



Developing Principals' Instructional Leadership in Math in Common Districts



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Introduction

One of the major systems shifts that Math in Common (MiC) districts undertook in their work to implement the Common Core State Standards for Mathematics (CCSS-M) was moving the locus of professional learning to school sites. Previously, the majority of districts' professional development for teachers and principals had occurred centrally, at large trainings planned by the district office. Because of the complexity and depth of the new standards, most districts found that these centralized trainings alone were inadequate for fully supporting teachers in making changes to their daily practice, and that professional learning needed to also happen in the context of teachers' daily practice, with teachers learning alongside their colleagues at their own school sites.

In order to facilitate this shift and support teachers at school sites, districts needed principals to take a more involved role in instructional leadership at their schools. As part of this expanded leadership role, principals — already some of the busiest people in any district system — needed to be able to:

- Understand the district's vision for instructional shifts in mathematics
- Help communicate this vision to teachers
- Prioritize mathematics improvement at their sites
- Create time and space for teachers to work and learn together in the service of the new math standards
- Spend time in classrooms to advise and support teachers on instructional shifts

- Monitor, and gather evidence to understand, the quality of CCSS-M implementation and its outcomes for students

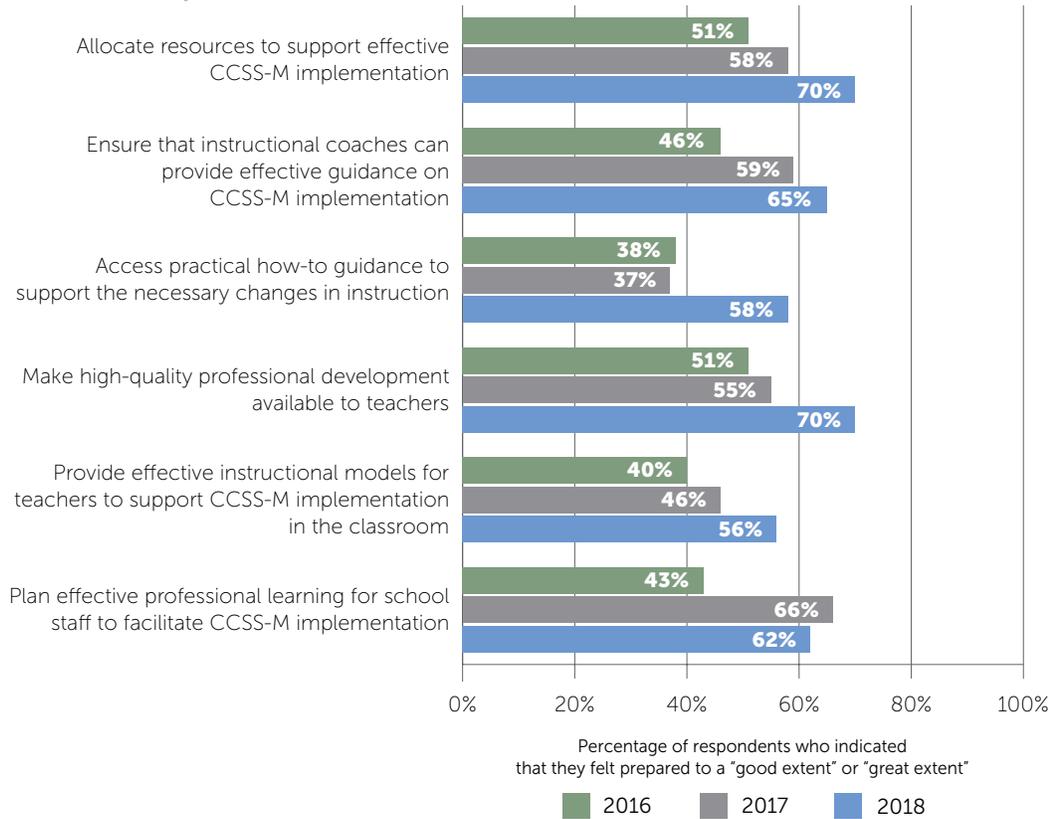
Unfortunately, this list of activities is a big ask for principals, who already balance a variety of competing demands on their time and attention every day.

In interviews, principals and district staff from MiC districts often said they felt that their districts encouraged more of a focus on literacy than on math, and that there was often no reliable structure in place to guarantee district math administrators an audience, let alone a relationship, with principals. Many principals had been out of the classroom since before the new math standards, or had never taught math at all, and thus were starting at a disadvantage in terms of understanding the content and instructional demands of the CCSS-M.

Facing these challenges head-on, MiC districts pursued the shared goal of building and supporting principals' instructional leadership in many different ways, based on their organizational contexts. At the spring 2018 Leadership Convening, in order to understand districts' varying approaches throughout the initiative, WestEd evaluation staff asked the district MiC leadership teams to chart their districts' main activities in support of principals' instructional leadership in mathematics.

For this report, we drew on the work that the leadership teams produced during the convening. We also analyzed the districts' yearly grant reports, which described work with principals; reviewed interviews with principals

Figure 1. Site Administrators' Perceptions of Their Preparation to Support Elements of CCSS-M Implementation at Their Schools



and leadership teams, conducted for various evaluation cycle reports throughout the initiative; and revisited results from our yearly teacher and administrator survey. Through this review of data, we found that most MiC districts' work with principals toward implementing the CCSS-M fit into three broad approaches, each discussed in this report:

- Empowering principals to become instructional leaders of their districts' mathematics visions
- Supporting principals to work with groups of teachers at their sites, in professional learning communities (PLCs), and through other collaborative learning structures
- Getting principals into classrooms to observe mathematics instruction, to

build the principals' understanding of standards-aligned instruction

Findings from our yearly survey of principals across the MiC districts may show the effects of districts' support for their principals on multiple aspects of CCSS-M implementation. As shown in Figure 1, principals' confidence levels related to CCSS-M implementation have risen significantly between 2016 and 2018. The survey asked principals about their sense of their own preparation to lead their school sites, in relation to six different dimensions of instructional change. In 2016, about half of the responding principals reported feeling prepared to a "good extent" or to a "great extent" in each of the six areas. By 2018, each of these percentages had increased by nearly 20 percent, with more



than half of principals reporting that they felt well prepared in each area.

Most districts in California have not benefited from the infusion of resources, ideas, and support toward mathematics standards implementation that MiC districts have received. We believe that a look at the MiC districts' approaches to supporting principals

will be valuable both for districts that are still moving toward full implementation of the CCSS-M and for districts that are looking ahead toward implementing the Next Generation Science Standards, as we expect these districts to find that they also need more site-based teacher professional development to meet the challenges of the new standards.



Empowering Principals to Lead CCSS-M Implementation and Instruction at Their Schools

“If I’m not setting an example of what I expect [regarding mathematics instruction] at the school,” a middle-school principal told us in 2017, “then it doesn’t necessarily happen.” This simple statement makes clear why, over time, principals became a main focus for MiC districts. If the districts weren’t supporting their site leaders in understanding, monitoring, and leading the process of implementing instructional shifts in mathematics at their schools, math teaching and learning could easily be overshadowed by other content areas and by the myriad of other priorities facing leaders at every school site. The following sections describe some of the approaches that MiC districts took toward helping principals take ownership of math instruction and standards implementation at their sites.

Getting time with principals to talk about mathematics

Principals are some of the busiest people in any school system (Lavigne, Shakman, Zweig, & Greller, 2016; Browne-Ferrigno & Muth, 2004). They come to their jobs with diverse expertise and experience — but not necessarily with a background in mathematics. MiC leadership teams often had to

get creative in order to secure face time with principals to help them better understand the demands of the CCSS-M, the district’s vision for implementation, and their expected role in carrying out that vision. (For more about the importance of vision and messaging to MiC improvement efforts, see Perry, Marple, & Reade [2019a and 2019b].)

One way district staff got face time with principals was through standing meetings. Almost all MiC districts had at least one type of structured, regular meeting where principals could reliably be found, and in some districts, math central office staff were already interacting with principals at these meetings.

In other districts, gaining reliable access to principals was an ongoing project for district MiC math leadership teams, with success often hinging on building collaborative relationships with superintendents or assistant superintendents who could encourage principals to focus on math and to position the MiC leadership teams as valuable partners for principals. In Santa Ana, for example, district-level mathematics coaches were spread too thinly to work directly with most principals at their individual sites. To get around this constraint, the coaches persuaded the assistant superintendent to give them time at monthly principal meetings to share modules on math instruction, for the principals to lead with their teachers; this opportunity turned into one of the districts’ most valuable connections to principals.

In another district, which experienced high leadership turnover throughout the initiative, MiC leadership team members reported that they were able to capitalize on the confusion



that resulted from a leadership change: they approached a new high-level district leader with a concrete plan for meeting monthly with principals, and the new administrator signed off on this plan immediately, grateful to have a stable and well-thought-out principal-support structure that could be implemented quickly.

Supporting principals to develop and lead site-based math visions

Just as MiC teams homed in on their districts' visions for mathematics standards implementation during multiple convening sessions over the course of the initiative, they were encouraged to also bring this district vision to school sites. Many district MiC leadership teams re-created some kind of process for crafting and refining a vision at the site level. Additionally, many district staff communicated the district's vision to principals at meetings or at professional development days for the principals. Some districts, including Elk Grove, Long Beach, and Garden Grove, spread the district's visions by investing in time for math coaches to spend at sites to help principals develop their own site-specific vision for mathematics standards implementation, to complement the district vision. The benefits of district staff interacting with principals about the districts' math visions were threefold: the process offered professional development about mathematics instruction to principals, grounded in their own day-to-day experiences; it helped create energy and excitement around math at sites that might otherwise have been dominated by a content focus on literacy alone; and it provided districts with a direct pathway to communicate messages about math instruction between sites and the central office. (See Perry, Marple, & Reade [2019a] for more about the districts' math visions.)

Principal institutes and PLC leadership

It is unlikely that most principals will ever have enough time to work intensively with every teacher at their school site on instructional shifts. However, in some California school districts, teachers are mandated to have time set aside to learn and work with one another, and sometimes with principals, each week. With careful support from the district and solid understanding of what teachers are trying to accomplish in this collaborative time, principals can leverage the collaboration to efficiently provide instructional leadership to the entire site. Helping principals access these collaborations and learn to make the most of them became an important focus of MiC's work with principals — but getting there wasn't a straightforward journey.

California Education Partners (Ed Partners), the organization that developed and facilitated the MiC initiative's community of practice, organized summer principal institutes, beginning in the 2014–15 school year. The goal of the institutes at that time was to prompt principals to commit to some form of work on implementing their districts' math visions, in cooperation with the districts' MiC leadership. The institutes provided principals in the MiC districts with two days of expert presentations about the math standards and with time to meet principals from other districts and to learn about the MiC leadership team that could support them. During the institutes, Tim Kanold, a well-known author and educational consultant who played an ongoing advisory and partner role in the initiative, presented on broad topics related to mathematics learning and leadership, especially on supporting teachers to use high-cognitive-demand tasks in their classrooms.

However, Ed Partners described that the agendas at the first institutes weren't as useful as they could have been, because they weren't closely connected to the work the MiC leadership teams were doing throughout

the year in their districts. Leads from the MiC leadership teams didn't always attend the institutes, and, in hindsight, the presentations by Dr. Kanold didn't reinforce the emerging themes of the initiative as well as they could have. Ed Partners considered dropping future institutes entirely, but instead decided to try to connect the agendas more closely to the work that the MiC leadership teams were already engaged in, and to strongly encourage team leads to attend.

Before the start of the MiC initiative, several participating districts were already invested in building their site-based teacher PLCs into drivers of instructional shifts in mathematics. Based on this existing work, Ed Partners designed the early MiC convenings — the meetings for the entire MiC community of practice — to feature Dr. Kanold's presentations on ways to strengthen math-focused PLCs, using a framework for PLC focus and improvement called High-Leverage Team Actions (HLTAs),¹ which quickly gained traction among a number of MiC districts. To build on this momentum, Ed Partners reconfigured the summer 2015 institute to focus on the HLTAs deemed highest-priority by each district's MiC leadership team.²

With MiC team leads in attendance, and with the work of the institutes more closely aligned to districts' focus areas, the summer

principal institutes became important levers for implementation efforts. The institutes gave MiC leadership teams an audience with principals, and enabled participating districts to come to a common agreement that school sites could be the crucial unit and locus of systems change (Perry, Marple, & Reade, 2019b). The reconfigured institutes offered MiC leadership teams a space to help principals think about math and math standards and to guide principals toward becoming instructional leaders for math at their sites. Some district staff and principals were able to continue the momentum from the institutes at their districts and sites, meeting throughout the year for conversations and planning informed by the summer institutes.

Most MiC districts had PLCs or similar teacher collaboration structures in place before they joined the initiative. However, these districts often used PLCs as informal work groups without a clear purpose, so that the PLCs were not well distinguishable from grade-level meetings or staff meetings. For the districts that didn't previously encourage principals to take responsibility for making PLCs powerful and productive, the HLTAs offered clear goals and purposes for PLCs, and principals in some MiC districts found in them a framework for indicators of PLC quality and a path to achieving that quality.

1 The HLTAs are 10 activities for collaborative work, based on the National Council of Teachers of Mathematics *Principles to Actions* (National Council of Teachers of Mathematics, 2014). In essence, the HLTAs encourage both a focus on mathematics (with activities organized around a unit of study) and a process for iterative improvement of the PLC's capacity.

2 Interestingly, this reconfiguration mirrors one of the "critical collaborations" discussed elsewhere in this report series: districts working more closely with technical assistance providers to get customized service (Perry, Marple, & Reade, 2019a).



Supporting Principals in Observing Math Instruction

As school districts increasingly ask principals to serve as instructional leaders, tension can emerge around their roles and how those roles are perceived by teachers at their schools. Principals are supervisors and managers of teachers, and their jobs necessarily have an evaluative component. Principals' observations of teachers are often part of this evaluation, especially for newer teachers, and the link between classroom observation and high-stakes decisions about tenure can lead to teachers' negative perceptions that observation is more about judgment than about professional partnership (Humphrey, Koppich, & Tiffany-Morales, 2016).

In order to provide instructional leadership, principals need to be welcome in classrooms, so that they can see how teachers are teaching the math standards. In many schools and districts, it is not typical for teachers to voluntarily open their classrooms to others. Teachers may feel especially vulnerable when they are experimenting with new instructional approaches, such as many of the instructional shifts that teachers need to incorporate to align their teaching with the CCSS-M. In such situations, principals may find challenges in accessing classrooms and providing support to their teaching staff. "They have to feel like you're coming in and

you're being an instructional leader," one principal told us. "That you're not [in] that supervisory role, that evaluative role. That's a hard one for teachers to buy into."

In relation to the new math standards, many principals find themselves in a vulnerable position. Principals who were never classroom math teachers, or who did teach math but have been out of the classroom since before the new standards were introduced, are put in the position of having to provide leadership regarding both instruction and content that they may be unfamiliar with. During a series of focus groups that we held with principals in 2017, many principals said they initially were reluctant to observe teachers and offer feedback because they didn't feel they had the content expertise to position themselves as experts who were able to provide useful support.

To help principals overcome this reluctance, MiC districts have encouraged and supported principals to first develop understanding of the standards, and to then focus observations on instructional practices and strategies, rather than on specific math content. For example, a principal who understands how a Math Talk should play out in a classroom can observe a teacher and then have a rich conversation afterward, providing useful feedback, without necessarily needing to understand how to use functions to describe quantitative relationships, or being able to plot the entire scope and sequence for every grade level. The principal can comment on components of the math practice while building his or her own confidence with the content.

“I felt like I needed to know it all,” one principal told us, of her work to support math teaching in the early years of the standards rollout. “I was hesitant to go in and give feedback as much as I should have or could have, because I didn’t know what the third-grade curriculum content should be. . . . Now, focusing on good math practices that translate across content, I’m more comfortable going in and doing what I’m asking the teachers to do — just asking them those probing questions and modeling what I want them to do with kids.”

This doesn’t mean that district math staff neglected principals’ content knowledge development. At least one district found that beginning each session of its principal professional development with math-focused instructional practices built principals’ confidence to continue to explore the mathematical content.

Classroom observation as a form of professional learning for principals

In their applications to join the MiC initiative, nine districts discussed the importance of mathematics-focused classroom observations, conducted by administrators and staff, as a part of their overall CCSS-M implementation plan. Of these, only two (Garden Grove and San Francisco) positioned the observations as professional learning for principals; the others conceptualized the observations in terms of monitoring and gathering evidence.³ (Several districts’ applications included plans for peer observation as professional learning for teachers.)

Over the course of MiC, math leaders in several districts went through similar trajectories to one another: they reported sending principals to gather evidence of instructional shifts in teacher and student actions, only to find that the resulting gathered data weren’t

reliable and couldn’t be used to better understand implementation progress. A range of issues contributed to the unreliability of the data, foremost that conducting valid and reliable observations of complex phenomena such as classroom instruction is very difficult, even for highly trained observers (Chu, Perry, Reade, & Marple, 2019). In addition, many principals had not received enough professional learning to have a detailed understanding of the new standards and how they should be implemented in the classroom, so these principals were not equipped to gather evidence of how the standards were being implemented. Districts encountered a range of additional challenges to consistent approaches to classroom observation, ranging from tools that were poorly designed, or that measured too many areas of instruction, to a lack of time or expertise to properly calibrate staff on how to use the tools to gather data.

However, in the course of muddling through the complexities of observing math instruction, district math leaders discovered that the process of calibrating observers and refining observation tools provided incredibly valuable professional learning, both for their own teams and for principals. In the process of norming the principals to the tool, district math staff worked with principals individually and in groups, visiting classrooms, thinking about what effective math instruction looks and sounds like, calibrating principals’ ratings of the instruction, and helping principals gain deeper understandings about math instruction and classroom observation.

While districts continued to use their observation tools with district staff to gather evidence of implementation, most districts realized that the observations were creating valuable opportunities for principals to learn about the standards and what they look like in practice in classrooms. By the 2016–17 school year, at least eight MiC leadership teams were using classroom observation

³ Principals may have been doing observations for their own professional learning, which were not described in district applications.



Table 1. Focus of MiC Districts' Observation Tools

District	Focus of Observation Tool
Dinuba	High-cognitive-demand tasks; structure that allows time for a public summary of the lesson
Garden Grove	Student discourse
Long Beach	District's focal math teaching practices (e.g., establishing goals for the lesson and facilitating student discourse)
Oakland	Student agency and ownership of intellectual work
Oceanside	Communicating reasoning/student discourse
Sacramento City	Academic discourse and high-cognitive-demand tasks
Sanger	Student discourse
Santa Ana	Student discourse

tools as a key part of their support for principals. While the specific elements of instruction being measured by each tool differed (see Table 1 for a list of districts' observation tool foci), all of the tools helped principals to closely observe and reflect on the dynamics of math classroom instruction – that is, the complex interplay among the teacher's instructional choices, the students'

intellectual activities, the materials in use, the types of tasks being undertaken, and the many other factors contributing to a mathematics lesson. Conducting observations with these tools also gave principals opportunities to gauge how all of these instructional elements were working together to reflect their district's math vision in classrooms.

District Profiles: Building Principals' Instructional Leadership in Math over Time

The following profiles describe the trajectories of three MiC districts with very different organizational contexts and levels of support within their systems. Each profile describes the district's main efforts toward supporting principals' math instructional leadership in the different phases of the initiative – the beginning of CCSS-M implementation (before MiC started), the early years of MiC (2013–14 through 2014–15), and the late years of MiC (2015–16 through 2016–17) – as well as the supports that each district intends to maintain after the end of the MiC initiative's funding period.

We hope that these profiles can offer other school districts concrete examples of how to support and empower principals, over time, to be mathematics instructional leaders in a variety of different organizational contexts. Several common themes emerge from the profiles: increasing principals' opportunities to observe in classrooms; clarifying, over time, what principals should focus on in their observations; and involving principals more frequently in teacher collaborative inquiry cycles (e.g., lesson study) about the dynamics of classroom instruction.

Sanger: Evolving classroom observations to support principal learning

Located outside of Fresno in the Central Valley, Sanger has 14 elementary and K–8 schools and one middle school. This size allows district staff to gather all principals together more easily than in larger districts. Before the CCSS-M, Sanger was heavily invested in the Explicit Direct Instruction model of learning, which relies on teacher lectures and demonstration to students. As one member of the district MiC leadership team told us, the district chose to do “a 180” in its approach to meeting the new standards, by supporting students to take intellectual ownership of learning and supporting teachers to serve as facilitators of that work.

Sanger came to rely on lesson study (a site-based collaborative learning structure) and PLCs as key ways for teachers to tackle this shift, by using these structures to help teachers incorporate rich math tasks into their lessons. District math staff needed principals to understand and support teachers' learning about standards-aligned instruction at their sites. Classroom observations, various regular principal meetings, and a framework for principals to lead PLCs were Sanger's most important principal supports.

Before MiC: Foundational district networks of support

Sanger began the initiative with three support structures already in place for principals. Sanger's Academic Achievement Leadership Teams gathered school administrators, curriculum support providers, and PLC



grade-level leaders to share and spread effective practices they had developed at their sites. The district's Administrator Learning Team brought all principals together with the superintendent and deputy superintendent to share information about teaching and learning goals and accomplishments in the district. A monthly administrator PLC brought all of the district's principals, vice principals, and assistant principals together to discuss instruction, including the shifts needed for implementing the CCSS-M. Sanger saw these three principal-support structures, all of which were designed to help messaging and information travel easily across levels of the district system, as crucial for the coherence and strength of the rollout of the mathematics standards.

Unlike other MiC districts whose attention to principal support grew and became more effective over time, when we asked members of Sanger's MiC leadership team to look back on the evolution of their principal-support programs, they felt that the administrator PLC was especially effective right from the beginning.

To conduct classroom observations before MiC, Sanger's principals used Achieve the Core (Core Action 2), a well-known, open-source math walkthrough observation tool released soon after the CCSS-M (Student Achievement Partners, n.d.). Principals were asked to focus on gathering data that district staff could use to understand how teacher professional development was impacting teachers' classroom instruction. One early challenge that principals had in using this observation tool had to do with their understanding of what was expected in classrooms. Although district principals had been invited to attend a range of teacher professional learning opportunities over time, and although the district's math team felt strongly that principals could boost their understanding of the classroom changes by participating in these opportunities, principals' participation was not always guaranteed and was never mandated.

Early MiC: Infusing a vision across the district

After the first year of MiC, Sanger MiC leadership team members reported to the Foundation that the MiC convenings, and particularly the team's work with Dr. Kanold, had pushed them to elucidate a clear vision for what CCSS-M implementation would look like in Sanger. This vision helped them gain clarity about the instructional and systems shifts necessitated by the new standards. After the convening sessions, the team met with principals to repeat Dr. Kanold's activities focused on developing a math vision. The team also sent principals to the first two MiC summer institutes with Dr. Kanold.

"We felt we had made progress toward our mathematics vision," the leadership team wrote of its experience, "but it truly wasn't until after the summer institute with Kanold that our administrators took control of this process themselves." As principals were taking control of the math visions at their school sites, they did so with some apparent variability. They were still being invited to attend K-8 teacher professional learning sessions on standards and instructional strategies (although not all attended) and using an electronic (iPad) observation tool, primarily for monitoring teacher instruction and gathering data on implementation. However, during a review of the classroom observation data gathered by principals, the MiC leadership team found that the data were not easily interpretable; some principals lacked a strong understanding of the CCSS-M Standards for Mathematical Practice on which the observation tool was focused, and, as a result, the data collection was not well calibrated.

Late MiC: Enacting a vision by supporting principal learning

In the early years of the initiative, the summer principal institutes helped Sanger principals attend to math achievement and to the district's vision. In later years, these institutes enabled principals to gather specific

improvement ideas and tools for improving math at their sites. For instance, Sanger's MiC leadership team reported that the summer institutes helped principals hone and assess their PLCs by using a new tool: the HLTA framework. Over the course of the initiative, the principal institutes may have helped create a trajectory for principals' math support — first by putting mathematics on their radars and helping them buy into leading instructional shifts, and then by giving them a tool to lead teams of teachers at their sites toward implementing the shifts together.

In 2016–17, Sanger refocused the goal of its iPad observation tool away from principals engaging in broad instructional monitoring, and toward focused professional learning for principals. Principals were asked to observe grade 3 and grade 7 classrooms, accompanied by a member of the MiC leadership team, who would be responsible for the observation ratings. By talking through these ratings with a math specialist, principals improved their understanding of how an individual with greater math content knowledge than their own observed in a classroom and assessed whether the classroom instruction was aligned to the CCSS-M.

In the 2016–17 school year, district leaders began shifting their PLC meetings to use lesson study, a collaborative learning structure in which teams of teachers work together to plan and try new instruction in their classrooms, observe one another, meet to debrief, and then start the cycle again, based on what they have learned. Principals were invited to attend lesson-study meetings led by district staff, with a goal of building principals' capacity to help lead and support lesson study in the future.

These two critical collaborations between principals and district math leadership (Perry, Marple, & Reade, 2019a) — classroom observations with debriefing, and lesson-study meetings — were considered high-leverage supports for principals' professional learning, as were the district's ongoing monthly principal PLC meetings.

After MiC: Institutionalizing practices

The Sanger MiC leadership team plans to expand lesson study to grades 9–12 and to continue to encourage principals to attend lesson-study meetings; to provide after-school and online math content coaching for principals; and to continue using the iPad observation tool to ground principals in the dynamics of classroom instruction.

Long Beach: Using observations to improve principal feedback to teachers

By the end of the MiC initiative, Long Beach's goal for successful instructional leadership for principals focused on supporting them to become comfortable with and adept at regularly observing classrooms at their sites and offering teachers feedback on content and instruction. The district's MiC leadership team used a variety of professional development opportunities to achieve this goal, many of which enabled principals to practice observing real classrooms and discussing their observations with others. In order to raise achievement at the district's struggling schools, coaches were deployed to the sites with the lowest California Assessment of Student Performance and Progress scores, with part of their goal being to support principals to better lead mathematics achievement at their sites.

Before MiC: Instructional coaching for principals

In 2004, Long Beach began a successful elementary math reform effort, Math Achievement Program Professional Development (MAP2D), documented in the book *The Achievable Dream: College Board Lessons on Creating Great Schools* (Caperton & Whitmire, 2012). MAP2D, which was eventually expanded to middle schools, included an element of coaching support for principals. District mathematics coaches were also deployed to school sites, according



to a tiered system based on need; their tasks included accompanying principals on classroom walkthroughs and supporting the principals with data analysis.

Early MiC: Leveraging principal supervisors and professional development routines

In 2014, Long Beach joined six other urban districts in the Principal Supervisor Initiative, funded by the Wallace Foundation (Goldring et al., 2018). The initiative's goal was to help districts redefine the roles of principal supervisors (the district administrators tasked with overseeing and supporting principals in the system) to include instructional leadership and to revamp the roles and systems of support for these supervisors. The ultimate aim of the initiative was to leverage supervisors to improve principals' efficacy and, in turn, improve teaching and learning outcomes across the districts.

Long Beach's involvement in this additional initiative may have positioned the district well to provide strong professional learning support to principals to lead and support instructional shifts. Long Beach MiC leaders reported that principal supervisors were "instrumental" in bringing math "onto the agenda" in principal meetings at all levels of the system, helping to share a common message about math instruction with all principals and to underscore the importance of prioritizing math at sites. Additionally, the district's MiC leadership team included both principal supervisors and principals, providing these roles with opportunities to work more closely together to shape the district's mathematics work according to their different perspectives on school site needs.

During the early phase of MiC, Long Beach district staff engaged in classroom observations that they called Collaborative Inquiry Visits, conducted twice per year in both English language arts and math. For these observations, schools were organized into cohorts of three or four similar schools, and

principals and teacher leaders from each cohort joined coaches and district math department staff to observe in a school. At this time, Long Beach's MiC leadership team characterized the Collaborative Inquiry Visit structure mostly as a means for principals and district staff to gather data and monitor instructional shifts; the emphasis was not on principal professional development.

In previous reform efforts, Long Beach had found value in having teachers and principals attend professional development in parallel so that both groups received a consistent, coherent message about instructional shifts. They proposed doing the same for professional development related to the CCSS-M, with these opportunities funded by both MiC grant funds and categorical funds. One strategy for this parallel professional development was to provide coaching support at school sites.

Late MiC: Principal face time at the district and school levels

By the 2016–17 school year, Long Beach had defined its immediate goal for principals' instructional leadership: principals should regularly be in classrooms observing instruction and providing detailed feedback on content and pedagogy. The MiC leadership team adapted this goal to be math-specific, and divided its work into two strategies for achieving the goal: offering professional development to build principals' capacity for instructional leadership, and maximizing the benefits of onsite coaching for principals.

To implement the first strategy, district math staff continued to try to get as much professional development time with principals at as many types of principal meetings as they could gain access to, including PLCs and monthly meetings. They also offered stand-alone math-focused trainings to principals. In 2016–17, to support site administrators in observing classrooms and giving teachers feedback, the MiC leadership team organized five classroom observation

cycles, called Administrator Training in Math, for K–8 and middle school principals and assistant principals. During these cycles, the administrators observed math lessons, practiced gathering and citing evidence of the district’s focal teaching practices, and practiced with colleagues how they would formulate teacher feedback on the observed lessons. Elementary principals watched video of one of the district’s classrooms, to look for evidence of the focal teaching practices, and then calibrated their findings with one another.

One structure for increasing the utility of coaching time at sites began in 2015–16, when principals, coaches, and teachers in the 22 elementary schools in the tier of schools receiving the most support began doing lesson study. Each lesson study focused on the group development, enactment, and review/refinement of a single lesson built around a rich task. Principals’ involvement in this work gave them intimate understanding of the instructional shifts that mathematics teachers are trying to make, and of the challenges that they encounter in the process.

After MiC

Long Beach is continuing to offer Administrator Training in Math sessions for new assistant principals and principals, and has expanded this successful training format to Administrator Training in English. Principal meetings focus on developing shared expectations of the teacher-collaboration topics and activities that should be taking place during grade-level and department meetings, and expectations for administrators to support this work. Furthermore, math coaches assigned to supported sites are also continuing to engage teacher teams in lesson study and unit study. (Unit study involves course-alike teacher teams making sense of the standards, studying the accompanying assessment, and agreeing on high-level tasks to implement in an upcoming unit of instruction.) Sample agendas and resources are made available to principals and department

heads so that sites can replicate these teacher-team activities without a math coach.

Oceanside: Protecting a mathematics vision through turbulent times

In Oceanside, some basic forms of principal support did not change much over time. Before MiC, principals took part in monthly principal meetings and instructional rounds in classrooms, and were invited to attend teacher professional development. What did change in the district during the MiC initiative was the content and character of the work, and its connection to specific instructional shifts aligned to the new standards. The district also combined its existing group learning structures with one-on-one support provided by district math staff.

In their application to join MiC, math staff from Oceanside noted that implementation of district programs was not consistent across sites unless the district communicated the necessity of the program. To counter this, they proposed that district administrators require principals to set goals for CCSS-M implementation. Additionally, many principals didn’t attend teacher professional learning and, as a result, didn’t have clear ideas of what instruction they should be monitoring.

By the end of year three of the MiC initiative, Oceanside’s MiC leadership team had focused its attention on supporting principals to better understand what it looks like when students are successfully communicating their reasoning in class. Leadership team members were also working with principals to use and revise an observation tool to monitor instructional shifts related to communicating reasoning. Based on needs identified from their observations, principals would provide feedback to teachers and offer resources to them.



Before MiC: Building on uncertain practices

In the proposal for Oceanside’s MiC grant, district staff described the walkthroughs that principals in the district conducted as checklists of instructional practices across content areas. While they felt that these walkthroughs, and the subsequent conversations between principals and teachers, were somewhat effective for instructional support, they noted that the process was not yet effective for shifting instruction toward CCSS-M–aligned practices, and that they hoped to improve in this area through MiC participation.

Additionally, in its proposal, Oceanside considered giving principals responsibility for helping PLCs become places for working to align instruction to the new standards, proposing to give principals CCSS-M–related topics and activities to pass on to PLCs.

Early MiC: Losing face time and shifting focus

District staff named three areas of work as their highest-leverage areas during the first three years of MiC: their time with principals at monthly meetings, the evolving observation tool, and a focus on student discourse as the means of anchoring all their work with principals in the dynamics of classroom instruction.

Principals attended monthly meetings together with district math staff, and MiC leaders had time at three or more of these meetings per year to discuss CCSS-M–aligned instruction with principals. Principals told us that these math discussions were the most useful parts of the monthly meetings, as they were the most grounded in the specifics of instructional leadership, covering topics such as math-focused PLCs, the Standards for Mathematical Practice, and formative assessment and rich tasks in mathematics classrooms.

Prior to 2015, principals went on at least one “learning walk” per year, during which a district specialist accompanied a small group of principals on a classroom visit to examine an area of teaching or learning (not necessarily math-focused, and not using the math observation tool). However, in the spring of 2015, principal professional learning across the district was canceled or scaled back, due to principals reporting that they were overwhelmed, and both the learning walks and the monthly meetings ended.

In 2014–15, the MiC leadership team piloted a math-focused walkthrough tool for principals, which initially centered on student discourse, formative assessment, and student collaboration. In the following school year, in response to the MiC community of practice’s sharpening focus on student discourse, Oceanside’s leadership team narrowed the focus of the tool to concentrate on student discourse. The MiC leadership team reported that the calibration of the tool was itself a very valuable form of professional development for principals, as it offered them an opportunity to dig into the specifics of instruction in a real classroom with coaches and with other principals.

Late MiC: Inquiry for improvement

By 2017, Oceanside MiC staff identified two areas of principal support as having the highest-leverage opportunities for improvement: the testing and improvement of the discourse-observation tool, and principals’ increasing participation in teacher professional learning through inquiry cycles. Both of these allowed principals access to and deeper understanding of the dynamics of classroom instruction and how these dynamics were shifting in response to the new standards.

The MiC leadership team continued to work with principals to calibrate and iteratively refine the discourse-observation tool. Monthly principal meetings resumed, but were again canceled midway through 2017.





Around three-quarters of middle-school teachers in Oceanside participated in inquiry cycles, in which a site-based cohort of teachers undertook a four- to six-week process of reviewing evidence of student learning together, identifying a specific student learning problem associated with mathematical understanding, and testing and debriefing instructional solutions. Adding principals to this process helped to ground principals' understandings of instructional shifts that teachers were grappling with, and helped principals to build their capacities to serve as instructional leaders at their sites.

After MiC: Building on success

Looking ahead during the 2017–18 school year, Oceanside MiC leadership team members said they planned to resume their sessions at the monthly principal meetings and to focus more coaching support on principals, especially around using and learning from the discourse-observation tool. They also planned to continue their principal feedback project, which uses improvement science methodology to iteratively improve the frequency and quality of principal feedback to teachers after classroom observation.



Conclusion and Recommendations

Instructional leadership for new standards, including mathematics standards, is a lot of responsibility to add to principals' already very full plates. However, the demands of the CCSS-M have prompted districts to provide professional development to teachers in settings that are much closer to their everyday classroom instruction. As more teacher learning moves to school sites, principals can be vital allies for district math staff — provided that the principals are attuned to the district's math vision and given supports to nurture that vision at their sites.

Although one recent report describes principal preparation as a “weak link in the educational human capital chain” (New Leaders, 2017), we saw MiC districts tackle principal support head-on with several different approaches. This work seemed to us to have the most traction in three broad areas:

- Empowering principals to become instructional leaders of their districts' mathematics visions
- Supporting principals to work with groups of teachers at their sites, in PLCs, and through other collaborative learning structures
- Getting principals into the classroom to observe mathematics instruction, to build the principals' understanding of standards-aligned instruction

The following sections offer a set of recommendations to district staff for each of these three areas.

Empowering principals to become instructional leaders of their districts' mathematics visions

- **Create or access spaces for routine face time with principals.** Often, the first step in creating instructional leaders for mathematics is establishing solid district–school relationships and lines of communication, so that principals are fully aware of the district central office math team's vision and plan for standards implementation and have opportunities to discuss the details of that vision.
- **Support principals to develop and lead a site math vision.** Most districts have some math coaches who work at school sites, and in some districts, some or all of these coaches are able to spend a good amount of time at each site and develop a relationship with its principal. In those cases, district math staff can consider structures to make those relationships more fruitful for both principals' mathematics professional development and the development of a detailed site plan for CCSS-M implementation. The plan should include student achievement goals, new instructional practices to put in place, and monitoring plans for both. The coach can then help to follow up and revisit the plan throughout the year.

- **Encourage principals to attend teacher professional development.** In order for principals to support their teachers in making instructional shifts, they need a solid understanding of the changes that teachers are working toward. In districts where principals are expected to attend teacher professional development alongside their teachers, principals are much better positioned to offer teachers feedback about instruction, and to understand whether and how the districts' focal mathematics instructional practices are playing out for teachers and students.

Principals' PLC leadership

- **Offer tools for principals to foster PLCs that support powerful math instruction.** Without a plan for making weekly teacher collaboration time useful, PLC structures can be underutilized. District math staff can offer principals a clear format for understanding, supporting, and monitoring the efficacy of PLCs at sites. In MiC, many districts used the HLTA framework with principals and PLCs, to help PLCs evolve as drivers of CCSS-M implementation. (Other available resources and guidelines for structuring school-site PLCs — e.g., Hord & Tobia [2012] — may be similarly useful.)

Supporting principals in observing math instruction

- **Support classroom observation as a form of professional learning for principals.** Over time, MiC districts shifted toward seeing principal classroom observations as valuable structures for principal learning. To accomplish this, district math staff introduced observation or walkthrough tools to principals, and

discussed the instructional shifts that the tool was measuring, before heading into the classroom together to use it. Debriefings after observations helped principals to better understand how the standards were playing out in real classrooms.

Policy recommendations

This report was written with district staff in mind, to offer ideas for how to re-create some of the MiC districts' successes with principals, but without the benefit of the significant funding these districts received as part of the initiative. However, this report also addresses policymakers, who have the ability to increase funding to school districts in order to build on the successful practices described in this report.

Principals have accumulated more and more job demands and roles within their schools, and now many will need to serve as instructional leaders, guiding standards implementation in multiple content areas. Without intervention, the overwhelming number of demands placed on principals may lead to an untenable situation and become a significant roadblock in California's efforts to raise student achievement.

We see many potential ways that policymakers can engage with the need for more professional development for principals, in mathematics specifically and in instructional leadership more broadly. But regardless, it's clear that these hardworking educators deserve more targeted support, and to that end, we offer a few ideas.

- **Organize principal training institutes.** The State Board of Education could release grant funds for high-quality principal training institutes focused on instructional leadership for standards implementation. Isolated training days that principals attend as individuals are unlikely to have much effect, however. Institutes like the kind that MiC



eventually settled on worked because staff from different strata of the district attended alongside principals, allowing for relationship building and for the development and deepening of shared understandings about how math implementation would progress after the meetings.

- **Incentivize districts to fund principals' professional development.** To extend the idea of principal training institutes, the state could signal to districts that they should devote more of their own professional development dollars to working with principals in an ongoing way, providing differentiated professional development for principals and other site leaders to develop an array of different leadership skills.

- **Reconceptualize site leadership.**

A bolder recommendation is to follow the lead of Texas in reconceptualizing and reorganizing site leadership into multiple roles, one of which would have responsibility over instructional leadership. It's simply unrealistic to expect a single person — one principal — to manage everything from discipline to building maintenance to budgets, while also leading complex instructional change in multiple content areas. California policymakers should consider incentivizing districts to make it a more common practice to split site leadership into multiple roles, allowing one person the time and resources to work with other site staff to develop and support a site plan for instructional improvement in each content area.

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