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Principals as Instructional Leaders: Harnessing Teacher and Administrator Perceptions from the 2016 Math in Common Annual Surveys

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WestEd's Evaluation of the Math in Common Initiative

Math in Common® is a five-year initiative, funded by the S.D. Bechtel, Jr. Foundation, that supports a formal network of 10 California school districts as they are implementing the Common Core State Standards in Mathematics (CCSS-M) across grades K–8. Math in Common grants have been awarded to the school districts of Dinuba, Elk Grove, Garden Grove, Long Beach, Oakland, Oceanside, Sacramento City, San Francisco, Sanger, and Santa Ana.

WestEd is providing developmental evaluation services over the course of the initiative. The evaluation plan is designed principally to provide relevant and timely information to help each of the Math in Common districts meet their implementation objectives. The overall evaluation centers around four central themes, which attempt to capture the major areas of work and focus in the districts as well as the primary indicators of change and growth. These themes are:

- » Shifts in teachers' instructional approaches related to the CCSS-M in grades K–8.
- » Changes in students' proficiency in mathematics, measured against the CCSS-M.
- » Change management processes at the school district level, including district leadership, organizational design, and management systems that specifically support and/or maintain investments in CCSS-M implementation.
- » The development and sustainability of the Math in Common Community of Practice.

Together, the Math in Common districts are part of a community of practice in which they share their progress and successes, as well as their challenges and lessons learned about supports needed for CCSS-M implementation. Learning for district representatives is supported by WestEd team members who provide technical assistance related to goal-setting and gathering evidence of implementation progress (e.g., by advising on data collection instruments, conducting independent data analyses, participating in team meetings to support leadership reflection). An additional organizational partner, California Education Partners, works with the community of practice by offering time, tools, and expertise for education leaders to work together to advance student success in mathematics. California Education Partners organizes Leadership Convenings three times per year, summer Principal Institutes, "opt-in" conferences on high-interest topics (e.g., formative assessment), and cross-district visitation opportunities.

Executive Summary

To learn more about the current state of implementation of the Common Core State Standards in Mathematics (CCSS-M) in California, we conducted a survey in which we heard from over 2,000 teachers and administrators in the 10 Math in Common districts across the state. While the survey responses are limited to these 10 districts, we believe the findings are broadly applicable, as many districts across the state and country are facing similar challenges in implementing new standards.

From our ongoing partnerships with these 10 districts over the past three years, we have learned that principals are increasingly being asked to lead implementation of the CCSS-M at their sites. In addition, many districts are beginning to define their principals as *instructional leaders*, although there is significant variation in the specific expectations that come with this designation.

Accordingly, to better inform the work of these site leaders who find themselves on the front lines of a sea change in mathematics instruction, we have oriented the discussion of our survey results in this report toward principals and those who lead them. And, to further explore principals' instructional leadership role, we have included text boxes throughout the report in which district leaders share their evolving understanding of what instructional leadership looks like in their respective districts.

Recent work from the Wallace Foundation suggests that when districts provide thoughtful professional development and support to principals, the effects are seen in both principal efficacy and in improved learning for teachers and students alike (Wahlstrom, Seashore Louis, Leithwood, & Anderson, 2010). Principals can drive significant change at their sites, but they need the right support and the right vision of what is needed for successful schoolwide collaboration.

Implications of the survey findings

Our 2016 survey results provide data on several factors that principals and teachers must effectively balance when implementing the CCSS-M. These data suggest several implications and next steps for district administrators, site leaders, and teachers to consider in order to improve student outcomes with the CCSS-M.

Achievement and support for special student populations

- » **Monitor progress of student subgroup populations.** The 2015 data on the academic performance of English learners and disabled students, along with the information on teacher training, suggests more can be done to monitor and support the progress of these and other subgroups of students. Specifically, principals reported that they want more information about *how to use Smarter Balanced assessment results to support teaching and learning*. This is a timely request, as districts in California will have significant resources related to the California Assessment of Student Performance and Progress (CAASPP) available to them this coming summer with the release of the 2016 CAASPP results and the ability to examine year-over-year progress.
- » **Provide additional teacher training.** English learners and students with disabilities need targeted support to be successful with the CCSS-M. Accordingly, districts must provide teachers with training on supporting these populations in order to improve student outcomes.



Instructional materials to support implementation of the Common Core State Standards in mathematics

- » **Observe classrooms with greater regularity.** Our 2016 data show that there is a disconnect between teacher and principal understanding of curriculum use. By regularly observing classrooms, principals can gather more first-hand knowledge of how teachers use and supplement curricula in order to ensure equitable access to mathematics content for all students.
- » **Develop systematic measures and processes to monitor improvement.** Teachers' reports on opportunities for observation and feedback highlighted the need for districts to develop systematic measures and processes to support classroom observations and teacher feedback.

Teachers' professional learning opportunities

- » **Choose high-quality professional learning with personalized follow-up for teachers.** Teachers in many districts still spend significant time listening to expert presenters rather than participating in more interactive and personalized professional learning activities. As discussed in our report on the 2015 survey findings, we continue to wonder whether current professional development is meeting teachers' needs and helping teachers sustain shifts in practice. We hear from teachers that principals and district leadership should continue to increase their investments in rich professional

development opportunities — particularly site-based learning opportunities such as peer lesson observation and reflection, and individual coaching and lesson feedback — in order to help teachers make meaningful shifts in practice.

Professional learning communities

- » **Observe teacher professional learning communities more frequently.** In districts where more teacher professional learning is now happening at school sites, often through PLCs, principals — as instructional leaders — should have the requisite knowledge and skills to observe, understand, and provide feedback concerning teachers' collaborative work. In order to support teachers in maximizing the positive impact of their work together and to create school-wide climates of collaboration, principals will need to balance their other responsibilities with a greater level of involvement with their site-based PLCs.

Site administrators' preparation for the role of instructional leader

- » **Set clear and realistic expectations for principals' instructional leadership.** Across the Math in Common districts, we see a wide range of expectations placed on principals under the banner of instructional leadership. Districts need to carefully consider the training and support required by principals to effectively function as instructional leaders for mathematics in the context of principals' many other responsibilities for managing organizational and instructional change at their sites.

Introduction

Question:

If you have made implementation of the Common Core State Standards in Mathematics a major priority for school improvement during the past 12 months, please briefly describe why.

Response:

With the transition to the new standards as well as the implementation of a math curriculum, this school year was key to ensure that teachers make the needed transition instead of staying stagnant. I tried to establish an environment where teachers feel comfortable moving forward knowing that mistakes and learning experiences will be made along the way. It is imperative that my staff continue learning and looking for best ways to implement the new standards and curriculum.

—Principal of a school in a Math in Common district, 2016

Based on this principal's response to a question in WestEd's 2016 annual survey of Math in Common site administrators, it is clear that school leaders have significant demands placed on them in relation to implementing the Common Core State Standards in Mathematics (CCSS-M). This principal — who may or may not have experience teaching in a mathematics classroom — has a multitude of responsibilities to support CCSS-M implementation: rolling out of both the CCSS-M and a new math curriculum aligned to the standards, fostering enthusiasm and a growth mindset among math teachers confronting a new paradigm in their profession, and putting durable institutional structures in place to ensure continued CCSS-M learning for students and teachers alike. And, on top of these CCSS-M implementation activities, a principal who is adhering to the California Professional Learning Standards for Education Leaders (Commission on Teacher Credentialing & California Department of Education, 2014) is expected to lead 16 different "elements" of the school, from developing a vision for instruction; to managing curriculum, assessment, school climate, facilities, and fiscal and human resources; to ensuring community partnerships and parent communication.

To learn more about the current state of CCSS-M implementation in California, in the spring of 2016 the WestEd research team administered its second annual survey of teachers and site administrators across the 10 Math in Common districts. With responses from over 2,000 participants, we collected timely data about how districts are implementing the CCSS-M, how these changes are felt and understood at the classroom and site level, and what it will take to continue effective implementation of the CCSS-M. While the voices responding to the survey represent teachers and site administrators from only 10 California districts, the information from these surveys is broadly applicable, as many districts across the state and country are facing similar challenges in implementing new standards.

In our work with districts this year, and in the survey responses we analyzed, a common theme emerged: principals and other site leaders are increasingly relied upon as crucial levers for complex organizational and instructional change across the Math in Common districts. As CCSS-M implementation continues and many districts shift their teacher professional development from centralized learning to learning centered at school sites (Seago, Perry, Reade, & Carroll, 2016), principals and site leaders are being asked to serve as instructional



A Note on Comparisons Between the 2015 and 2016 Surveys

For several reasons, this report includes only select analytic interpretation of year-over-year changes and similarities between the 2015 and 2016 survey results. Our initial review of the two years of data showed much similarity across years, but in many cases, the interpretation of this similarity was ambiguous.

The 2016 survey captures the views of over 2,000 educators, more than doubling the number of respondents of the 2015 administration, and adding the viewpoints of teachers and administrators from two additional districts that were not included last year. Because of the significantly larger sample from the Math in Common community and from each district, there is reason to believe that the 2016 samples offer more representative views of the teachers and administrators across the 10 districts, even though we recognize that the response rate is lower than hoped for.

Another factor that influenced our decision to limit the comparisons between the 2015 and 2016 surveys was that on several items (particularly those whose possible answers ranged from Strongly Disagree to Strongly Agree), we changed the Likert-scale response options from a 5-point scale to a 4-point scale by removing the midpoint (Neither Disagree nor Agree) to enable more precise data. These differing response options make comparisons on these items difficult to interpret across years.

Another reason we limited our comparisons of data from the two survey administrations has to do with the limitations of using two data points to examine trends in survey responses — that is, two years of data are not enough to indicate a trend. With our 2017 results, we will be better able to examine trends in teacher and administrator response patterns.

leaders for mathematics to an unprecedented extent. This shift is raising the pressure on districts to provide appropriate training and support to help their principals and site leaders¹ make this transition.

The impact of principals' leadership

Research tells us that thoughtful investments in principal learning can improve experiences and outcomes for everyone at a school site. Indeed, some districts have thought carefully about making these investments, while others have not as yet prioritized learning for administrators to the same degree. In a 2010 study, researchers from the University of Minnesota and the

University of Toronto investigated the chain of linkages between principals' instructional leadership and student achievement. Instructional leadership, as they saw it, has two dimensions: *Instructional climate*, the shaping of a sitewide culture of productive professional learning, and *instructional actions*, the specific steps principals take to work directly with teachers on their professional growth. The study found that when districts provided thoughtful professional development and support to principals, the effects were seen in both principal efficacy and in improved learning for teachers and students alike (Wahlstrom, Seashore Louis, Leithwood, & Anderson, 2010). Principals can drive significant change at their sites, but they need the right

¹ Although many principals will be asked to lead CCSS-M implementation at their sites, we know that mathematics is not every principal's area of greatest interest or strength, nor should it be expected to be. In many cases, other staff members at the site can fulfill the role of instructional leader — for this reason, in addition to the term "principals," we refer to "site leaders" and "site leadership" throughout this report, broadening the way we think about principal instructional leadership to include others at the site acting in a collaborative leadership effort.

support and the right vision of what is needed for successful schoolwide collaboration.

The report also found that student achievement, as measured by state test scores, improved in schools where principals worked to strengthen professional community at the site, including supporting teacher learning communities that emphasize the development of focused instruction. Figure 1 displays the relationships the authors mapped between principals' instructional leadership and student learning. The other influences on student learning shown in Figure 1, trust and shared leadership, will be addressed in later Math in Common reports.

Organization of the report

This report presents the findings from our second annual Math in Common survey, with a specific focus on five areas related to CCSS-M implementation that can either inform or be influenced by principals' instructional leadership. Each of these areas correspond to steps (shown in parentheses) from Figure 1.

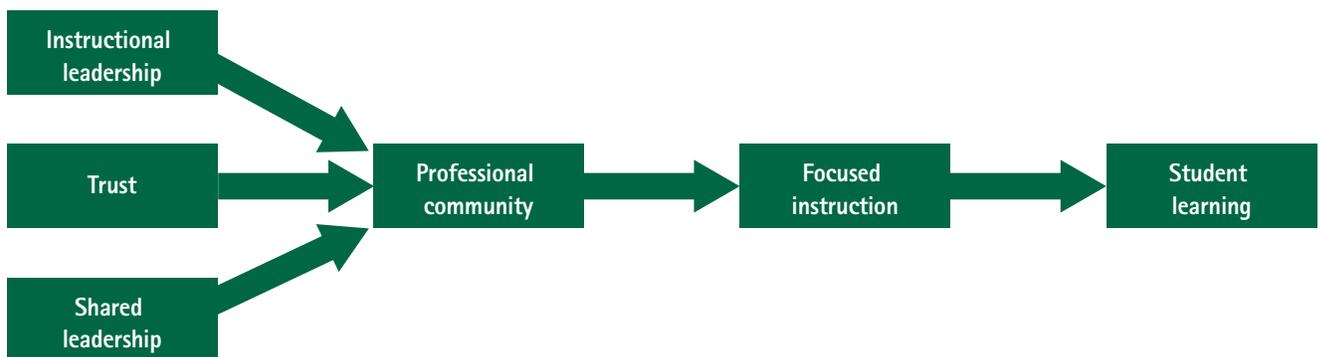
- » Achievement and support for special student populations (Student learning)
- » Instructional materials to support Common Core standards implementation (Focused instruction)
- » Teachers' professional learning opportunities (Focused instruction)
- » Professional learning communities (Professional community)

What is an instructional leader?

As many districts shift their expectations of the roles and duties of their principals, one term that comes up frequently is "instructional leader." But what does it mean? Does the meaning change across districts? Is leading instruction across subject areas a clear and reasonable expectation to place on principals?

We do not yet know if enabling principals to be better instructional leaders will positively impact CCSS-M implementation or student outcomes. But, to help explain the trend toward positioning principals as instructional leaders, this report includes a series of text boxes titled "What is an instructional leader?" Each box includes select district leaders' descriptions of the roles, responsibilities, and expectations for their principals as instructional leaders, as set out by their district.

Figure 1. Effects of Principals' Leadership Behaviors on Teacher Instruction and Student Learning



Source: Wahlstrom et al., 2010, p. 11.



» Site administrators' preparation for the role of instructional leader (Instructional leadership)

We selected these topics because we either already see districts working hard in these areas or we believe they will come to increasing prominence in the next year as districts allocate resources in response to year-over-year student scores on the California Assessment of Student Performance and Progress (CAASPP), which some educators worry may not show the kind of progress desired in student math achievement. Principals play a critical role in site-based CCSS-M implementation efforts and they are increasingly being positioned as instructional leaders for math reform. Accordingly, we think that, armed with more information and guidance on the focal

areas of this report and with thoughtful and thorough professional development provided by their districts, principals and site leaders can provide the kind of effective, persistent, and creative leadership needed to support teachers' ongoing instructional improvement and student academic achievement in the CCSS-M.

In our discussion of these five topics, we draw on teacher and principal² responses from the 2016 survey, along with comparisons to the 2015 survey results (Perry et al., 2015) where applicable. (More information on survey methodology, as well as complete frequency results for teachers and administrators, can be found in Appendices A, B, C, and D.)

² Throughout the report, we use the term "principal" to represent all of the respondents to the administrator survey, since 81 percent of respondents indicated this as their administrator role.

Achievement and Support for Special Student Populations

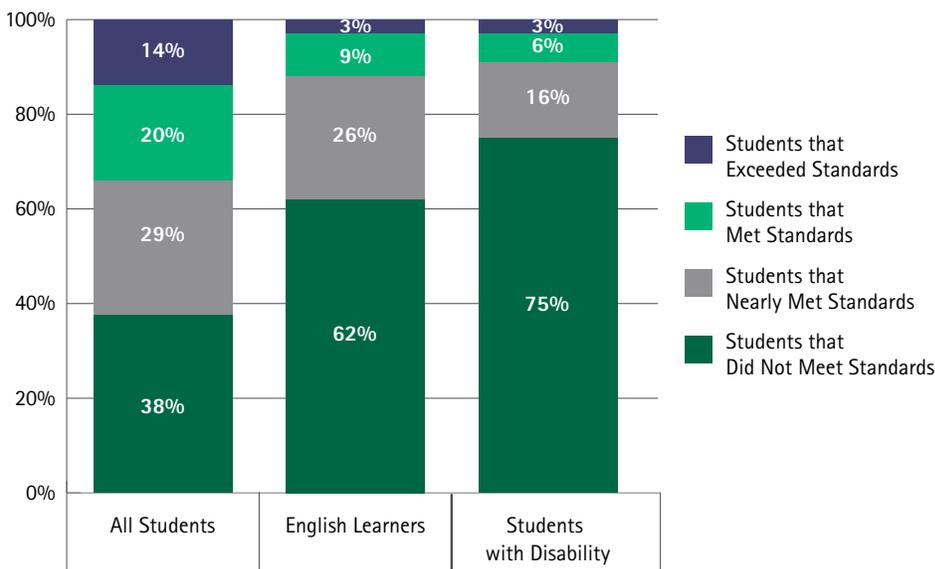
Figure 1 shows how principal leadership indirectly influences student learning. Wahlstrom and colleagues (2010) found that the principal is the second most important influence on student outcomes (classroom instruction is the top influence). One way principals can improve classroom instruction and student achievement is by supporting their staff in reviewing student achievement data and setting a direction for schoolwide improvement based on their analysis of the data. Districts can support principals in this effort by providing them with school- and grade-level data and data disaggregated by student subpopulation, along with appropriate training on interpreting the data.

Performance of student subpopulations on the California Assessment of Student Performance and Progress

In the Math in Common districts, scores from the 2015 California Assessment of Student Performance and

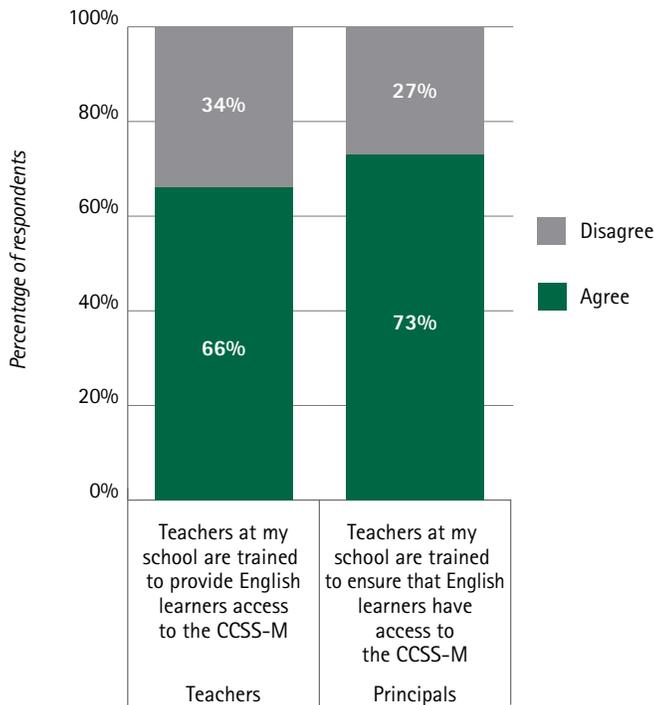
Progress (CAASPP) highlight a dramatic need for those who directly and indirectly influence student instruction in mathematics to deepen their focused support for English learners and students with disabilities. As shown in Figure 2, in 2015 about one-third (38%) of all students in the Math in Common districts did not meet the standard on the CAASPP in mathematics, while 62% of English learners and 75% of students with disabilities

Figure 2. Student Achievement Levels on the California Assessment of Student Performance and Progress, Math in Common Districts, 2015



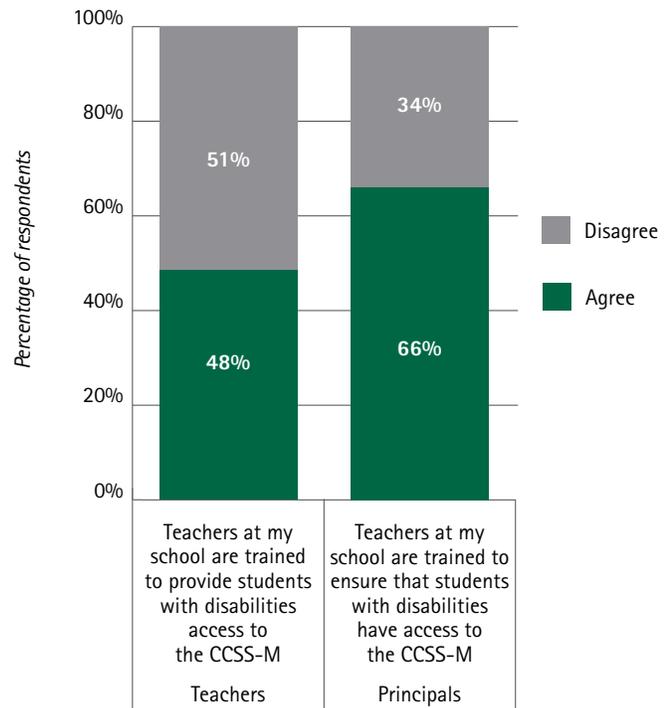
Source: California Department of Education, 2015.

Figure 3. Teacher and Principal Perceptions of Teacher Training to Support English Learners



Source: WestEd's annual survey of teachers and administrators in the 10 Math in Common districts (2016).

Figure 4. Teacher and Principal Perceptions of Teacher Training to Support Students with Disabilities



Source: WestEd's annual survey of teachers and administrators in the 10 Math in Common districts (2016).

did not meet the standard.³ These results for English learners and students with disabilities suggest that Math in Common districts may need to provide additional or different kinds of supports for these populations and their teachers to improve the academic achievement of these students.

Principals' perceptions of teacher training to support special student populations

Principals generally agreed that teachers were prepared to support both English learners and students with disabilities, while teachers themselves were less certain. A majority of principals agreed with the statements *Teachers at my school are trained to ensure that English learners have access to the CCSS-M* (73%) and *Teachers at my school are trained to ensure that students with disabilities have access to the CCSS-M* (66%; see Figures 3 and 4).

³ These CAASPP mathematics results for English learners and students with disabilities in the Math in Common districts mirror the results for the rest of the state (California Department of Education, 2015).

When principals were asked what five things they most needed to effectively support CCSS-M implementation at their school, support for special populations of students was not, overall, among the five most frequently listed items.⁴ Only a third of principals indicated that *more effective strategies for teaching English learners* (31%) and *more effective strategies for teaching special needs students* (29%) were in the top five listed items. This signals that these populations, who are struggling to access the CCSS-M, are not yet a top-ranked priority (from the list we included in the survey) for principals in their implementation of the CCSS-M.

Teachers' training to support special student populations

Teachers' 2016 survey responses also indicate that more is needed to support these two groups of students. We asked teachers about the training they received to provide English learners and students with disabilities access to the CCSS-M. While two thirds (66%) of teachers feel that teachers at their school *are trained to provide English learners access to CCSS-M*, only about half (48%) agreed that *teachers at my school are trained to provide students with disabilities access to the CCSS-M* (see Figures 3 and 4). These response patterns highlight issues that site leaders need to consider when planning for teacher professional learning to deepen access to CCSS-M for all students.

A significant proportion of math teachers in the Math in Common districts reported that teachers at their school received training for helping English learners to access the CCSS-M. However, if the results of the 2016 CAASPP in mathematics are similar to the 2015 results (in which a majority of English learners did not meet the standards), there may still be a need for additional or better training for teachers to help them support their English learner students. Only a small proportion of students with disabilities achieved the standards on

What is an instructional leader?

"As the lead learners of their school, principals are expected to have a clear understanding of the instructional program and the requisite pedagogy that will ensure growth in student learning. Principals are supervised and evaluated by [district office staff] and are held accountable for their students' learning. Principals are held accountable for their regular visits to classrooms and for providing teachers with actionable feedback around learning. Principals engage in professional learning around instructional topics and routinely deliver professional learning opportunities for their own staff.

[District office staff] provide support and resources (such as 'Look For' documents) during principals' meetings and administrator-focused trainings. It is expected that principals use evidence to guide the work of the Instructional Leadership Team. Principals hold individual data chats with their teachers to focus on student learning and to plan for instructional decisions that will improve the learning for all students. The overarching responsibility for principals is to make leadership decisions that are rooted in student learning."

—Math in Common district representative

the 2015 CAASPP in mathematics, and less than half of teachers reported that colleagues have had training to support students with disabilities. While we cannot draw a definitive connection between teachers' reports of training to support students with disabilities and the achievement of students with disabilities, we believe these statistics together highlight the need for districts to rethink their teacher training around special populations.

4 The five most frequently requested supports were: More information on how to use Smarter Balanced assessment results to support teaching and student learning (74%), More time to observe teachers teaching in their classroom (63%), A firmer understanding of how students' thinking of mathematics develops over time/ grade level (60%), More opportunities for teacher collaboration (59%), and More professional development for teachers (58%).



In 2016, the average percentage of teachers in Math in Common districts who agreed with the statement, *teachers at my school are trained to provide English learners access to the CCSS-M* varied from a low of 55% to a high of 90% across districts. The district with the largest percentage of English learners is one of the districts with the greatest percentage of teachers agreeing with this statement, but overall the correlation between the percentage of English learners in the districts and teachers' ratings of their colleagues' preparation to provide English learners access to the CCSS-M was not strong ($r = .13$).⁵ In open-ended responses, several teachers noted that the CCSS-M – with its focus on authentic problem solving and communicating mathematical thinking – place new language demands on their English learners. Because math language is central to students' mastery of the CCSS-M, it is imperative that teachers receive training to learn how to help their English learners discuss their mathematical

ideas effectively. Two teachers made the following comments about the new language demands involved in the CCSS-M:

"I have had to incorporate a lot more word problems and adjust my teaching to meet the needs of my English language learners and low readers. They are used to having more access in math by just computing numbers even without having a strong control of the language. Now, every problem demands language skills."

"This year I'll be taking a more in depth look at what skills need to be taught and how to modify and scaffold those skills for those that need more scaffolding: students with an IEP [individualized education program] and English language learners."

⁵ Data on the percentage of English learners in each Math in Common district used for this correlation is drawn from the National Center for Education Statistics district search database (2016).

Instructional Materials to Support Common Core State Standards Implementation

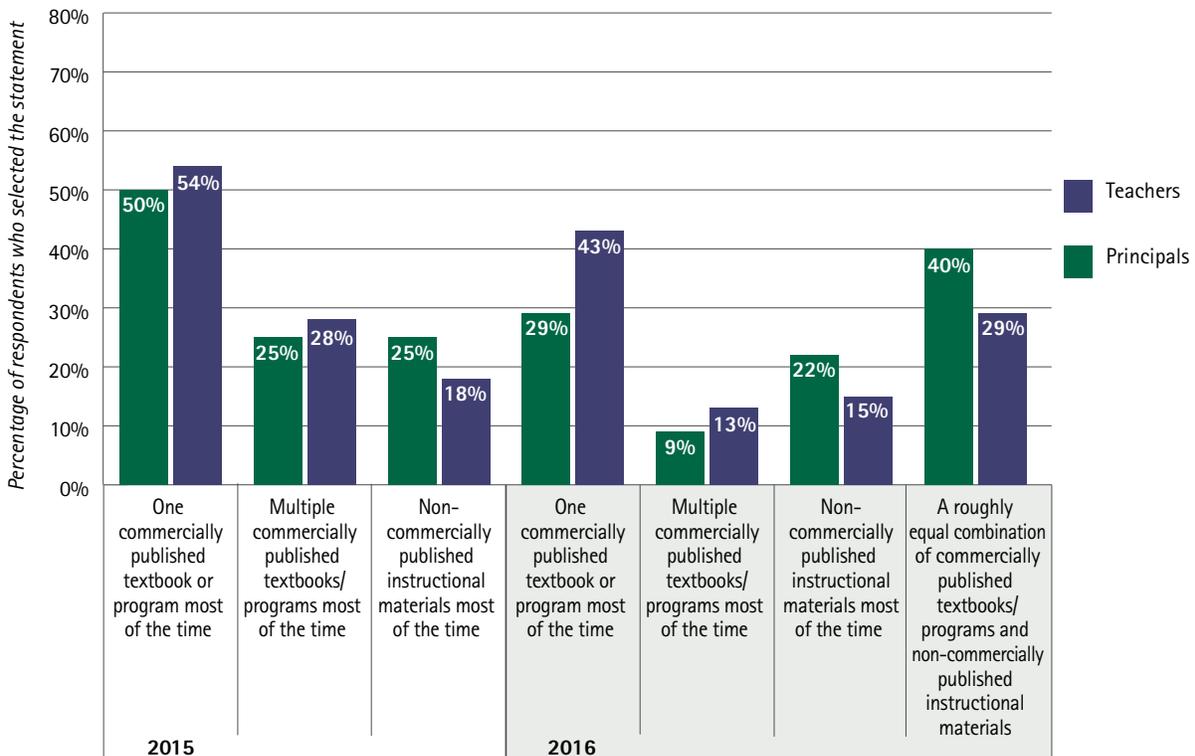
Instructional materials used by the Math in Common districts

As shown in Figure 1, a direct influence on student learning is “focused instruction,” and a key component of focused instruction is the instructional materials used in the classroom (Cohen, Raudenbush, & Ball, 2003). The instructional materials available in each district are major drivers of education improvement efforts. It is therefore imperative that site leaders have a good understanding of a range of issues related to instructional materials, including the materials teachers are using in their

classrooms to implement the CCSS-M; the decisions teachers are making about curriculum use in their classrooms (e.g., supplementing the primary curriculum materials with additional materials if the curriculum “falls short”); and the areas where teachers need more or less support with the curriculum (e.g., to help teachers better understand the mathematical goals of the curriculum).

We asked teachers and principals to report on the math instructional materials used most often in their schools and classrooms, and the answers to this question revealed a disconnect between the two groups (see Figure 5). While the largest percentage of principals

Figure 5. Teacher and Principal Perceptions of Curriculum Materials Currently in Use



Note: The fourth response option, “A roughly equal combination of...instructional materials,” was only available in the 2016 administration of the survey.

Source: WestEd’s annual survey of teachers and administrators in the 10 Math in Common districts (2015, 2016).



What is an instructional leader?

"We are ... trying to define details attributed to the role of instructional leader. We are exploring the Center for Educational Leadership's framework on leadership as a reference tool (2015). Within this framework there are four dimensions related to effective school leadership and the qualities of leaders. These dimensions can be roughly defined as follows:

1. Shared Vision – Developing a vision and common set of expectations for teachers and leaders, which drive the daily operation of the site.
2. Improvement of Instructional Practice – Using valid and reliable data, sources of data, and resources related to data collection to drive decision-making within a site's structure.
3. Effective Allocation of Resources – Accessing and structuring resources/procedures to support shifts in teaching to promote learning of all students.
4. Management of Systems and Processes – Using feedback and data as part of a cycle of inquiry

to ensure there is a structure in place to support teachers' growth ([through] professional development) and students' learning.

[Our district's] expectations fall in line with the above 'dimensions.' Specifically, the roles of instructional leaders include creating:

- A learning-focused culture measured by improvement in instructional practice and student learning.
- An environment of 'public and reflective practice.'
- An environment addressing the diverse needs of ALL students.

[The role of instructional leaders is also] grounded in the relentless pursuit of equity and the use of data as levers to eliminate the achievement gap."

– Math in Common district representative

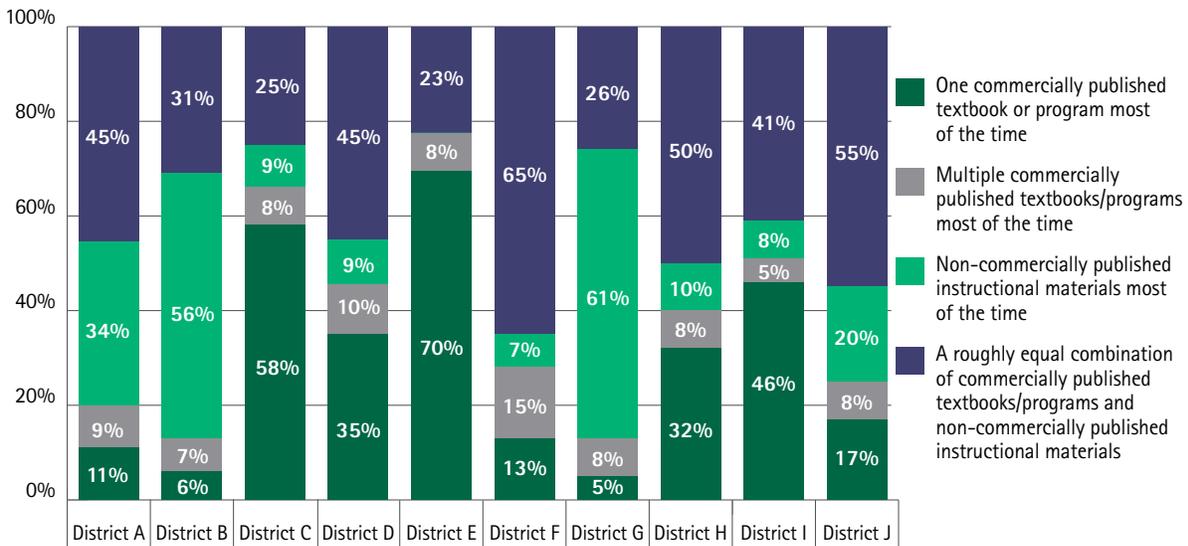
(43%) reported that students were using one commercially published textbook, 40% of teachers reported using a mix of commercial and non-commercial materials with their students. By contrast, in the 2015 survey, teachers and principals were more closely aligned in their responses; about half of both teachers and principals reported that one commercially published textbook was being used in math classrooms.

The difference between the responses of principals and teachers in the 2016 survey regarding what materials are in use suggests that principals may not be as aware of what is happening in the classrooms with curriculum materials as they could be. From our ongoing work with the Math in Common districts, we understand that most do not yet have systematic districtwide observation processes for gathering information about which materials or

pedagogical strategies teachers are using in their classrooms, nor for understanding how the materials are used to build student mathematics understanding. Developing a monitoring system that would enable those processes may be one important area of support for CCSS-M implementation that would increase site leaders' familiarity with the specifics of CCSS-M classroom instruction and enable them to identify areas of needed support.

Figure 6 shows the differences in the types of materials and resources teachers across the 10 Math in Common districts report using with their students. While California does not yet have a statewide system to accurately track the curriculum materials adopted by each district in support of the CCSS-M, Figure 6 illustrates the wide variety of instructional materials in play across the Math in Common districts. This small sample

Figure 6. Teacher Perceptions of Curriculum Materials Currently in Use, by Math in Common District



Source: WestEd's annual survey of teachers and administrators in the 10 Math in Common districts (2016).

of districts may be reflective of the types of math curriculum used by the total population of districts across the state. (Note: the figure shows only the general *type* of instructional material being used by the districts, but does not provide additional information on the variation within these types of materials.) As instructional materials are an important component in student learning, the variation in materials shown in Figure 6 has significant implications for student outcomes. It will benefit all of the Math in Common districts to carefully monitor student achievement relative to curricular choices.

Resources to align instruction with CCSS-M

The majority of teachers and principals (73% and 67%, respectively) agreed that their district provided teachers with the resources they needed to align instruction with CCSS-M (see Figure 7 on page 12). However, regardless of whether or not districts provide the resources teachers need, a third of teachers (33%) in the 2016 survey

indicated that they needed more support aligning curriculum to the CCSS-M standards.

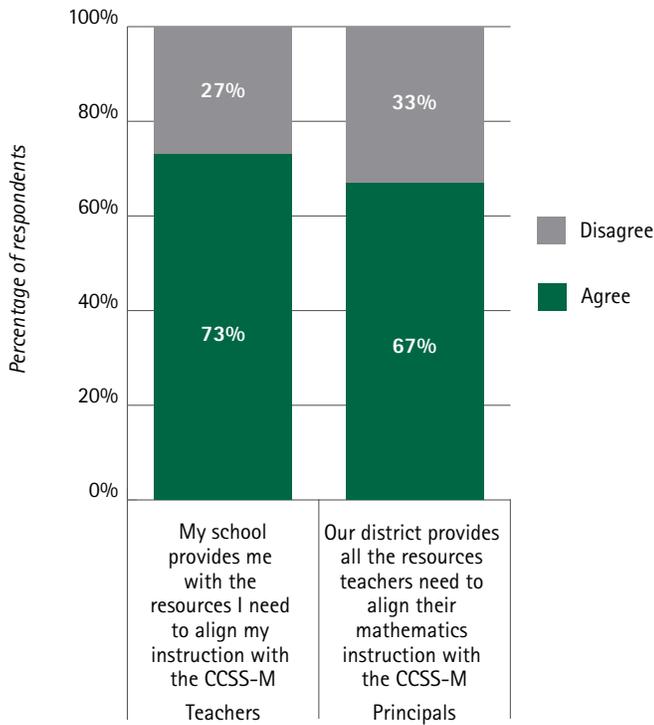
When asked to write about additional supports they need to effectively implement the CCSS-M, several teachers mentioned their difficulty with curriculum materials provided to support special populations of students to be successful with the new standards:

"[The] district does not provide adequate textbooks and/or instructional materials to teachers to use to effectively implement CCSS in math. Elementary teachers at different sites use different methods and materials. Teachers waste many hours copying resources. Curriculum for students is not common districtwide. Teachers are exhausted."

"[I need] realistic pacing that allows time to master concepts prior to moving on to new topics; time to teach students how to write to mathematic prompts; and time to help struggling readers and English learner students handle the rigor of the questioning style."



Figure 7. Teacher and Principal Perceptions of the Provision of Resources to Align Instruction with CCSS-M



Source: WestEd's annual survey of teachers and administrators in the 10 Math in Common districts (2016).

"I teach a special day class for students with moderate to severe disabilities...My hardest challenges and frustrations as a teacher include making my own materials because the differentiation [options offered by] commercial materials are made for students with mild to moderate disabilities at best."

"I modify the district curriculum to meet the needs of all my students with disabilities. I use

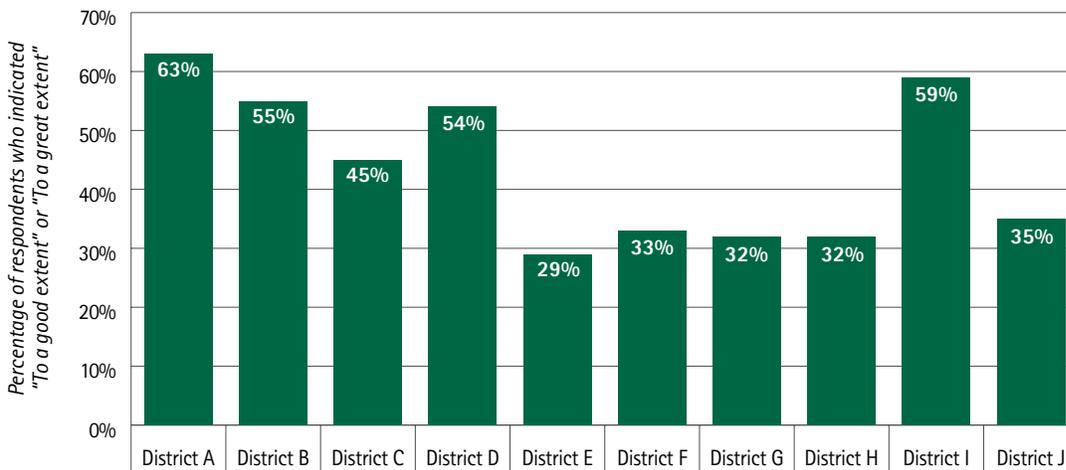
manipulatives, collaborative conversations, formative assessments, and direct instruction to guide my teaching."

As site leaders build their understanding of curriculum use and needs at their schools, they will be able to better support teachers with site-based, lesson-focused professional learning opportunities that enable teachers to explore the relationships between instruction, curriculum materials, and student achievement.

Teachers' Professional Learning Opportunities

In the 2016 survey, teachers across all 10 Math in Common districts reported that, over the last 12 months, they received support via professional learning activities to deeply understand mathematics content (from 29% to 63% of teachers across districts reported a good or great amount of support from professional learning activities) and to use instructional strategies to nurture students' understanding (from 25% to 55% of teachers reported to a good or great extent of support; see Figures 8a and 8b). Conversely, when principals were asked about the professional development opportunities provided for teachers, they were much more certain that their district provided opportunities to develop teachers' mathematics content knowledge (87% agreed) and knowledge of instructional practices (89% agreed) (see Figure 9).

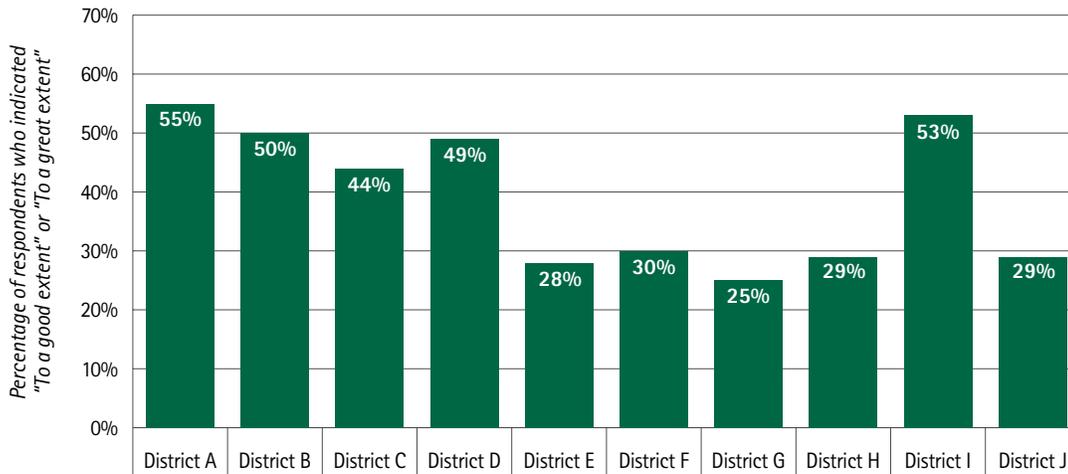
Figure 8a. Teacher Perceptions of the Extent of Support Provided through Professional Learning to Understand Mathematics Content, by Math in Common District



Note: Teachers were asked, "To what extent have your professional learning activities during the past 12 months provided you with the support needed to deeply understand the mathematics content you need to teach to your students?" Teachers selected their responses from a five-point scale that ranged from "Not at all" to "To a great extent."

Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2016).

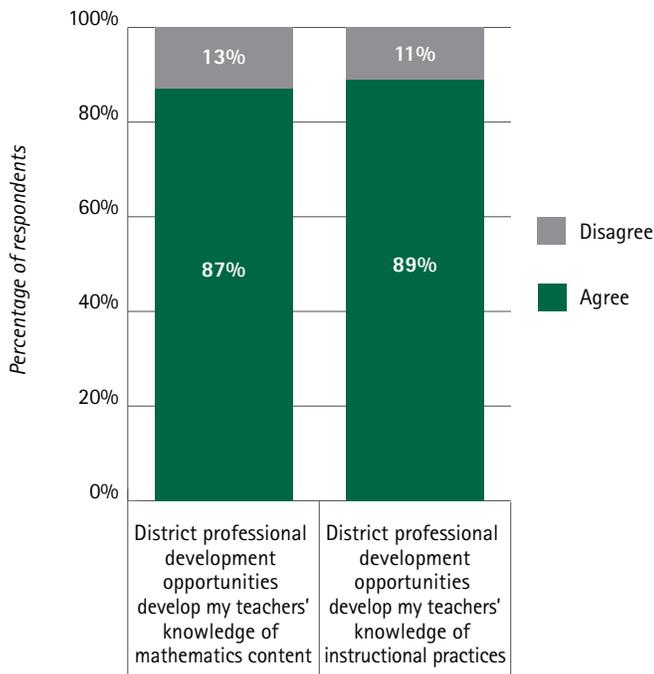
Figure 8b. Teacher Perceptions of the Extent of Support Provided through Professional Learning to Use Instructional Practices, by Math in Common District



Note: Teachers were asked, "To what extent have your professional learning activities during the past 12 months provided you with the support you needed to use instructional practices that nurture students' understanding of the CCSS Standards for Mathematical Practice?" Teachers selected their responses from a five-point scale that ranged from "Not at all" to "To a great extent."

Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2016).

Figure 9. Principal Perceptions of Whether District Professional Learning Opportunities Developed Teacher Knowledge



Source: WestEd's annual survey of administrators in the 10 Math in Common districts (2016).

Recent findings from RAND's American Teacher Panel and American School Leader Panel underscored the importance of providing teachers with rich professional learning experiences — that is, learning activities that are job-embedded and offer follow-up from coaches or colleagues — to help them begin to change their instructional practices in support of the CCSS-M (Hamilton et al., 2016). Yet the majority (58%) of teacher respondents in our 2016 survey reported spending most of their professional learning time (more than 4 hours over the last 12 months) in what is, when taken at face value, a more passive form of learning — *listening to a presentation by an expert presenter* (see Figure 10), which is likely not the type of "rich" professional learning advocated for in the RAND panels. The RAND report found that the types of professional development that teachers requested most were on topics unlikely to be meaningfully approached by having teachers only listening to presentations by expert presenters: differentiating instruction and developing

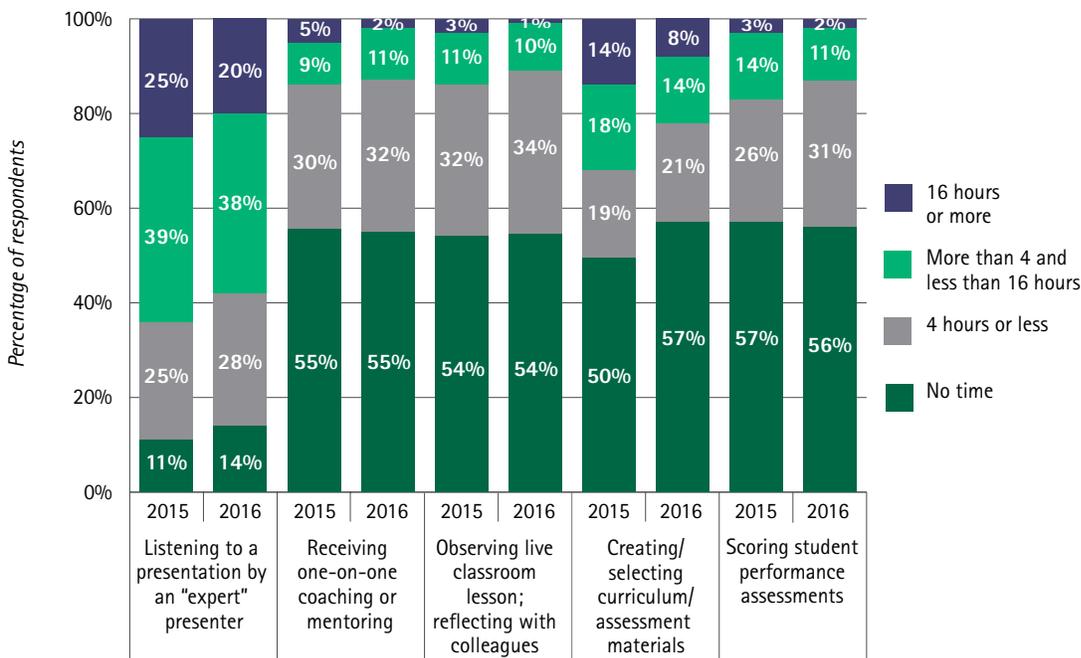
complex, inquiry-based models of instruction (like problem solving and argumentation).

Replicating findings from 2015, our 2016 survey also showed that few teachers spent more than 4 hours pursuing what are typically "richer" professional learning activities: *observing live classroom lessons and reflecting with colleagues afterward* (only 11% of teachers spent more than 4 hours doing this activity); *receiving one-on-one coaching or mentoring related to the CCSS-M* (13%); and *scoring student performance assessments* (13%; see Figure 10).

Usefulness of professional learning activities

We asked teachers to rate the usefulness of different professional learning activities for supporting their CCSS-M implementation (see Figure 11). Most teachers

Figure 10. Amount of Time that Teachers Reported Spending in Various Mathematics-Related Professional Learning Activities



Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2015, 2016).



What types of professional learning do teachers need to help them effectively implement the Common Core State Standards?

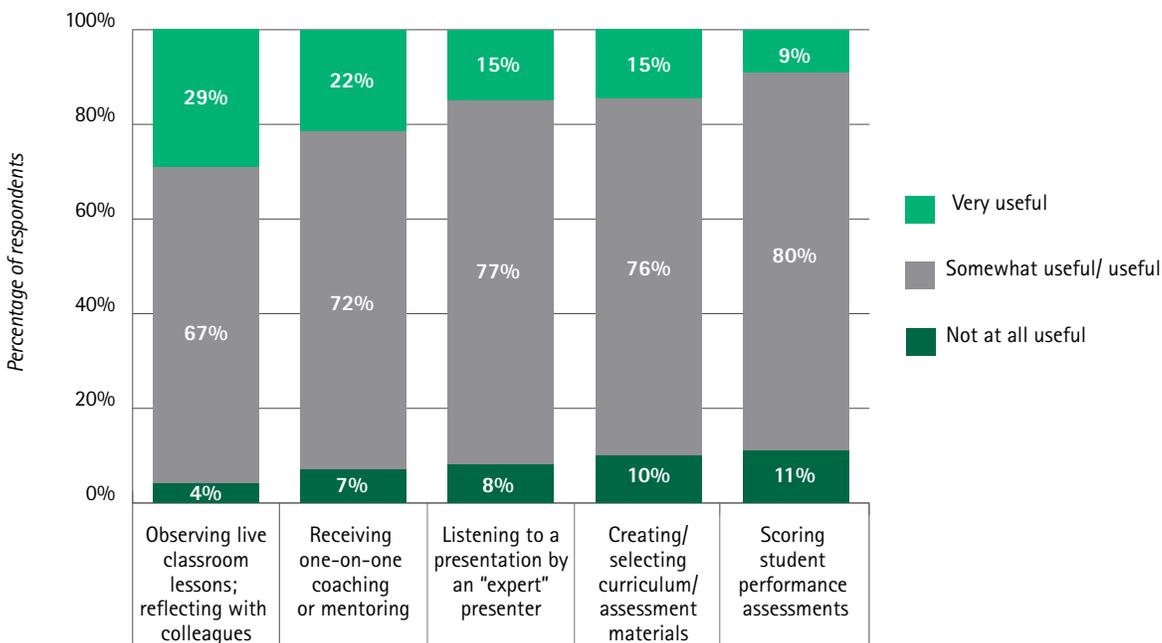
"Educators say that large workshop sessions, though perhaps adequate to introduce broad CCSS concepts and strategies, do little to build teachers' capabilities to adopt and implement new instructional strategies compatible with CCSS. More is needed. All teachers, but most especially math teachers, need hands-on, interactive, locally accessible coaching as they make the transition from traditional practices and multiple choice assessments to the learning and skills [of the] CCSS" (McLaughlin, Glaab, & Hilliger Carrasco, 2014).

types of professional learning activities). Interestingly, the two activities that were cited by teachers as the most useful were both site-based forms of professional learning: *observing live classroom lessons and reflecting with colleagues afterward* (described as very useful by 29% of respondents) and *receiving one-on-one coaching or mentoring related to the CCSS-M* (described as very useful by 22% of respondents). This suggests that Math in Common site leaders are on the right track as they create more opportunities for site-located professional learning, like lesson study and study of embedded formative assessment (we reported on the trend toward site-located, lesson-focused professional learning in our last Math in Common report; Seago et al., 2016).

In a related question, we asked teachers to report on their participation in post-observation conferences, and about receiving coaching or feedback on the alignment of their instruction with the CCSS-M. Half (50%) of teachers indicated that they had never participated in such types of reflective conversations. Of the

rated each of the professional learning activities as somewhat useful or useful (from 67% to 80% across the five

Figure 11. Teacher Perceptions of the Usefulness of Various Professional Learning Activities in Supporting CCSS-M Implementation



Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2016).



respondents who reported that they had received coaching or feedback, 61% said that it was *useful* or *very useful*, validating the importance of classroom observation and feedback as an important form of professional development for site leaders to consider for their staff. Research literature indicates that personalized coaching or feedback sessions are imperative to support teachers as they make the instructional shifts required by CCSS-M (see sidebar: *What types of professional*

learning do teachers need to help them effectively implement the Common Core State Standards"?).

Site leaders have limited time and resources to spend on professional development. As they weigh the possibilities for how to most positively influence student learning, the need is becoming increasingly clear for them to invest in rich professional development opportunities to help teachers make meaningful shifts in practice aligned to the CCSS-M.



Professional Learning Communities

In our previous evaluation cycle report, *Bringing the Common Core State Standards to life through site-located teacher learning structures*, (Seago et al., 2016) we found Math in Common districts increasingly exploring site-based professional development models, instead of or in addition to traditional centralized professional development. Our survey results from both years tell us that teachers find this work valuable and want to do more of it, but because of chronic substitute shortages, it can be difficult to find time for teachers to gather and learn together.

Principals can play a make-or-break role in the success of site-based teacher learning activities, including getting creative about ways to help teachers organize collaborative time. Professional learning communities (PLCs) are one way that schools frequently try to leverage the strength of teacher collaboration. As Wahlstrom and colleagues (2010) wrote of the schools where professional communities truly improved teacher and student learning:

Professional community amounts to more than support and more than team discussion or data analysis. It is based on shared instructional values, a common focus on student learning (including assessment), collaboration in the development of curriculum and instruction, and the purposeful sharing of practices. (p. 10)

As Figure 1 illustrates, a culture of professional collaboration and mutual support has an impact on student learning. But the PLC structure does not automatically generate deep student learning. Site leaders, coaches, and teacher leaders must carefully plan and cultivate PLCs. As more schools in the Math in Common network and across the state consider organizing PLCs — and as existing PLCs aim to increase their effectiveness — PLC members and those who support them are having to think carefully about the communities' goals, structures, and the type of work they pursue.

Teacher participation in professional learning communities

Teachers' survey responses revealed that the majority of teachers (79%) in Math in Common districts have

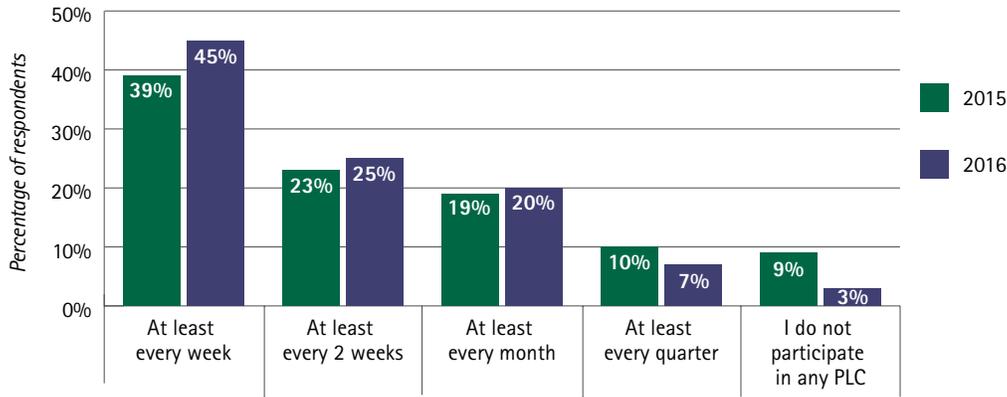
a dedicated block of time at their school for PLCs. Additionally, survey data across the two years suggest that there is increasing teacher participation in PLCs. In 2016, 45% of teachers reported participating in PLCs at least every week, compared to 39% of 2015 respondents (see Figure 12). Additionally, a smaller percentage of 2016 respondents indicated they do not participate in any PLC (3%), compared with the 2015 cohort of teacher respondents (9%).

Structure and professional learning activities across PLCs

In most Math in Common districts, the majority of teachers reported spending 60 minutes or less in their PLC meetings. As shown in Figure 13, the 2016 teacher respondents reported that their PLCs are further along in implementation than 2015 respondents regarding each of three professional learning activities we asked about. In addition, the greatest percentage of 2016 teachers reported that their PLCs were *beyond initial implementation or deeply embedded in our culture* on the following three activities:

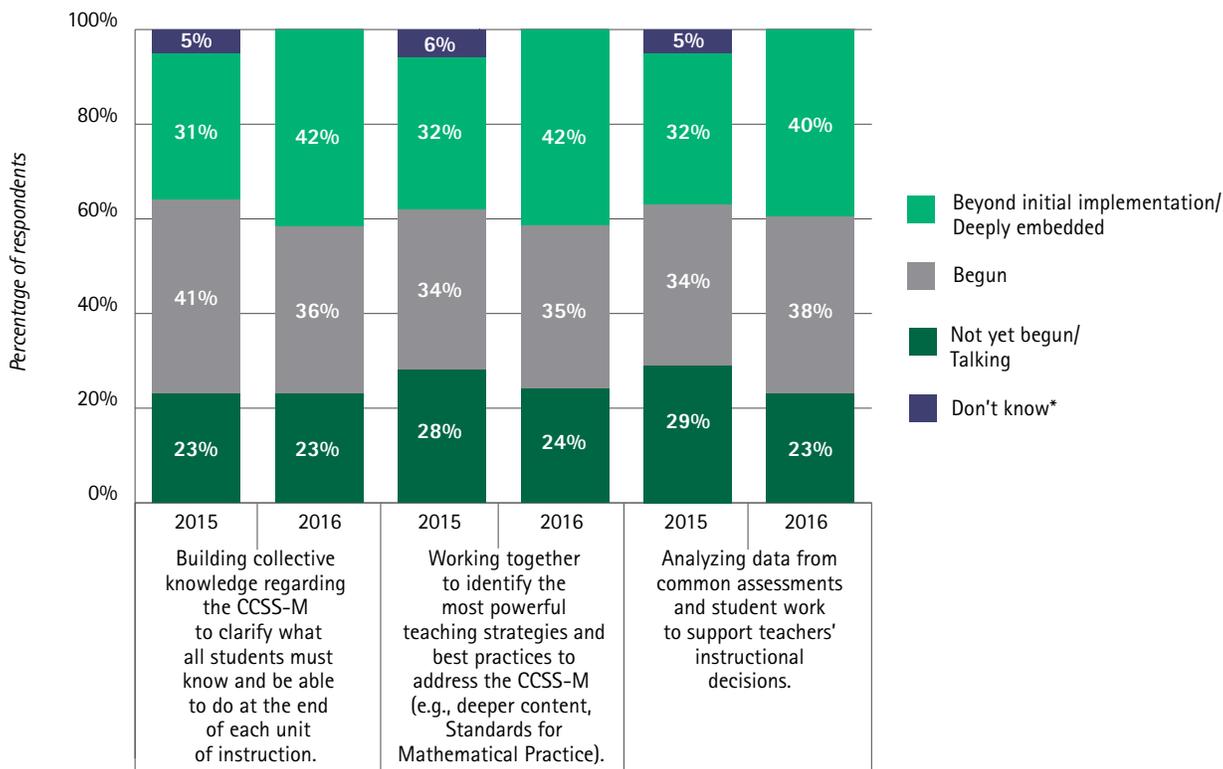
- » Building collective knowledge regarding the CCSS-M to clarify what all students must know and be able to do at the end of each unit of instruction (42% were beyond initial implementation in 2016, compared to 31% in 2015).
- » Working together to identify the most powerful teaching strategies and best practices to address the CCSS-M (e.g., deeper content, Standards for

Figure 12. Frequency of Teacher Participation in Professional Learning Communities



Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2015, 2016).

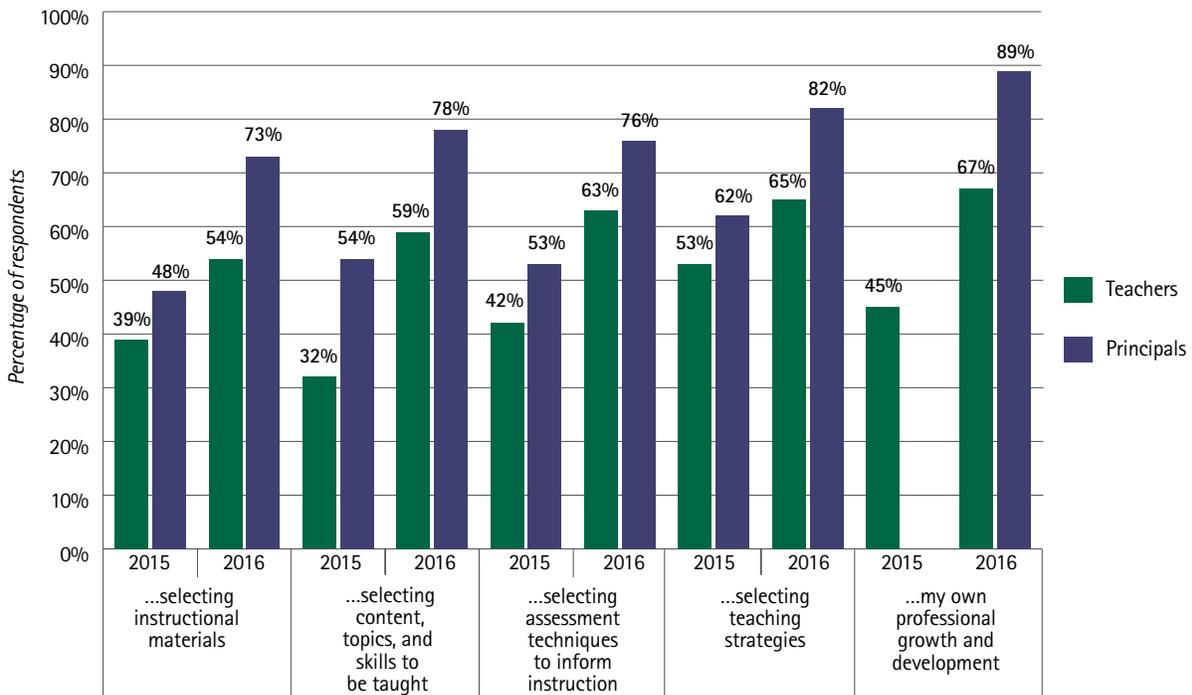
Figure 13. Teacher Perceptions of the Progress of Their Professional Learning Communities



* In 2015, respondents could select "Don't know" as an answer to this item. In 2016, the response "Don't know" was removed from the survey. Therefore it is difficult to directly compare the percentage of respondents in each response category.

Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2015, 2016).

Figure 14. Extent of Teacher and Principal Agreement that Teachers Spent More Time Collaborating This Year in Various Activities Compared to the Prior School Year



Note: Teachers were asked to agree or disagree with the following statement: "I have spent more time this year than in prior years collaborating with teachers on..." Principals were asked to agree or disagree with the following statement: "At my school, teachers have spent more time this year than in prior years collaborating on..."

Source: WestEd's annual survey of teachers and administrators in the 10 Math in Common districts (2015, 2016).

Mathematical Practice; 42% were beyond initial implementation in 2016, compared to 32% in 2015).

- » Analyzing data from common assessments and student work to support teachers' instructional decisions (40% were beyond initial implementation in 2016, compared to 32% in 2015).

Teacher collaboration

When both teachers and principals were asked about the extent to which teachers spent more time collaborating this year compared to prior years (not necessarily limited

to their work in PLCs), 67% of teachers and 89% of principals agreed that teachers collaborated more often in 2016 on *teachers' own professional growth and development* (see Figure 14). Similarly, 54% of teachers and 73% of principals agreed that teacher collaboration occurred least frequently in 2016 around *selecting instructional materials*, likely reflecting the fact that most Math in Common districts had adopted math instructional materials before the 2016 survey. While professional learning communities can provide a dedicated opportunity for teachers to collaborate in their work, the 2016 survey data suggest that teachers do not feel they are collaborating as much as principals do.



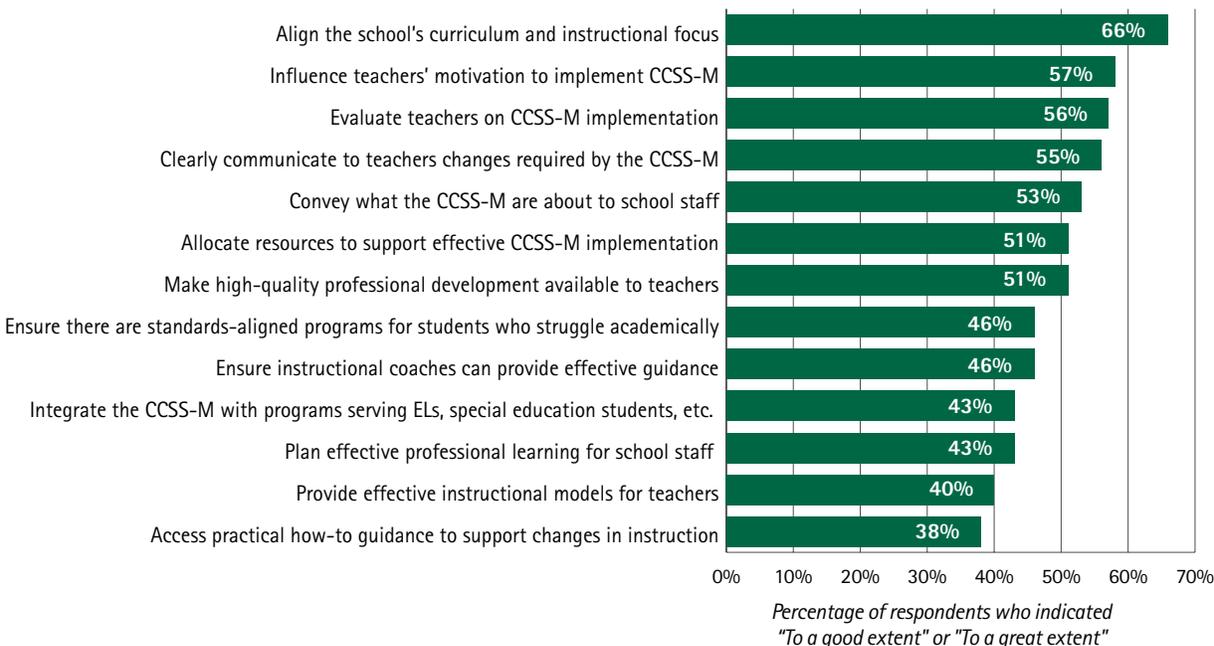
Principals' Preparation for the Role of Instructional Leader

Despite the long list of responsibilities for principals and other site leaders to help their schools effectively implement the CCSS-M, principals in the Math in Common districts reported feeling well prepared overall to support CCSS-M (74% in 2015 and 82% in 2016). Principals were most confident in their preparation around big-picture work at their sites, such as *aligning the school's curriculum and instructional focus* (66% felt prepared to a good or great extent), *influencing teachers' motivation to implement the CCSS-M* (57%), and *communicating to teachers the types of changes required by the CCSS-M* (55%; see Figure 15).

Principals were less confident about their preparation to support the more specific details of classroom implementation like *accessing practical how-to guidance to support the necessary changes in instruction* (38%) or *providing effective instructional models for teachers*

to support CCSS-M implementation in the classroom (40%). These two areas of principal preparation remain largely consistent across the two survey years. These data suggest that as we see districts continue to put more responsibility on principals to monitor mathematics

Figure 15. Principal Perceptions of Their Preparation and Knowledge to Support Various Aspects of CCSS-M Implementation

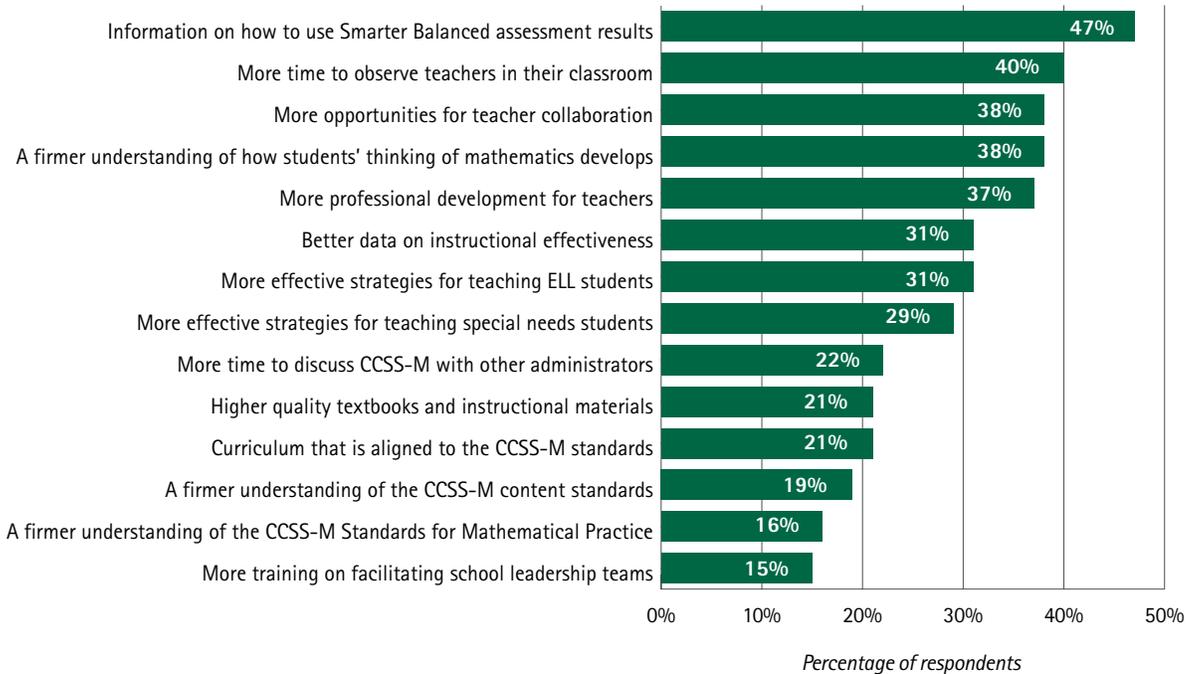


Note: Principals selected their responses from a five-point scale that ranged from "Not at all" to "To a great extent."

Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2016).



Figure 16. Supports Needed by Principals to Support CCSS-M Implementation



Note: For this survey item, administrators were given a list of the 14 statements listed in this figure and asked, "To effectively implement CCSS-M at my school, the five things I need most are...(Check the five areas that apply)."

Source: WestEd's annual survey of administrators in the 10 Math in Common districts (2016).

instruction and structure math professional development, these leaders should be offered appropriate support to enhance their understanding of CCSS-M aligned instruction and content.

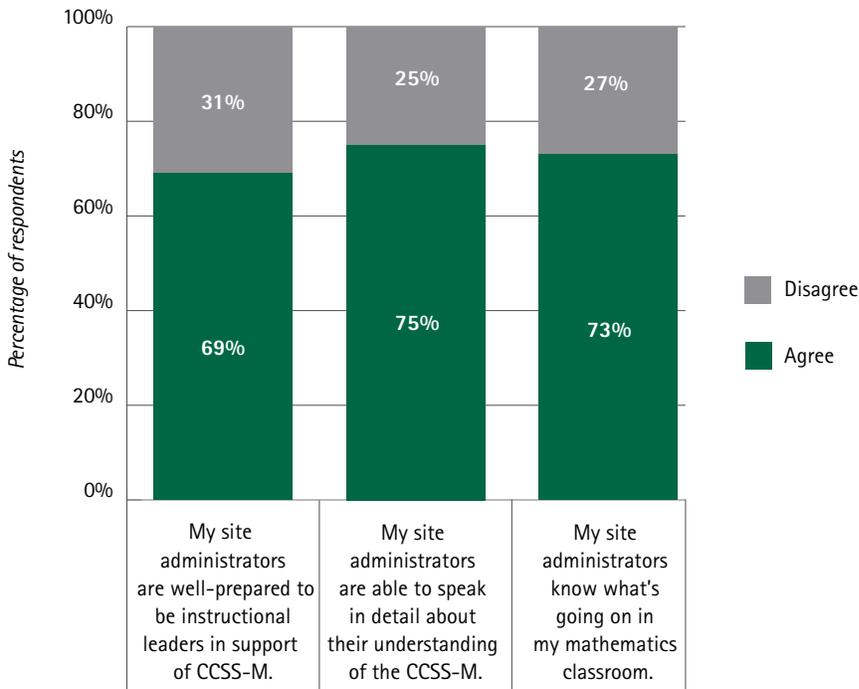
We also asked principals in 2016 to indicate the five areas of support they most need to effectively shepherd CCSS-M implementation at their schools. As shown in Figure 16, the five most frequently mentioned areas of needed support were *Information on how to use Smarter Balanced assessment results to support teaching and learning* (47%); *More time to observe teachers teaching in their classroom* (40%); *More opportunities for teacher collaboration* (38%); *A firmer understanding of how students' thinking of mathematics develops over time/grade level* (38%); and *More professional development for teachers* (37%). These results align with the strategies that many Math in Common districts are taking to

engage groups of teachers and administrative staff in discussions of assessment results, classroom instruction, and collaborative teacher learning.

Teacher confidence in principal preparation

Teachers' confidence in their principals' preparation as instructional leaders was strongly aligned with site principals' self-report of their level of preparation. Over two thirds of teachers (69%) agreed with the statement *My site administrators are well prepared to be instructional leaders in support of the CCSS-M*. Additionally, about three-quarters of teachers agreed that *My site administrators are able to speak in detail about their understanding of the CCSS-M* (75%) and *My site*

Figure 17. Teacher Confidence in Principal Preparation to Support CCSS-M Implementation



Source: WestEd's annual survey of teachers in the 10 Math in Common districts (2016).

administrators know what is going on in my mathematics classroom (73%).

Math in Common districts have made concerted efforts over the last year to support principal development, and principals' and teachers' perceptions of administrator preparation suggest that principals are rising to the occasion, as described by one administrator:

I attended the Math in Common Summer Principal Institute for the second time and have restructured my teaching staff to recruit the best I can find. I know I have a highly effective model in 6th grade and 8th grade and will keep expanding my master schedule changes for next year. We aligned our school, department, and teacher goals to our SPSA and continue to monitor actions. I have purchased the *Principles to Actions* book for all of my math teachers and have held several collaborative planning professional development sessions followed

by teacher walkthroughs to collect data and analyze for next steps.

At the same time, in interviews with WestEd, a district staff member made it clear that there is still a lot of work to be done to support principals as they step into the role of mathematics instructional leaders:

I got to do math with elementary principals who've selected into a math PLC...Principals were saying, "I can't think about this [Common Core math instruction] and I can't guide my teachers about this. It was so much easier when it was guided practice and they just got to see how to get the right answer." There are long-held assumptions out there about what it means to be good in math. If site leaders can't have that complicated, messy conversation [about what mathematics achievement looks like under CCSS-M], it'll always go back to "the way I was taught math."



What is an instructional leader?

"We had such a centralized system for years that... there was not the ownership of the instructional side of the house... I also think that some principals delegated instructional leadership to site coaches rather than leading themselves with the coach supporting the work. That is shifting, but it's heavy work to change habits.

We are engaged in an effort with [an external provider] to build the instructional leadership capacities of our principals and teacher leaders. We have launched an...initiative [in which] a lead teacher team and the principal are taught facilitating skills and asked to identify an area of instructional focus for the school. The principal and the team of teachers then use collaborative processes for the entire school to look at school goals around an instructional focus, the student learning occurring, and study strategies to change results. I'm expecting that this will help principals feel they have more autonomy and ownership around the instructional leader role. We are reading *The Principal* by Michael Fullan [2014] as a book study right now as well."

There appears to be an increasing awareness across Math in Common districts about the need to better prepare principals to more actively assume the role of instructional leader at their school sites. To address this, one Math in Common district is considering using improvement science – that is, rapid collection and review of data as described in Bryk, Gomez, Grunow, and LeMahieu (2015) – to examine and improve processes associated with districtwide principal development, supporting a more active role for principals in classrooms and in their discussions with teachers about instructional practices.

Implications of the Survey Findings

Based on responses to our surveys, principals report feeling more prepared for implementing the CCSS-M in 2016 than they were in 2015 – but confidence could be high because “you don’t know what you don’t know.” It is difficult to map out the unknown road ahead – we do not yet fully know what specific knowledge that principals and other site leaders will need to continue to implement the Common Core State Standards in mathematics (CCSS-M).

Next steps for district administrators, site leaders, and teachers

Our 2016 survey results provide data on several factors that principals and teachers must effectively balance when implementing the CCSS-M. These data suggest several implications and next steps for district administrators, site leaders, and teachers to consider in order to improve student outcomes with the CCSS-M.

Achievement and support for special student populations

- » **Monitor progress of student subgroup populations.** The 2015 data on the academic performance of English learners and disabled students, along with the information on teacher training, suggests more can be done to monitor and support the progress of these and other subgroups of students. Specifically, principals reported that they want more information about *how to use Smarter Balanced assessment results to support teaching and learning*. This is a timely request, as districts in California will have significant CAASPP resources available to them this coming summer with the release of the 2016 results and the ability to examine year-over-year progress. District interim assessment data will also be extremely valuable for understanding the progress of special student populations.
- » **Provide additional teacher training.** English learners and students with disabilities need targeted support to be successful with the CCSS-M. Accordingly,

districts must provide teachers with training on supporting these populations in order to improve student outcomes. Professional learning communities offer a fertile ground for discussions about how best to support all students, especially these subpopulations, by using appropriate instructional materials and strategies to differentiate instruction.

Instructional materials to support implementation of the Common Core State Standards in mathematics

- » **Observe classrooms with greater regularity.** Our 2016 data show there is a disconnect between teacher and principal understanding of curriculum use. By regularly observing classrooms, principals can gather more first-hand knowledge of how teachers use and supplement curricula in order to ensure equitable access to mathematics content for all students.
- » **Develop systematic measures and processes to monitor improvement.** Teachers’ reports on opportunities for observation and feedback highlight the need for districts to develop systematic measures and processes to support classroom observations and teacher feedback. For example, districts could develop processes and tools to understand whether and how the variation in use and adaptation of curriculum materials is affecting mathematics instruction and student learning. Similarly, as districts increasingly rely on PLCs to enable teachers to collaborate on strategies for effective CCSS-M implementation, it will be imperative for leadership



to more fully understand and support the type and quality of work being undertaken in these collaborative groups.

Teachers' professional learning opportunities

- » **Choose high-quality professional learning with personalized follow-up for teachers.** Teachers in many districts still spend significant time listening to expert presenters rather than participating in more interactive and personalized professional learning activities. As discussed in our report on the 2015 survey findings, we continue to wonder whether current professional development is meeting teachers' needs and helping teachers sustain shifts in practice. Districts should consider how to strategically invest their time and money in the kinds of professional learning opportunities that teachers report they want and need. We hear from teachers that principals and district leadership should continue to increase their investments in rich professional development opportunities — particularly site-based learning opportunities such as peer lesson observation and reflection, and individual coaching and lesson feedback — in order to help teachers make meaningful shifts in practice. Finally, principals should regularly observe classrooms to better understand the impact of these site-based professional learning opportunities on instructional practice.

Professional learning communities

- » **Observe teacher professional learning communities (PLCs) more frequently.** In districts where more teacher professional learning is now happening at school sites, often through PLCs, principals as instructional leaders should have the requisite knowledge and skills to observe, understand, and provide feedback concerning teachers' collaborative work. PLCs undertake a wide variety of work, from deep to shallow, and with a wide variety of goals (or lack thereof) for shifting teacher practice. In order to support teachers in maximizing the positive impact

of their work together and to create schoolwide climates of collaboration, principals will need to balance their other responsibilities with some level of involvement with their site-based PLCs.

Site administrators' preparation for the role of instructional leader

- » **Set clear and realistic expectations for principals' instructional leadership.** Across the Math in Common districts, we see a wide range of expectations placed on principals under the banner of "instructional leadership." Districts should think carefully about what aspects of instruction principals can and should be responsible for, and set these in the context of principals' many other responsibilities for managing organizational and instructional change at their sites.

California schools and districts are well past the initial awareness stage of CCSS-M implementation, and the work to further implementation efforts will likely be even more challenging, particularly for districts with less implementation support than the Math in Common districts. The survey data suggest that several aspects of CCSS-M implementation are going well — the majority of principals and teachers feel prepared and there is significant support for teacher learning. However, there is much that is still unknown about what is happening in classrooms and for different groups of students in relation to the CCSS-M. In addition, principals need more support to ensure the appropriate use of assessment data, as well as support to maximize the impact of site-based teacher professional learning.

In order to implement the CCSS-M effectively, it will be important for districts to develop systems for monitoring the focus areas that are highlighted in this report. To do this, districts should develop clear indicators that allow them to track the changes or improvements in relation to these focus areas and to understand whether these changes are helping the district effectively implement the CCSS-M and improve outcomes for all students.

Appendix A. Research Methodology and Survey Sample

Methodology

To develop the 2016 teacher and site administrator surveys, the WestEd team reviewed the 2015 surveys and reviewed the literature on CCSS-M implementation to ensure relevant constructs were assessed. In addition, we identified surveys recently conducted by others in the field (e.g., Hamilton et al., 2016) and reviewed specific subsets of survey items. The 2016 survey consisted of items tapping constructs key to gathering information on educators' understandings of the standards, central ideas, and priorities they were putting in place to implement the CCSS-M.

Once survey drafts were complete, we examined the 2015 survey results again to determine whether some items could be removed to reduce participant response burden. We asked several representatives from Math in Common partner organizations to review the surveys for content and clarity, and to make recommendations regarding survey items that might be removed. (See Appendix B for additional information about differences between the 2015 and 2016 surveys.)

As with the 2015 surveys, an important goal of the 2016 surveys was to capture both the unique and shared perspectives on CCSS-M implementation from stakeholders in different job roles. We were interested in ideas about instruction from teachers (e.g., what instructional practices they used to support CCSS-M) and ideas about leadership from principals (e.g., the steps they had taken thus far to support CCSS-M implementation in their schools and districts). We were also interested in the coherence of ideas across groups, such as whether principals and teachers agree on which instructional practices are most important to support CCSS-M. To coherently measure these ideas, we included verbatim or parallel questions across the two groups being surveyed to the extent possible. Because of low response rates in 2015 from district administrators, we eliminated the

district administrator surveys in 2016 (instead focusing only on teachers and school-site administrators).

Survey items

The overall length of both the teacher survey and the site administrator survey was reduced in 2016. Teachers were asked 21 questions (totaling 76 items, with sub-items); site administrators were asked 15 questions (totaling 78 items). In some cases, open-ended items were completely eliminated; for other questions we substituted closed-ended items for open-ended items based on information coded in the 2015 surveys.

The surveys emphasized the same topics as in 2015 (e.g., professional learning opportunities, curriculum and instruction, preparedness to enact and implement the CCSS-M, and respondent background). The surveys included Likert-scale items asking respondents to rate the extent to which they agreed or disagreed with statements about CCSS-M; forced-choice items (e.g., on instructional materials use); and open-response items asking respondents to elaborate on opinions about the CCSS-M (e.g., regarding needs for effective implementation).

Survey administration

Surveys were administered in all 10 Math in Common districts. Over the three-week administration period, non-respondents were sent two follow-up email reminders requesting their participation. Each respondent was eligible to receive a 10-dollar Starbucks gift card as a small token of appreciation for their participation. Response rates varied significantly by group and district,



Table A1. Characteristics of the Math in Common Teacher Survey Respondents

	ELEMENTARY TEACHERS	MIDDLE SCHOOL TEACHERS	MULTI-GRADE (E.G., K-8 OR K-12)
Teaching experience			
0–2 years	9%	16%	10%
3–5 years	8%	13%	6%
6–10 years	13%	17%	11%
11–20 years	39%	39%	42%
> 20 years	31%	16%	31%
School level			
Elementary	84%		
Middle	16%		

Source: WestEd’s annual survey of teachers in the 10 Math in Common districts (2016).

ranging from 11–42% across the districts for teachers and 13–44% for principals.⁶

Respondent sample

We received responses from 1,860 teachers and 156 site administrators across the 10 districts. We asked teachers several questions to understand the nature of their teaching assignment, including whether they currently had a classroom or were without a

classroom (e.g., coach or teacher on special assignment); whether their assignment was as a specialist teacher or a teacher with a self-contained classroom; what the school type was (i.e., elementary, middle, or K–8); and what specific grade levels they taught in 2014–15. The majority (84%) of our sample were elementary teachers. As Table A1 shows, the majority of responding teachers had been teaching for more than 10 years; a larger percentage of elementary teachers (31%) than middle school teachers (16%) had been teaching for more than 20 years.

⁶ Response rates could be measured only for districts that received invitations directly from WestEd (nine districts) versus receiving them directly from their own district Math in Common liaisons (one district).

Appendix B. Differences Between the 2015 and 2016 Surveys

To reduce the time needed for participants to complete the survey, several changes were made in the administrator and teacher surveys between the 2015 and 2016 administrations.

Site administrator survey

On the administrator survey, one open-ended item from the 2015 survey was changed to a closed-ended item in the 2016 survey using codes developed from the 2015 survey. To obtain additional insight on the reasons and motivations behind key actions taken by administrators, sub-items were added to the question to allow respondents to describe why they took these particular key actions. One question regarding site administrator perceptions of teacher beliefs of the importance of instructional practices was changed to inquire instead about teacher frequency of use of these instructional practices, since frequency of use is more readily observable than beliefs and, thus, likely to provide a more accurate reflection of instructional practice. For all survey items with "Agree–Disagree" scales, scales were modified or changed from 5-point to 4-point scales, eliminating the "Neither Agree nor Disagree" option as a neutral midpoint. We expected that survey respondents would know or have an opinion about the items offered, and so removing the midpoint would enable more precise data

(Dillman, Smyth, & Christian, 2014). Additionally, several items deemed to be of limited relevance to and potential for informing districts about their efforts via Math in Common were eliminated.

Teacher survey

On the teacher survey, we added sub-items to one item on whether teachers were revising their mathematics instruction to align with the CCSS–M, to allow the respondents to describe how they were revising their math instruction to align with the CCSS–M. We also added an item on the average duration of PLC meetings, as well as several other items, in order to obtain more detail on the intensity and prevalence of PLCs. As with the site administrator survey, for all survey items with "Agree–Disagree" scales, the "Agree–Disagree" scales were modified or changed from 5-point to 4-point scales to enable more precise data (Dillman et al., 2014). In addition, several items deemed less informative to districts were eliminated.



Appendix C. Teacher Survey Results

I consent to participate in this survey.

- Yes
- No [Go to the end of the survey]

Background

1. In which school district are you currently employed?
[N=1858]

- Dinuba – 3%
- Elk Grove – 10%
- Garden Grove – 15%
- Long Beach – 9%
- Oakland – 15%
- Oceanside – 8%
- Sacramento City – 13%
- San Francisco – 18%
- Sanger – 4%
- Santa Ana – 6%

2. Select the type of school in which you teach:
[N=1847]

- Elementary (e.g., K-5/ K-6) – 84%
- Middle (e.g., 6-8/ 7-8) – 12%
- Multi-grade (e.g., K-8/ K-12) – 4%

3. What grade levels do you teach? (Check all that apply.)

- TK [Go to end of survey] – 2%
- K – 17%
- 1st – 14%
- 2nd – 16%
- 3rd – 18%
- 4th – 17%
- 5th – 16%
- 6th – 12%
- 7th – 7%
- 8th – 8%

4. Are you currently teaching mathematics to students in any of grades K–8? [N=1860]

- Yes – 100%
- No [Skip pattern: Go to the end of the survey]

5. Which best describes your main teaching assignment?
[N=1846]

- Do not have a teaching assignment (i.e., full-time mathematics specialist or instructional coach) – 1%
 - Teach multiple subjects in a self-contained class – 88%
 - Teach a single subject(s) to different classes (i.e., specialist teacher) – Mark below your primary subject area(s) assignment this year. (Check all that apply.) – 11%
- Mathematics
 - English as a Second Language
 - Science
 - Special Education
 - Other (please specify)



6. How long have you...	0 (This is my first year)	1-2 years	3-5 years	6-10 years	11-15 years	16-20 years	Over 20 years
a. ... been teaching? [N=1848]	4%	5%	8%	13%	16%	22%	30%
b. ... taught in this district? [N=1810]	10%	8%	8%	12%	17%	24%	22%
c. ... taught at this school? [N=1787]	15%	12%	17%	16%	14%	15%	11%
d. ... taught at your current grade level? [N=1806]	12%	14%	23%	21%	15%	9%	6%

[Skip pattern: if a respondent indicates a "0" to 6a, then the survey does not ask question 18: "To what extent do you disagree or agree about the amount of time you spent collaborating with teachers this year as compared to prior school years on the following?"]

Professional Learning Opportunities

7. Approximately how much time did you spend in the following kinds of *district or school mathematics-related professional learning activities* during the past 12 months?

[Skip pattern: go to question 7.1 each time respondent selects any response besides "No time" for items a through e below. Otherwise go to next item]

	No time	4 hours or less	5-10 hours	11-15 hours	16 hours or more
a. Listening to a formal presentation by an "expert" presenter (e.g., on mathematics, pedagogy, supporting special student populations in mathematics, or the CCSS-M) [N=1820]	14%	28%	26%	12%	20%
b. Receiving one-on-one coaching or mentoring related to the CCSS-M [N=1814]	55%	32%	8%	3%	2%
c. Observing live classroom lessons and afterwards reflecting with colleagues on CCSS-M implementation in the classroom [N=1812]	54%	34%	8%	2%	1%
d. Participating in district-led efforts to create or select curriculum guidelines, or curriculum or assessment materials for CCSS-M implementation [N=1813]	57%	21%	10%	4%	8%
e. Participating in district-led efforts to score student performance assessments to specify/calibrate levels of student mastery of the CCSS-M [N=1815]	56%	31%	9%	2%	2%

7.1. On average, how useful was this activity for supporting your implementation of the CCSS-M?

	Not at all useful 1	Somewhat useful 2	Useful 3	Very useful 4
aa. Listening to a formal presentation by an "expert" presenter (e.g., on mathematics, pedagogy, supporting special student populations in mathematics, or the CCSS-M) [N=1543]	8%	40%	37%	15%
bb. Receiving one-on-one coaching or mentoring related to the CCSS-M [N=797]	7%	35%	37%	22%
cc. Observing live classroom lessons and afterwards reflecting with colleagues on CCSS-M implementation in the classroom [N=827]	4%	30%	37%	29%
dd. Participating in district-led efforts to create or select curriculum guidelines, or curriculum or assessment materials for CCSS-M implementation [N=769]	10%	40%	36%	15%
ee. Participating in district-led efforts to score student performance assessments to specify/calibrate levels of student mastery of the CCSS-M [N=790]	11%	44%	36%	9%

8. Thinking about all of your mathematics-related professional learning during the past 12 months, to what extent does each of the following describe your experiences?

	Not at all	To a minimal extent	To a moderate extent	To a good extent	To a great extent
a. You had opportunities to examine classroom artifacts (for example, student work samples) [N=1798]	15%	32%	26%	20%	7%
b. You worked closely with other mathematics teachers from your school [N=1799]	10%	24%	27%	24%	15%
c. You worked closely with other mathematics teachers who taught the same grade and/or subject whether or not they were from your school [N=1798]	16%	27%	25%	21%	10%
d. You had opportunities to do math tasks [N=1801]	8%	26%	29%	26%	10%

9. To what extent have your *professional learning activities* during the past 12 months provided you with the support needed to...

	Not at all	To a minimal extent	To a moderate extent	To a good extent	To a great extent
a. ...engage students in deep mathematical content [N=1761]	7%	23%	34%	27%	9%
b. ...use instructional practices that nurture students' understanding of the CCSS Standards for Mathematical Practice [N=1756]	7%	22%	34%	28%	8%
c. ...find out what students think or already know about the key mathematical ideas prior to instruction on those ideas [N=1759]	11%	29%	33%	21%	6%
d. ...formatively assess student understanding during mathematics instruction [N=1759]	10%	23%	31%	27%	9%
e. ...assess student understanding at the conclusion of instruction on a topic [N=1758]	9%	23%	31%	28%	9%
f. ... develop unit and lesson plans aligned to the CCSS-M [N=1753]	18%	26%	26%	22%	8%
g. ...differentiate and scaffold instruction so all students can increase their understanding of the targeted ideas [N=1753]	13%	29%	29%	22%	7%
h. ...deeply understand the mathematics content you need to teach to your students [N=1758]	10%	22%	28%	29%	11%
i. ...foster a growth mindset (i.e., the belief that our most basic abilities can be developed through dedication and hard work) in my students [N=1758]	9%	19%	29%	29%	13%
j. ...understand mathematical content connections across grade levels [N=1755]	13%	30%	31%	20%	6%
k. ...support students with special needs (e.g., students with disabilities, English learners) [N=1757]	20%	33%	25%	16%	6%

10. At your school is there a dedicated block of time for professional learning communities? A professional learning community, or PLC, is a group of educators that meets regularly, shares expertise, and works collaboratively to improve teaching and the academic performance of students. Your district may call PLCs by a different name. [N=1758]

Yes – 79%	No – 21%
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[If respondent answers (No) skip to question 14.]

11. On average, how frequently do you participate in professional learning communities? [N=1386]

At least every week – 45%	At least every 2 weeks – 25%	At least every month – 20%	At least every quarter – 3%	At least every trimester – 3%	At least every semester – 1%	I do not participate in any PLC – 3%
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[If respondent answers (“I do not participate in any PLC”) skip to question 14.]

12. On average, how many minutes do you spend working with other teachers in each PLC meeting? [N=1340]

15 minutes – 5%	30 minutes – 15%	45 minutes – 25%	60 minutes – 35%	More than 60 minutes – 21%
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13. Regarding CCSS-M implementation, *how engaged is your professional learning community* in each of the following activities during this school year?

	Not yet begun to address this issue	Talking – no significant action taken	Begun implementation – initial	Beyond initial implementation with support & enthusiasm growing	Deeply embedded in our culture (most staff committed)
a. Building collective knowledge regarding the CCSS-M to clarify what all students must know and be able to do at the end of each unit of instruction [N=1325]	8%	15%	36%	30%	12%
b. Working together to identify the most powerful teaching strategies and best practices that ensure student learning of the CCSS-M (e.g., deeper content, Standards for Mathematical Practice) [N=1324]	9%	15%	35%	31%	11%
c. Analyzing data from common assessments and student work to support teachers' instructional decisions [N=1324]	8%	15%	38%	29%	11%
d. Using a continuous improvement model (such as “Plan, Do, Study, Act [PDSA]”) to act on student data and increase teacher/team effectiveness [N=1325]	23%	20%	29%	20%	8%



14. How often do you typically use the following instructional practices to teach the Common Core State Standards during your mathematics lessons?

	Never	Rarely (e.g., a few times a year)	Sometimes (e.g., once or twice a month)	Often (e.g., once or twice a week)	All or almost all mathematics lessons
a. Structuring class time for students to develop procedural skill and fluency in core operations (such as multiplication tables) so they can solve more complex math problems [N=1710]	3%	9%	21%	43%	24%
b. Having students compare and contrast different methods for solving a problem [N=1712]	1%	5%	21%	43%	30%
c. Listening/asking questions as students work to gauge student understanding [N=1699]	1%	2%	8%	31%	58%
d. Having students consider multiple representations in solving a problem (e.g., numbers, tables, graphs, pictures) [N=1712]	1%	2%	12%	41%	44%
e. Demonstrating for students how to most efficiently get a correct answer [N=1698]	1%	4%	17%	39%	39%
f. Having students explain and justify their method for solving a problem [N=1710]	1%	2%	9%	34%	55%
g. Using rigorous problems to prompt students' engagement and thinking about the math content of a lesson [N=1709]	1%	4%	18%	44%	33%
h. Encouraging students to build on and explain each other's ideas [N=1710]	1%	5%	20%	40%	34%
i. Having students present their solution strategies to the rest of the class [N=1699]	1%	5%	18%	41%	35%
j. Summarizing mathematics lessons by referencing student work and student discussions [N=1712]	3%	8%	24%	41%	23%
k. Helping students use math language appropriately when communicating about math [N=1710]	1%	2%	10%	34%	54%

15. To what extent do you disagree or agree with each of the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
a. My site administrators are able to speak in detail about their understanding of the CCSS-M [N=1697]	6%	19%	58%	17%
b. My site administrators know what is going on in my mathematics classroom [N=1703]	7%	20%	56%	17%
c. My site administrators are well-prepared to be instructional leaders in support of the CCSS-M [N=1689]	7%	23%	53%	16%
d. My site administrators and I share similar ideas about what CCSS-aligned mathematics instruction should look like [N=1673]	5%	15%	63%	17%

Curriculum, Instruction, and Teacher Decision-Making

16. Which best describes the mathematics instructional materials students most frequently use in your class? [N=1692]

- One commercially published textbook or program most of the time – 29%
- Multiple, commercially published textbooks/programs most of the time – 9%
- Non-commercially published instructional materials most of the time – 22%
- A roughly equal combination of commercially published textbooks/programs and non-commercially published instructional materials – 40%

17. To what extent do you disagree or agree with each of the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
a. I am revising my math instruction to align with the CCSS-M [N=1682] <i>[If respondent answers ("Agree" or "Strongly Agree"), create a text box with the following question "In the space below, briefly describe how you are revising your math instruction to align with the CCSS-M."]</i>	2%	10%	57%	31%
b. I have a solid understanding of the scope and sequence for my school's mathematics curriculum at my grade level [N=1679]	2%	14%	60%	24%
c. I have a solid understanding of my principal's expectations for providing access to CCSS-M instruction to diverse learners (students with disabilities, English learners, etc.) [N=1683]	4%	18%	57%	22%
d. My school provides me with the resources I need to align my instruction with the CCSS-M [N=1685]	7%	20%	56%	17%
e. Our school is revising mathematics instruction to align with the CCSS-M [N=1675]	4%	13%	61%	22%
f. Teachers at my school are trained to provide students with disabilities access to the CCSS-M [N=1678]	11%	40%	41%	7%
g. Teachers at my school are trained to provide English learners access to the CCSS-M [N=1674]	7%	27%	54%	12%

18. To what extent do you disagree or agree about the amount of time you spent collaborating with teachers this year as compared to prior school years on the following?

I have spent more time this year than in prior years collaborating with teachers on...	Strongly disagree	Disagree	Agree	Strongly agree
a. ...selecting content, topics, and skills to be taught [N=1598]	9%	33%	45%	14%
b. ...selecting instructional materials [N=1602]	9%	37%	41%	13%
c. ...selecting teaching techniques [N=1591]	7%	28%	49%	16%
d. ...selecting assessment techniques to inform my instruction [N=1597]	7%	30%	48%	15%
e. ...my own professional growth and development [N=1594]	7%	27%	48%	19%



19. During this school year how often did you participate in a post-observation conference where you received coaching or feedback on the alignment of your observed instruction with the CCSS-M? [N=1370]

- Never [go to item 20; skip 19a] – 50%
- 1–2 times [go to item 19a] – 41%
- 3–4 times [go to item 19a] – 7%
- More than 4 times [go to item 19a] – 3%

19.a. How useful was the coaching or feedback you received? [N=830]

- Not at all useful – 4%
- Somewhat useful – 35%
- Useful – 42%
- Very useful – 19%

20. To what extent do you disagree or agree with each of the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
a. I feel well prepared to support my students to achieve proficiency in the CCSS-M [N=1685]	3%	22%	61%	14%
b. I have adequate mathematics content knowledge to teach the CCSS-M [N=1683]	1%	7%	62%	30%
c. The CCSS-M is having a positive effect on my mathematics teaching [N=1668]	4%	17%	59%	20%
d. My instruction supports students' use of the Standards for Mathematical Practice [N=1670]	1%	8%	70%	21%

21. To effectively implement the CCSS in mathematics, I need support mostly in: (Check all that apply.) [N=1860]

- Gaining a firm understanding of the CCSS-M content standards – 20%
- Gaining a firm understanding of the Standards for Mathematical Practice outlined in the CCSS-M – 21%
- Gaining a firm understanding of how students' thinking of mathematics develops over time/grade level – 36%
- Aligning curriculum to the CCSS-M standards (both content and practice standards) – 30%
- Meeting the needs of all students – 58%
- Access to quality textbooks and instructional materials to teach the CCSS-M standards – 38%
- Allotting time to discuss and plan lessons with my colleagues – 48%
- Creating lesson plans that embody the CCSS-M content standards – 24%
- Creating lesson plans that embody the CCSS-M Standards for Mathematical Practice – 26%
- Monitoring student progress on mastering the CCSS-M standards – 30%
- Adapting my instruction to integrate the CCSS-M standards effectively – 24%
- Preparing students for the Smarter Balanced assessments (including interim assessments) – 40%
- Using Smarter Balanced assessment results to support my teaching and student learning – 30%
- Other, please specify: – 7%

22. Please describe the way the CCSS has changed how you will teach mathematics to your students this year.

[Add a skip pattern here, where after respondents hit "save and continue" it takes them to the "Thank you for your time" page.]

Appendix D. Site Administrator Survey Results

I consent to participate in this survey.

- Yes
- No [Go to the end of the survey]

Background

1. In which school district are you currently employed? (Select one.) [N=156]

- Dinuba – 3%
- Elk Grove – 13%
- Garden Grove – 17%
- Long Beach – 13%
- Oakland – 8%
- Oceanside – 2%
- Sacramento City – 13%
- San Francisco – 12%
- Sanger – 4%
- Santa Ana – 13%

5. How long have you ...

2. Select the type of school in which you work [N=156]

- Elementary (e.g., K-5/ K-6) – 71%
- Middle (e.g., 6-8/ 7-8) – 22%
- Multi-grade (e.g., K-8/ K-12) – 6%

3. Are you a site administrator in a school that serves students in any of grades K-8? [N=156]

- Yes – 100%
- No [Go to the end of the survey]

4. Which best describes your main assignment at your school? [N=151]

- Principal – 81%
- Assistant principal – 18%
- Other (please specify) _____ – 1%

	0 (This is my first year)	1-2 years	3-5 years	6-10 years	11-15 years	16-20 years	Over 20 years
a. ...been in this district? [N=155]	4%	3%	5%	10%	21%	28%	29%
b. ...been at this school? [N=147]	24%	22%	28%	18%	5%	1%	2%
c. ...been in your current job role? [N=146]	25%	18%	17%	18%	14%	5%	2%

[Skip pattern: if a respondent indicates a "0" to 5b, then the survey does not ask question 14: "To what extent do you disagree or agree with the following? If this is your first year at this school, please skip to (next question)."]

Professional Learning Opportunities

6. Approximately how much time did you spend in each of the following kinds of *district or school mathematics-related professional learning activities* during the past 12 months?

	No time	3 hours or less	4–10 hours	11–15 hours	16 hours or more
a. Consulting independently with other administrators [N=144]	10%	38%	26%	10%	17%
b. Consulting independently with external providers in their areas of expertise [N=145]	34%	30%	18%	6%	12%
c. Using other CCSS-M resources such as professional literature and websites [N=144]	15%	38%	30%	7%	10%
d. Visiting other schools [N=141]	25%	32%	27%	9%	7%
e. Participating in district-provided PD on the CCSS-M [N=143]	7%	22%	29%	19%	22%
f. Receiving one-on-one coaching or mentoring to change my practices to better support CCSS-M implementation [N=144]	56%	24%	15%	3%	2%
g. Reflecting with teachers on CCSS-M implementation after observing live classroom lessons [N=145]	13%	26%	29%	16%	17%
h. Participating in district-led efforts to create, revise, or select curriculum guidelines, or curriculum or assessment materials for CCSS-M implementation [N=145]	48%	28%	13%	3%	8%
i. Participating in district-led efforts to score student performance assessments to specify/calibrate levels of student mastery of the CCSS-M [N=145]	52%	32%	10%	4%	2%
j. Participating in district-led efforts to systematically review SBAC data [N=144]	22%	47%	23%	3%	5%

Preparedness to Enact the Common Core State Standards in Mathematics

7. Please rate the extent to which you are *prepared* to support implementation of the CCSS-M at your school on each of the following factors.

	Not at all	To a minimal extent	To a moderate extent	To a good extent	To a great extent
Communicating the need					
a. Convey what the CCSS-M are about to your school staff [N=140]	2%	12%	32%	41%	12%
b. Convey what the CCSS-M are about to parents and the community [N=140]	3%	17%	34%	36%	10%
c. Influence teachers' motivation to implement the CCSS-M [N=137]	2%	9%	31%	46%	12%
d. Clearly communicate to teachers the types of changes required by the CCSS-M (e.g., deeper content, Standards for Mathematical Practice) [N=139]	1%	14%	28%	42%	14%
e. Prioritize CCSS-M implementation [N=139]	1%	12%	31%	42%	13%
Supporting teacher change					
f. Plan effective professional learning for school staff to facilitate CCSS-M implementation [N=140]	6%	18%	34%	34%	9%
g. Provide effective instructional models for teachers to support CCSS-M implementation in the classroom [N=140]	3%	21%	36%	34%	6%
h. Access practical "how-to" guidance to support the necessary changes in instruction [N=140]	4%	20%	39%	33%	5%
i. Make high-quality professional development available to teachers [N=139]	5%	18%	26%	34%	17%
j. Allocate resources to support effective CCSS-M implementation [N=139]	2%	15%	32%	38%	13%
k. Ensure that instructional coaches can provide effective guidance on CCSS-M implementation [N=140]	9%	13%	31%	31%	15%
Integrating practices into the organization					
l. Align the school's curriculum and instructional focus [N=140]	1%	9%	25%	45%	21%
m. Evaluate teachers on CCSS-M implementation [N=140]	1%	9%	33%	45%	12%
n. Ensure that standards-aligned programs are in place to support students who struggle academically [N=140]	1%	11%	43%	31%	15%
o. Integrate the CCSS-M with programs serving English learners, special education students, or students in other subgroups [N=140]	1%	18%	38%	33%	10%

Steps Taken by Site Administrators to Support Implementation of the CCSS-M

8. Please rate the extent to which you took the following *key actions* to support implementation of the CCSS-M at your school during the past 12 months.

[If respondent answers (“To a great extent”) to any item a through i below, create a text box with the following question, “In the space below, briefly describe why you took this key action to a great extent.”]

	Not at all	To a minimal extent	To a moderate extent	To a good extent	To a great extent
Communicating the need					
a. Made CCSS-M implementation a priority for school improvement [N=137]	2%	11%	25%	40%	22%
b. Created a leadership plan, objectives, and a timeline for CCSS-M implementation [N=136]	6%	17%	35%	32%	11%
c. Helped my parents and local community develop a clear understanding of how the CCSS-M will change teaching and learning [N=136]	7%	29%	34%	24%	6%
Supporting teacher change					
d. Convened teacher grade-level teams, professional learning communities (PLCs), or other teacher teams to support CCSS-M implementation [N=137]	4%	11%	20%	42%	23%
e. Sent school staff to professional development sessions on the CCSS-M [N=137]	7%	12%	20%	46%	16%
f. Modified our mathematics curriculum to align with the CCSS-M [N=135]	6%	13%	21%	39%	21%
g. Created short-term and long-term (3 years or longer) plans for continuous, connected, and job-embedded professional development [N=135]	13%	24%	33%	24%	6%
Integrating practices into the organization					
h. Gathered evidence (e.g., through lesson plans, walk-throughs, or classroom observations) to assess how effective teachers are at implementing the CCSS-M [N=137]	2%	12%	42%	37%	7%
i. Cultivated a cadre of teacher leaders to move CCSS-M implementation forward [N=136]	8%	17%	32%	30%	13%

9. How often do your teachers typically use the following instructional practices to teach the Common Core State Standards during their mathematics lessons?

	Never	Rarely (e.g., a few times a year)	Sometimes (e.g., once or twice a month)	Often (e.g., once or twice a week)	All or almost all mathematics lessons
a. Structuring class time for students to develop procedural skill and fluency in core operations (such as multiplication tables) so they can solve more complex math problems [N=133]	0%	6%	13%	62%	20%
b. Having students compare and contrast different methods for solving a problem [N=133]	0%	5%	17%	59%	20%
c. Listening/asking questions as students work to gauge student understanding [N=132]	0%	2%	14%	46%	38%
d. Having students consider multiple representations in solving a problem (for example: numbers, tables, graphs, pictures) [N=133]	0%	3%	18%	53%	26%
e. Having students explain and justify their method for solving a problem [N=133]	0%	2%	14%	46%	38%
f. Using rigorous problems to prompt students' engagement and thinking about the math content of a lesson [N=133]	0%	5%	23%	56%	16%
g. Encouraging students to build on and explain each other's ideas [N=132]	0%	9%	18%	52%	20%
h. Summarizing mathematics lessons by referencing student work and student discussions [N=132]	2%	6%	33%	46%	24%



Curriculum, Instruction, and Decision-Making

10. To what extent do you disagree or agree with each of the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
a. District-funded professional development opportunities develop my teachers' knowledge of the mathematics content they need to implement the CCSS-M [N=133]	5%	8%	51%	36%
b. District-funded professional development opportunities develop my teachers' knowledge of the instructional practices they need to implement the CCSS-M [N=133]	7%	5%	54%	35%
c. Our district has invested in helping teachers learn how to reliably score student work to determine alignment with the CCSS-M [N=132]	6%	26%	48%	20%
d. I feel well prepared to be an instructional leader in support of the CCSS-M [N=132]	1%	25%	62%	12%
e. I have a good understanding of what professional development my teachers need to implement the CCSS-M [N=133]	1%	17%	67%	15%
f. I have a good understanding of teachers' course content and instructional approaches necessary to evaluate their teaching [N=133]	0%	11%	74%	14%

11. Which best describes the mathematics instructional materials students most frequently use at this school? [N=127]

- One commercially published textbook or program most of the time – 43%
- Multiple, commercially published textbooks/programs most of the time – 13%
- Non-commercially published instructional materials most of the time – 15%
- A roughly equal combination of commercially published textbooks/programs and non-commercially published instructional materials – 29%

12. To what extent do you disagree or agree with each of the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
a. I have a solid understanding of the scope and sequence of our district's mathematics curriculum [N=132]	1%	21%	69%	9%
b. I regularly monitor the quality of math instruction in my school [N=133]	1%	18%	70%	11%
c. Our district has an effective system for providing feedback to my mathematics teachers about their instruction [N=129]	6%	36%	52%	5%
d. Our district provides all the resources teachers need to align their mathematics instruction with the CCSS-M [N=131]	8%	26%	53%	14%
e. Our district has an effective system for evaluating the quality of mathematics instruction [N=131]	8%	34%	51%	8%
f. Our school has the data we need to carefully monitor student progress on the CCSS-M [N=129]	4%	28%	60%	8%
g. Our district has an effective system for analyzing and using collected performance data to inform CCSS-M implementation [N=128]	5%	34%	54%	7%
h. Teachers at my school are trained to ensure that students with disabilities have access to the CCSS-M [N=132]	7%	27%	59%	7%
i. Teachers at my school are trained to ensure that English learners have access to the CCSS-M [N=132]	5%	22%	62%	11%
j. Teachers at this school and I share similar ideas about what CCSS-aligned mathematics instruction looks like [N=132]	1%	20%	73%	6%
k. Teachers at this school are able to speak in detail about their understanding of the CCSS-M [N=132]	1%	33%	60%	7%
l. I have more responsibility for my teachers' professional growth and development this year than in prior years [N=131]	2%	26%	53%	19%
m. I have adequate knowledge about mathematics content to support CCSS-M implementation [N=131]	2%	16%	69%	13%
n. The CCSS-M is having a positive effect on students' mathematics learning at my school [N=132]	2%	11%	70%	17%

13. To what extent do you disagree or agree with each of the following?

	Strongly disagree	Disagree	Agree	Strongly agree
Our district has prioritized the creation of a technology infrastructure to support...				
a. ...CCSS-M teaching and learning [N=131]	9%	29%	47%	15%
b. ...CCSS-M student assessment [N=131]	8%	15%	55%	22%



14. To what extent do you disagree or agree with each of the following?

At my school, teachers have spent more time this year than in prior years collaborating on...	Strongly disagree	Disagree	Agree	Strongly agree
a. ...selecting content, topics, and skills to be taught [N=95]	1%	21%	61%	17%
b. ...selecting instructional materials [N=95]	3%	24%	58%	15%
c. ...selecting teaching strategies [N=95]	0%	18%	65%	17%
d. ...selecting assessment techniques to inform instruction [N=95]	2%	22%	62%	14%
e. ...their own professional growth and development [N=95]	0%	12%	72%	17%

15. To effectively support implementation of the CCSS-M at my school, the five things I need most are... (Check the five areas that apply.) [N=156]

- A firmer understanding of the CCSS-M content standards – 19%
- A firmer understanding of the CCSS-M Standards for Mathematical Practice – 16%
- A firmer understanding of how students' thinking of mathematics develops over time/grade level – 38%
- Curriculum that is aligned to the CCSS-M standards (both content and practice standards) – 21%
- Higher quality textbooks and instructional materials for teaching the CCSS-M standards – 21%
- More opportunities for teacher collaboration (Pop-up: Please specify what you mean by *more opportunities for teacher collaboration*.) – 38%
- More professional development for teachers (Pop-up: Please specify what you mean by *more professional development for teachers*.) – 37%
- More time to observe teachers teaching in their classroom – 40%
- More training on facilitating school leadership teams – 15%
- More time to discuss CCSS-M with other administrators – 22%
- More effective strategies for teaching special needs students – 29%
- More effective strategies for teaching ELL students – 31%
- More information on how to use Smarter Balanced assessment results to support teaching and student learning – 47%
- Better data on instructional effectiveness – 31%
- Other, please specify: – 4%

[After respondents hit "save and continue" it takes them to the "Thank you for your time" page.]

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