPAL IS EFFECTIVELY IMPLEMENTING THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Strongly disagree	0.3%	1.1%	1.0%	0.3%	1.7%	1.0%
Disagree	5.8%	4.7%	4.4%	4.7%	5.1%	4.7%
Neither agree nor disagree	9.0%	17.3%	8.4%	9.4%	5.7%	11.7%
Agree	50.5%	48.6%	43.7%	41.3%	44.9%	45.6%
Strongly agree	34.3%	28.3%	42.5%	44.4%	42.4%	37.0%
Skipped question	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Number of teachers	225	253	348	295	219	1340
TO WHAT EXTENT DO YOU AGREE OR DISAGREE DISTRICT ADMINISTRATORS ARE EFFECTIVELY IMPLEMENTING THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Strongly disagree	3.2%	1.7%	2.2%	2.8%	3.7%	2.2%
Disagree	10.2%	2.6%	4.2%	10.5%	5.5%	5.0%
Neither agree nor disagree	11.3%	19.1%	17.5%	20.0%	24.1%	18.6%
Agree	45.3%	53.5%	43.2%	40.6%	37.6%	46.3%
Strongly agree	29.9%	22.6%	32.2%	25.1%	27.2%	27.1%
Skipped question	0.0%	0.5%	0.6%	1.0%	1.9%	0.7%
Number of teachers	225	253	348	295	219	1340

TABLE D3: Principal Survey

TO WHAT EXTENT HAVE MATHEMATICS TEACHERS AT YOUR SCHOOL EMBRACED THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Not embraced	0.0%	0.0%	0.0%	7.2%	0.0%	1.1%
Embraced a little	0.0%	2.8%	13.0%	0.0%	4.3%	5.9%
Somewhat embraced	40.5%	8.0%	32.7%	11.8%	28.9%	20.2%
Embraced quite a bit	40.5%	62.9%	39.1%	46.8%	59.8%	50.9%
Fully embraced	19.0%	26.3%	15.2%	34.3%	7.0%	22.0%
Skipped question	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Number of principals	22	24	31	30	19	126
TO WHAT EXTENT HAVE ELA TEACHERS AT YOUR SCHOOL EMBRACED THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Not embraced	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Embraced a little	0.0%	0.0%	8.1%	11.6%	0.0%	4.5%
Somewhat embraced	14.9%	17.2%	30.3%	14.8%	18.6%	21.3%
Embraced quite a bit	55.9%	56.5%	41.8%	38.2%	53.9%	48.5%
Fully embraced	29.2%	26.3%	19.8%	35.4%	27.5%	25.6%
Skipped question	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Number of principals	22	24	31	30	19	126

TABLE D4: Principal Survey

IN THE LONG RUN, DO YOU AGREE OR DISAGREE THAT THE CCSS WILL HAVE A POSITIVE EFFECT ON STUDENT LEARNING?						
	DE	MA	MD	NM	NV	Overall
Strongly disagree	0.0%	0.0%	0.0%	3.6%	0.0%	0.5%
Disagree	8.0%	1.1%	7.9%	4.9%	0.0%	4.3%
Neither agree nor disagree	16.8%	38.3%	23.8%	15.3%	0.0%	26.3%
Agree	53.6%	42.3%	31.7%	59.8%	56.1%	42.7%
Strongly Agree	21.5%	18.3%	36.6%	16.4%	43.9%	26.2%
Skipped question	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Number of principals	22	24	31	30	19	126

TABLE D5: Teacher Survey

HOW WOULD YOU ASSESS YOUR OWN KNOWLEDGE OF THE CCSS FOR THE GRADE(S)/SUBJECT(S) YOU TEACH?						
	DE	MA	MD	NM	NV	Overall
No knowledge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
A little knowledge	3.6%	0.0%	1.9%	1.9%	0.4%	1.2%
Some knowledge	17.4%	8.4%	18.8%	13.2%	15.9%	13.8%
Good knowledge	60.0%	76.5%	63.7%	64.4%	59.9%	68.1%
Excellent knowledge	18.6%	14.7%	15.1%	20.6%	23.2%	16.6%
Skipped question	0.4%	0.4%	0.5%	0.0%	0.7%	0.4%
Number of teachers	225	253	348	295	219	1340

TABLE D6: Teacher Survey

OVERALL, APPROXIMATELY WHAT PERCENTAGE OF YOUR INSTRUCTIONAL MATERIALS IN MATHEMATICS HAS CHANGED AS A RESULT OF THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Almost none	13.5%	6.5%	4.0%	6.0%	5.3%	5.9%
About a quarter	9.3%	18.6%	5.9%	13.0%	5.8%	11.7%
About half	28.5%	29.4%	20.6%	19.0%	18.8%	23.8%
About three quarters	18.9%	19.3%	31.1%	28.9%	20.6%	25.0%
Almost all	28.5%	25.1%	37.6%	32.3%	47.7%	32.5%
Skipped question	1.3%	1.1%	0.8%	0.7%	1.9%	1.0%
Number of teachers	145	167	214	189	121	836
OVERALL, APPROXIMATELY WHAT PERCENTAGE OF YOUR INSTRUCTIONAL MATERIALS IN ELA HAS CHANGED AS A RESULT OF THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Almost none	11.1%	19.3%	8.9%	11.4%	4.6%	12.6%
About a quarter	19.0%	21.6%	8.3%	17.2%	6.0%	14.7%
About half	24.4%	27.4%	27.3%	25.0%	17.6%	25.9%
About three quarters	24.1%	19.9%	28.9%	26.8%	22.2%	24.5%
Almost all	20.2%	11.1%	26.1%	18.5%	48.6%	21.5%
Skipped question	1.3%	0.6%	0.6%	1.1%	1.1%	0.8%
Number of teachers	150	173	228	202	160	913
GENERALLY SPEAKING, HOW MUCH OF YOUR CLASSROOM INSTRUCTION HAS CHANGED AS A RESULT OF THE CCSS?						
	DE	MA	MD	NM	NV	Overall
Almost none	6.0%	16.3%	5.5%	7.4%	7.4%	10.0%
About a quarter	13.2%	21.9%	7.7%	13.0%	4.8%	13.8%
About half	31.9%	29.3%	28.0%	28.0%	27.5%	28.6%
About three quarters	27.6%	20.4%	35.5%	27.3%	28.4%	27.7%
Almost all	20.4%	11.7%	23.0%	24.0%	30.6%	19.4%
Skipped question	0.9%	0.4%	0.3%	0.4%	1.3%	0.5%
Number of teachers	225	253	348	295	219	1340

TABLE D7: Teacher Survey

Percentage of teachers in each subject who indicated they have increased somewhat or quite a bit the following types of instruction:

MATHEMATICS						
*SINCE THE ADOPTION OF THE NEW STANDARDS, TO WHAT EXTENT HAVE YOU CHANGED YOUR EMPHASIS ON **CONCEPTUAL UNDERSTANDING** IN MATH, HELPING STUDENTS LEARN THE MEANING BEHIND THE MATH?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	80%	76%	89%	74%	81%	81%
*SINCE THE ADOPTION OF THE NEW STANDARDS, TO WHAT EXTENT HAVE YOU CHANGED THE TIME STUDENTS SPEND ON **PROCEDURAL SKILL,** HELPING STUDENTS QUICKLY AND ACCURATELY PERFORM OPERATIONS?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	55%	29%	43%	45%	39%	39%
*SINCE THE ADOPTION OF THE NEW STANDARDS, TO WHAT EXTENT HAVE YOU CHANGED THE TIME STUDENTS SPEND ON **APPLICATION,** HELPING STUDENTS APPLY THEIR SKILLS AND KNOWLEDGE IN REAL-WORLD SITUATIONS?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	80%	72%	83%	76%	89%	78%
ENGLISH LANGUAGE ARTS						
*SINCE ADOPTION OF THE CCSS, HAVE YOU CHANGED THE AMOUNT OF **INFORMATIONAL TEXT/NONFICTION** IN YOUR READING ASSIGNMENTS?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	82%	87%	86%	81%	84%	85%
*SINCE ADOPTION OF CCSS, HAVE YOU CHANGED THE AMOUNT OF **LITERATURE** IN YOUR READING ASSIGNMENTS?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	35%	36%	41%	37%	37%	38%
*SINCE ADOPTION OF CCSS, HAVE YOU CHANGED THE AMOUNT OF ASSIGNED WRITING IN WHICH STUDENTS ARE EXPECTED TO SUPPORT A POINT OF VIEW WITH **REASONS AND SPECIFIC EVIDENCE** OR WRITE **INFORMATIVE/EXPLANATORY TEXTS TO CONVEY IDEAS AND INFORMATION** CLEARLY?*						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	83%	87%	90%	81%	79%	86%
*SINCE ADOPTION OF CCSS, HAVE YOU CHANGED THE AMOUNT OF STUDENT NARRATIVE WRITING, IN WHICH **STUDENTS CONVEY REAL OR IMAGINED EXPERIENCES?***						
	DE	MA	MD	NM	NV	Overall
Increased somewhat or quite a bit	38%	38%	48%	41%	35%	42%

Table D8: Teacher Survey

*HOW FREQUENTLY DO YOU USE THE FOLLOWING RESOURCES FOR INSTRUCTION IN **ENGLISH LANGUAGE ARTS** THIS SCHOOL YEAR (2014–2015)?*						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Lessons from before the CCSS	36%	51%	30%	50%	26%	40%
Materials developed by you or staff at your school	85%	74%	87%	81%	75%	80%
Materials developed by your district or charter school network	64%	40%	72%	41%	45%	53%
Materials developed by your state department of education	37%	22%	48%	32%	36%	35%
Materials developed by other states	26%	12%	27%	32%	49%	25%
Materials developed by external organizations (e.g. commercial publishers, nonprofits, etc.)	47%	40%	31%	61%	60%	43%
*HOW FREQUENTLY DO YOU USE THE FOLLOWING RESOURCES FOR INSTRUCTION IN **MATHEMATICS** THIS SCHOOL YEAR (2014–2015)?*						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Lessons from before the CCSS	49%	42%	27%	41%	28%	36%
Materials developed by you or staff at your school	72%	69%	80%	68%	61%	72%
Materials developed by your district or charter school network	52%	37%	72%	41%	33%	50%
Materials developed by your state department of education	31%	19%	44%	27%	36%	31%
Materials developed by other states	29%	25%	32%	29%	55%	30%
Materials developed by external organizations (e.g. commercial publishers, nonprofits, etc.)	42%	66%	36%	64%	59%	53%

Table D9: Teacher Survey

HOW FREQUENTLY HAVE YOU USED EXAMPLE PROBLEMS FROM THE PARCC/SMARTER BALANCED PRACTICE ASSESSMENTS THIS SCHOOL YEAR?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Never	9.3%	16.9%	11.1%	3.9%	9.5%	12.0%
Less than once a month	26.3%	33.9%	29.2%	24.5%	24.1%	29.7%
Between 1 and 3 times a month	41.3%	29.1%	35.1%	39.7%	40.8%	34.3%
Between 1 and 3 times a week	16.8%	17.8%	18.7%	25.9%	16.9%	19.2%
Nearly every day	4.6%	1.9%	5.6%	5.2%	6.9%	4.2%
Skipped question	1.7%	0.4%	0.2%	0.7%	1.8%	0.6%
Number of teachers	225	253	348	295	219	1340
HOW MANY TIMES HAVE YOUR STUDENTS USED A COMPUTER OR TABLET FOR TAKING PARCC/SMARTER BALANCED PRACTICE ASSESSMENTS THIS SCHOOL YEAR?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Never	29.5%	71.7%	32.2%	9.8%	11.1%	41.9%
Less than once a month	58.8%	16.0%	44.1%	44.8%	49.0%	34.9%
Between 1 and 3 times a month	7.6%	7.4%	16.9%	28.1%	27.8%	15.3%
Between 1 and 3 times a week	1.2%	4.5%	4.7%	15.4%	10.2%	6.4%
Nearly every day	2.2%	0.3%	1.3%	1.8%	1.9%	1.1%
Skipped question	0.6%	0.1%	0.8%	0.0%	0.0%	0.4%
Number of teachers	225	253	348	295	219	1340

Table D10: Teacher Survey

HOW PREPARED DO YOU FEEL TO TEACH STUDENTS WHAT THEY NEED TO KNOW TO SUCCEED ON THE NEW CCSS-ALIGNED ASSESSMENTS (PARCC/SBAC)?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Not at all prepared	8.0%	5.1%	7.8%	5.5%	1.9%	6.0%
Slightly prepared	23.4%	18.7%	18.4%	18.3%	13.4%	18.4%
Somewhat prepared	47.2%	40.8%	42.5%	42.0%	41.5%	42.0%
Quite prepared	18.4%	32.2%	27.2%	30.0%	37.7%	29.8%
Extremely prepared	1.9%	2.5%	2.3%	3.9%	5.0%	2.8%
Skipped question	1.2%	0.8%	1.8%	0.4%	0.5%	1.1%
Number of teachers	225	253	348	295	219	1340

Table D11: Teacher/Principal Survey

HOW MANY TOTAL DAYS HAVE YOU SPENT IN FORMAL PROFESSIONAL DEVELOPMENT ON THE CCSS THIS SCHOOL YEAR (2014–2015)?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Teachers						
This school year (2014–2015)	3.4	3.4	4.4	3.7	4.1	3.8
Last school year (2013–2014)	5	3.9	5	4.6	4.4	4.5
Principals						
This school year (2014–2015)	4.3	4.3	5.1	3.7	4.6	4.5
Last school year (2013–2014)	5.4	5.1	5.6	5.5	4.3	5.3

Note. Table shows the average number of reported days.

Table D12: Teacher Survey

HOW FREQUENTLY DID YOU ENGAGE IN THE FOLLOWING TYPES OF COLLABORATIVE WORK WITH COLLEAGUES, A TEAM, OR A PROFESSIONAL LEARNING COMMUNITY THIS SCHOOL YEAR?						
	DE	**MA**	**MD**	**NM**	**NV**	**Overall**
Understanding the Common Core shifts and standards	22.2%	15.5%	28.6%	25.1%	37.6%	23.6%
Aligning materials and assessments to the CCSS	32.8%	18.4%	35.1%	25.2%	42.3%	27.9%
Sharing effective instructional strategies for preparing students to meet the CCSS	36.0%	25.8%	44.7%	32.1%	53.0%	36.0%
Observing other teachers' lessons that model instruction aligned to the CCSS	5.5%	4.4%	7.2%	7.9%	14.2%	6.7%
Analyzing data (student work) to improve student mastery of the CCSS	25.2%	12.2%	24.9%	17.5%	33.0%	19.8%
One or more of these topics	45.2%	32.0%	56.0%	40.4%	59.7%	44.5%

Note. Table shows the percent of teachers who reported engaging in such work every week.

Table D13: Teacher Survey

WERE YOU OBSERVED IN THE CLASSROOM THIS SCHOOL YEAR, EITHER AS PART OF A FORMAL EVALUATION OR FOR COACHING OR PEER FEEDBACK?						
	DE	MA	MD	NM	NV	Overall
Yes	92.2%	88.7%	83.2%	98.8%	97.3%	89.1%
No	7.4%	11.3%	16.6%	1.1%	2.3%	10.8%
Skipped question	0.4%	0.0%	0.2%	0.1%	0.4%	0.1%
Number of teachers	225	253	348	295	219	1340
IN YOUR POST-OBSERVATION CONFERENCES, DID YOU RECEIVE EXPLICIT FEEDBACK ON THE DEGREE TO WHICH YOUR INSTRUCTION WAS ALIGNED TO THE CCSS?						
Yes	56.0%	39.0%	47.0%	56.0%	63.0%	47.0%
No	24.0%	31.0%	23.0%	33.0%	24.0%	27.0%
Was observed but did not have a post-observation conference	13.0%	18.0%	14.0%	10.0%	7.0%	14.0%
Was not observed	7.4%	11.3%	16.6%	1.1%	2.3%	10.8%
Skipped question	0.4%	0.0%	0.2%	0.4%	2.9%	0.4%
Number of teachers	225	253	348	295	219	1340

Table D14: Principal Survey

TO WHAT EXTENT HAVE YOU FACED RESISTANCE TO THE CCSS FROM PARENTS OF STUDENTS IN YOUR SCHOOL?						
	DE	MA	MD	NM	NV	Overall
Not at all	44.1%	24.8%	31.7%	48.8%	29.8%	32.1%
Slightly	45.5%	56.4%	13.6%	14.0%	64.2%	35.1%
Somewhat	10.4%	17.7%	36.5%	19.8%	5.9%	23.4%
Quite a bit	0.0%	0.0%	18.3%	10.3%	0.0%	7.9%
A tremendous amount	0.0%	0.0%	0.0%	7.2%	0.0%	1.1%
Skipped question	0.0%	1.1%	0.0%	0.0%	0.0%	0.4%
Number of principals	22	24	31	30	19	126
HOW MUCH EFFORT HAVE YOU PUT INTO BUILDING SUPPORT FOR CCSS IMPLEMENTATION AMONG PARENTS OF STUDENTS IN YOUR SCHOOL?						
Not at all	2.5%	10.1%	2.0%	9.9%	0.0%	6.2%
Slightly	26.6%	48.7%	12.9%	7.8%	15.6%	26.9%
Somewhat	51.8%	39.6%	34.0%	67.4%	45.0%	42.8%
Quite a bit	15.4%	1.6%	40.8%	14.9%	39.4%	20.3%
A tremendous amount	3.7%	0.0%	6.4%	0.0%	0.0%	2.4%
Skipped question	0.0%	0.0%	3.9%	0.0%	0.0%	1.4%
Number of principals	22	24	31	30	19	126

Appendix E: Technical Appendix

I. Sampling Design

We stratified all schools serving Grades 4–8 in each state based on the percentage of students eligible for the federal free and reduced-price lunch program, students' average math achievement in 2014, and indicators of each school's rural, suburban, or urban location (Tipton, 2013). The number of teachers sampled from each stratum was proportional to the share of the state's math and ELA teachers in Grades 4–8 in each stratum. We chose the number of schools to sample from each stratum based on the average estimated number of teachers per school (rounded to the nearest integer, with a minimum of 1). Within a stratum, we selected schools with probability proportional to size (PPS) using a random number generator, with size being the estimated number of teachers in tested grades and subjects.

Because cluster analysis is sensitive to the choice of schools used to "seed" the clusters, we started by choosing 500 different sets of initial seeds. For each set of seeds, we simulated 100 samples using our PPS sampling method. For each of these samples, we calculated the squared distance of the sample average to the actual population average of the clustering variables using Gower's distance formula (Tipton, 2013). We chose the seed schools with the lowest average distance to the population means.

We performed a separate cluster analysis within each state. In Massachusetts, we clustered schools that administered PARCC in 2014–2015 separately from those that administered MCAS. Overall, we used 10 clusters per state in Nevada, New Mexico, Maryland, Delaware, and Massachusetts's PARCC-taking schools, with a target sample of schools employing 340 teachers in each state. For the MCAS schools in Massachusetts, we created four clusters and chose one school in each, as we only planned to include these schools in the descriptive survey analyses and not in analyses of the associations between CCSS implementation and PARCC/SBAC test scores.

II. Weighting

Because we used PPS and then surveyed every math and ELA teacher in the selected schools, teachers in different schools had unequal probabilities of selection. (An individual teacher in a large school had a higher probability of being sampled.) As a result, we used sampling weights to estimate the population distribution of teacher responses in the five states.

We had a target sample of 340 teachers in each state. The sampling weights for teachers and principals were calculated as follows:

$$w_{jis} = \frac{1}{\hat{p}_i}$$

$$\hat{p}_{is} = \frac{e_i n_s}{E_s}$$

$$n_s = \frac{\frac{340 * E_s}{\sum_{s=1}^{S} E_s}}{\frac{E_s}{N_s}} = \frac{340 * N_S}{\sum_{s=1}^{S} E_s}$$

In the equations above, the *j* subscript refers to teacher (or principal), the *i* subscript refers to school, the *s* subscript refers to stratum, and S is the total number of strata in the state. In addition, e_i is the estimated number of teachers in the tested grades and subjects in the school (based on data on school size and other data provided to us by the state agencies at the time of randomization), n_s refers to the number of schools selected in the stratum, and E_s represents the total number of teachers in the stratum.

In some states, the estimated number of teachers proved to be inaccurate. (For instance, the estimated number of teachers in tested grades and subjects provided to us for Massachusetts was far higher than the actual in most schools.) As a result, to generate the final weights for teachers, we post-multiplied the sampling weights by the ratio of actual to estimated teachers in the schools we surveyed. To generate the final weights for principals, we post-multiplied by the ratio of actual number of principals in the state (from administrative data) by the sample estimate of the number of principals in the state.

We also collected data in an auxiliary sample of schools that the state agencies believed to be "high implementers" of the CCSS. We did not use the survey

responses from these schools when describing the population distribution in the five states, since they were not part of the random sample. We did use the "high implementing" sample in Section III, however, in order to test whether the schools with high levels of teacher supports performed better. In no state did the number of "high implementing" schools represent more than 15 percent of the sample.

III. Creation of Survey Composite Indices

Because the teacher and principal survey instruments collectively contain nearly 100 items, we reduced the dimensionality by creating composite indices. To create the composite indices, we first conducted a principal component analysis (PCA) on multiple survey items. We restricted the variables included in the PCA to a more parsimonious set that directly captured either attitudes towards the CCSS or implementation of specific and replicable strategies. Given the combination of continuous, binary, and ordinal items, we used a correlation matrix where each correlation was calculated using the most appropriate method (i.e., polychoric correlation between ordinal or binary items, Pearson between continuous items, and polyserial between ordinal or binary and continuous items). We applied an oblique promax rotation, from which we created eight initial components by assigning items to the components where they had the highest absolute value loading. We made some additional modifications to the components, adding or removing survey items when there was a strong theoretical justification for doing so. Overall, we derived 12 components for which we analyzed associations with students' performance on PARCC and SBAC. Table 5 in Section III provides the complete list of these indices and their constituent survey items.

For the items that were on a 5-point Likert scale, we assigned a value of 1 through 5 to each response. For items that were on continuous scales (such as days of professional development), we used the reported value. For items that required respondents to choose one of multiple ranges, we used the midpoint of each range (e.g., "2–3 days" became 2.5). We standardized each item to have a mean of 0 and a standard deviation of 1 across all teachers. We took the average response on each item within each school, and then took the average across all items in each index within each school. Finally, we re-standardized these index scores across schools.

IV. Model Specification

The analyses described in Section III of this report are estimated using the following student-level equation:

$$a_{i,k,t} = \alpha A_{i,t-1} + \beta S_{i,t} + \delta P_{k,t} + \gamma T_{k,t} + \rho E_{i,t} + \zeta C_{s,t} + \nu_{i,k,t} \; where \; \nu_{i,k,t} = \mu_k + \theta_{k,t} + \varepsilon_{i,k,t}$$

where the outcome of interest, $a_{i,k,t}$ is the standardized test score for student *i* taught by teacher *k* during school year *t*. The remaining terms in the equation are defined below:

- $A_{i,t-1}$ (a vector of each student's prior achievement) includes:
  - $a_{i,t-1}$, student i's test score in the same subject (e.g., math when predicting math) from the previous school year, ***t-1***
  - the square and cube of $a_{i,t-1}$
  - the interaction of $a_{i,t-1}$ with a series of six indicator variables that show student *i*'s grade level in the prior school year, ***t-1***
  - $a'_{i,t-1}$, student i's test score in the other subject (e.g., reading when predicting math) from the previous school year, ***t-1***. If a student was missing $a'_{i,t-1}$ then we imputed it with a value of 0 (the average)
  - an indicator of whether $a'_{i,t-1}$ was imputed
  - an indicator of whether student i participated in PARCC or SBAC field tests in the previous school year, ***t-1*** (field testing occurred during the 2013–2014 school year)
  - an indicator of whether student ***i*** took the current year's test using a computer-based or paper administration
- $S_{i,t}$ includes:
  - an indicator for student ***i***'s gender
  - a set of seven mutually exclusive indicators of student ***i***'s racial or ethnic category (Black, Asian, Hispanic, Native American, White, other, and multiple)
  - an indicator for whether student ***i*** was eligible for free or reduced-price lunch in school year ***t***
  - an indicator for whether student ***i*** was classified as an English language learner or as limited English proficient in school year ***t***
  - an indicator for whether student ***i*** had an individualized education program in school year ***t***

- an indicator for whether student *i* was retained in grade (i.e., was at the same grade level in school years *t-1* and *t*)
- an indicator for whether student *i* was new to their school in school year t (i.e., was not at the same school in school year *t-1*)
- an indicator for whether student *i* took a supplemental class in the same subject during school year t (e.g., a catch-up math class for math)

➡ $P_{i,t}$ includes:

- the average and standard deviation of $a_{i,t-1}$ and $a'_{i,t-1}$ for all students in student i's class
- the total number of students in student *i*'s class
- the percentage of students in student *i*'s class who participated in PARCC or SBAC field tests in the previous school year *t-1* (field testing occurred during the 2013–2014 school year)
- percentage of student *i*'s class that is male
- percentage of student *i*'s class that belongs to each of the seven racial or ethnic categories
- percentage of student *i*'s class eligible for free or reduced-price lunch in school year *t*
- percentage of student *i*'s class that was classified as English language learner or limited English proficient in school year *t*
- percentage of student *i*'s class that had an individualized education program in school year *t*
- percentage of student *i*'s class that was retained in grade in school year *t*
- percentage of student *i*'s class that was new to the school in school year *t*

➡ $T_{k,t}$ includes:

- $\hat{\mu}_{k,t-1}$, teacher k's effectiveness estimate from the prior school year *t-1*. If a teacher's effectiveness could not be estimated in the prior year (e.g., teacher *k* was not present last year, taught a different subject, or taught too few students), then we imputed $\hat{\mu}_{k,t-1}$ to the average value (0)
- an indicator for whether or not $\hat{\mu}_{k,t-1}$ was imputed

➡ $E_{i,t}$ includes:

- an indicator for which state student *i* was enrolled in
- an indicator for student *i*'s grade in school year *t*

➡ $C_{s,t}$ is the component score or other school-level implementation measure, capturing one or more CCSS implementation strategies at student *i*'s school, *s*, in school year *t*.

- The coefficient on $C_{s,t}$, ζ, is the outcome of interest, reported in Section III

As noted above, we estimated the equation one component at a time.

When estimating teacher effects in Section IV, we used a similar specification, excluding $T_{k,t}$ and $C_{s,t}$. and estimated random effects for each teacher. In middle school grades, we also included random effects for the specific course section.

V. Sample Exclusions

Our sample of students was limited to records where all of the following were true:

➡ Both end-of-year and prior year scores in the same subject, $a_{i,k,t}$ and $a_{i,t-1}$, were not missing

➡ All of $S_{i,t}$ was not missing

➡ Student *i* can be linked to one core teacher *k* from whom the student received instruction in the subject

- The vast majority of students were taught by only one teacher in one class for a given subject
- If student *i* was in multiple classes with teacher *k*, the one where student *i* spent more of their time was assigned; if there was a tie, or time in class could not be determined, one class was chosen at random
- If student *i* was taught by multiple teachers, but only one of them was teaching a core class (e.g., student *i* was taking both fifth-grade math and supplemental arithmetic), student *i* was assigned to the teacher of the core class
- If student *i* was taught by multiple teachers in multiple core classes, then student *i* was excluded

➡ The class to which student *i* was assigned contained at least five but no more than 40 students; records with class sizes outside of these limits were generally indicative of misidentified class codes and accounted for approximately 1% of students.

VI. Estimation

When estimating the relationship between student achievement and the component indices, we used OLS estimation, with standard errors that allowed for clustering within schools. When estimating teacher effects, we used hierarchical linear modeling (HLM) with nested random effects for teachers and for different course sections taught by the same teacher (μ_k and $\theta_{j,k,t,}$). We estimated teacher random effects, $\hat{\mu}_k$, using empirical Bayes methods. These empirical Bayes estimates are the "shrunken" estimates of teacher effects (Raudenbush & Bryk, 2002). We used shrunken estimates of teacher effects in 2013–2014 as a control for teachers' prior effectiveness.

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