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Beyond Curriculum Adoption:

What District Leaders Are Saying About Using Illustrative Mathematics

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Introduction

In the United States, the promise of high-quality instructional materials (HQIMs)[1] in K–12 education is both considerable and yet to be fully realized (Bush-Mecenas et al., 2025; Polikoff, 2021). In a recent RAND report, Kaufman and colleagues (2023) found that state-level requirements to take up HQIMs are merely a "first step" (p. viii) toward more coherent instructional systems and that, nationally, states and districts have abundant room for improvement in their approach to providing clear and coherent instructional guidance for supporting all students using HQIMs. As states, districts, and foundations increasingly invest in the use and scaling of HQIMs in both mathematics and English language arts, understanding what comes after initial investment becomes increasingly pressing.[2] New implementation bright spots along with decades of implementation research offer insight into what might come next, as well as the needs, opportunities, and challenges inherent to HQIM implementation.

To contribute to the field's understanding of HQIM implementation, the study described in this paper builds on a recent report by Khanani and colleagues (2025), who compared impacts of Illustrative Mathematics (IM) implementation against the impacts of other HQIMs in 71 districts in Massachusetts. They found that the impacts varied significantly depending on *when* each district started HQIM implementation and on *how long* they had been working on implementation. The authors hypothesized that pandemic-related disruptions undermined the delivery of professional learning and availability of collaborative planning time. Their study reinforced previous findings that how, when, and where a new curriculum is implemented matters just as much as what is being implemented. Successful use of HQIMs such as IM requires sustained professional learning opportunities and other

[1] HQIMs, consisting of core curricula and publisher-developed resources designed to support teachers' use of the curricula, are designed to align with rigorous grade-level standards; address students' conceptual understanding and procedural fluency; and offer routines, lesson plans, and other resources that support teachers (Neumayer DePiper, 2025; Perry et al., 2026).

[2] This study explores the *core* mathematics curriculum in use at each site, which offers plenty of analytical complexity. However, understanding *supplemental* instructional resources and *alignment* across instructional tiers is equally pressing and should be a priority for further research on HQIMs.

consistent, supportive implementation conditions (Council of Chief State School Officers [CCSSO], 2025; Desimone, 2009; Hill et al., 2020; Hill & Papay, 2022).

Massachusetts is a fruitful place to study HQIM implementation. The compelling prior impact study is one reason why WestEd's research team focused on Massachusetts for exploring firsthand accounts of implementation to better understand the nuances of HQIM.[3] Also, the state's Department of Elementary and Secondary Education (DESE) has bet on the importance of HQIM access and implementation and provides encouraging messaging and support for local education agencies (LEAs) regarding HQIM use. As a member of the Instructional Materials and Professional Development network, a national group of states investing in HQIMs, Massachusetts is supporting districts in adopting HQIMs with the following levers:

- *reviewing and rating materials:* The CUrriculum RAtings by TEachers (CURATE) project convenes teachers to review and rate curricular materials in alignment with Massachusetts state standards.
- *offering implementation supports such as tools and professional learning opportunities:* IMPlement MA is an online course that offers guidelines for curriculum uptake, and the DESE offers various aligned professional learning opportunities focused on HQIM implementation calibration.
- *collecting and tracking data:* The DESE collects and monitors information on curricular materials in K–12 contexts.
- *funding:* HQIM implementation grants and other funding sources support districts in taking up new materials.

Given this context, the WestEd research team sought to learn from a diverse set of experienced district leaders in the state about how and why some districts are successful in their HQIM transitions and others struggle. To help make sense of what district leaders experienced on the ground, it helps to first understand the complexity of HQIM implementation processes. The research team focused specifically on districts that were implementing IM, but the insights that interviewees shared will likely resonate for the process of implementing other mathematical HQIMs as well.

[3] The research team was unable to interview all 71 districts included in Khanani and colleagues' study of HQIM impact in Massachusetts, so the study did not attempt to link district leaders' implementation ratings with the implementation and impact ratings in the state's CURATE system.

How HQIM Implementation Works

Implementation Works Across Levels of the Education System

Decades of implementation research show that district and school context, local policy communication, and educator support structures are critical elements affecting the implementation process (Berman & McLaughlin, 1974; Durlak & DuPre, 2008; Fixsen et al., 2015; Fixsen & Blase, 2020). The complexity and interdependency of the educational implementation process is difficult to overstate, and HQIM uptake necessitates coordinated, integrated actions across the levels of the school system. Scholars and practitioners working on HQIM uptake have called this the "implementation chain" (CCSSO, 2025), shown in Figure 1.

Figure 1. The Implementation Chain Ensuring Classroom-Level Change

Increasing student learning requires adults at every level of the system to adopt, integrate and sustain new practices. Each level is responsible for creating coherence for the next level.

Student
Students grow their ability to engage with meaningful, affirming, grade-level lessons every day.

Teacher
Teachers use high-quality materials and apply their training in service of their students.

School
School leaders create time for teachers to collaboratively prepare for instruction, review student progress and address students' needs.

School System
System leaders purchase high-quality materials and ensure that all educators are trained and supported to skillfully implement them.

State
State leaders set a vision, define the implementation chain and use their levers to create focus, choerence and alignment.

The CCSSO, a national organization that convenes and supports state education agency (SEA) professionals, notes that "each level is responsible for creating coherence for the next level" (2025, p. 8), highlighting a critical characteristic of what is needed for HQIM implementation. This perspective is particularly significant as federal education policy shifts more and more responsibility for guiding local educational improvement to states. HQIM implementation is a phased, interdependent, and interactive process that involves many people and processes across the education system. This act of "creating coherence" in school systems has been discussed in terms of other large policy changes such as IDEA

implementation (Russell & Bray, 2013) and statewide instructional coaching model implementation (Hannan & Russell, 2020). These and other studies have elaborated the many interdependent variables that influence the dynamics of systems change necessary for successful HQIM uptake. Given the supportive state context for HQIM in Massachusetts, this analysis focuses more on the teacher, school, and school system (LEA) parts of the implementation chain and on how those parts interact with the core instructional resource: the IM curriculum.

Implementation Works Across Time

Research has long established that educational curriculum implementation is a process rather than a switch that can simply be flipped on (Elmore & McLaughlin, 1988; Fixsen et al., 2009; Kaufman et al., 2023); LEAs are constantly in varying stages of implementing any given initiative, including HQIMs. CCSSO's recent analysis (2025) of HQIM implementation proposes a process that includes five phases that unfold over 4 or more years: exploration, program installation, initial implementation, consistent implementation, and innovation and sustainability. These phases offer a helpful heuristic for thinking about and planning for the implementation process broadly. However, the duration of the stages is likely variable between contexts and curricula and can vary from school to school within a district. These factors make it difficult to clearly capture and describe the lessons learned from implementation initiatives so that others can use that knowledge to inform their own work.

Methods

With these considerations about implementation and the Massachusetts context, WestEd researchers sought to get under the hood, so to speak, of IM implementation to explore how districts were approaching processes related to system coherence, implementation fidelity, messaging, and timeline. The research team designed a qualitative cross-case study to examine mathematics curriculum implementation in grades 6–8.

The study used semistructured interviews with district administrators as the primary data collection method. Participants were district-level administrators from seven purposely selected school districts (one interviewee per district) who agreed to participate in a 30-minute interview. Administrators were identified as appropriate informants given their vantage point on curriculum policy, professional learning structures, and instructional practice across multiple schools.

Interviews were guided by a research protocol that focused on multiple components of HQIM uptake, including curriculum selection and usage, supports and structures surrounding math instruction, perceived successes and challenges in mathematics teaching and learning, and school-level implementation ratings (see Appendix A for the protocol). School-level implementation ratings were intended to capture variation in fidelity and coherence of implementation within and across districts. Specifically, administrators were asked to provide two ratings for each school in their district: one characterizing the proportion of teachers using the adopted curriculum as their core instructional resource[4] for all students (most, some, or few teachers) and a second characterizing the degree to which teachers used the curriculum as written versus supplementing it or omitting units or lessons (rarely, occasionally, or frequently).

Table 1 provides a brief description of each district's HQIM implementation timeline and average implementation ratings. (See Appendix B for more information on research methods.)

[4] For the purposes of this study, the primary mathematics curriculum adopted by the district is considered the core instructional resource. Although analyzing differences across instructional tiers is not within the scope of this study, it is an important part of the HQIM uptake story.

Table 1. District HQIM Implementation Timeline and Implementation Ratings, Spring 2025

District pseudonym	HQIM	Year of adoption for grades 6–8 (unless otherwise noted)	Average curriculum use rating	Average supplementation rating
Magnolia	Illustrative Mathematics; Amplify/Desmos	2020–21 (grades 5–8 Illustrative Mathematics) 2022–23 (grades 7–8 Amplify/Desmos)	Most (high)	Occasionally
Birch	Illustrative Mathematics	2021–22	Some	Rarely (grade 6); occasionally (grade 7); frequently (grade 8)
Willow	Illustrative Mathematics (on the Imagine Learning platform, which includes additional tools and resources)	2022–23	Most	Occasionally
Oak	Illustrative Mathematics (with increased use of online resources such as Maneuvering in the Middle in grades 7–8)	2022–23 (grades 7 and 8); 2023–24 (grade 6)	Most and few (varies by school building)	Rarely, occasionally, frequently (varies by school building)
Maple	Illustrative Mathematics	2023–24	Most	Occasionally
Catalpa	Illustrative Mathematics	2023–24	Some	Rarely
Sycamore	Illustrative Mathematics	2023–24	Most	Occasionally

As the table shows, these districts were all using IM to some degree, although their implementation timeline varied. Such variation can provide insight into concerns and

lessons learned from districts at different phases of the work. However, the sample is small, so there is potential respondent bias. Furthermore, several potential respondents in Massachusetts (and in other states that the research team reached out to) were reluctant to participate in a study during the early phases of curriculum implementation. Nonetheless, the information gathered in this study and the ways in which the findings are organized and presented are intended to be informative for HQIM efforts underway elsewhere across the state and nation.

Findings

Cross-case analysis of the district leader interviews resulted in five themes related to implementing IM as a core mathematics instructional resource. The findings presented here begin with how district leaders set a long-term instructional plan and vision, and then they turn to how leaders communicated expectations for teachers' use of the curriculum and how the leaders set up structures to monitor how the curriculum was being used. From there, the findings examine instructional supports for teachers and the role of data in sustaining and refining those supports. The findings close with exploring what district leaders encountered as implementation successfully stabilized and their attention shifted to questions of equity and refinement. Together, these themes reflect what implementation looks like as an ongoing, cyclical process. The findings section includes spotlights from the interviews to highlight the conditions, decisions, and challenges that affected districts' progress.

Setting a Long-Term Shared Vision Forms the Implementation Foundation

Understanding how and why districts choose to adopt IM matters, particularly for identifying the conditions that make those decisions stick. Across the seven districts, a recurring theme was the importance of building consensus for a shared instructional vision, one that begins by examining where current challenges lie, determining what kind of supports teachers need over time, and then planning for those supports beyond the adoption year. This communication practice has the potential to set a strong foundation for IM implementation.

Most respondents (five out of seven) endorsed the curriculum at the district level and talked about teacher involvement, voice, and review in the selection process, emphasizing the importance of including teachers' perspectives. However, one district leader noted that despite this inclusive process, many teachers still resisted or refused to use IM, suggesting that including teacher voice is a necessary but insufficient condition for successful implementation.

The following spotlights highlight how two Massachusetts districts approached laying this implementation groundwork.

Spotlight 1: "They knew that we were driving towards active collaboration and communication"

Before selecting IM for grades 6–8, the Maple school district invested heavily in developing a common vision for what math instruction should look like across grade levels. A Maple district leader described how the district first established four shared pillars of student-centered math learning: active collaboration and communication, a math growth mindset, rigorous and culturally relevant tasks, and perseverance in problem-solving. These were developed collaboratively with a preK–12 math committee. Professional learning on these pillars came before any curriculum was selected. The interviewed district leader shared that she "provided teachers with intense professional development around what active collaboration looked like and sounded like in classrooms before we brought in a high-quality instructional program." As she described it, this deliberate sequencing meant that "no matter what the program was, they knew that we were driving towards active collaboration and communication." This approach appears to have made teachers more open to adopting IM than if the district had simply handed them materials to use.

The district leadership's long-term thinking also shaped how they selected and rolled out the curriculum. Rather than mandating a program, Maple invited teachers to opt into a structured field test of two HQIMs whereby they taught lessons from each for 2 weeks before coming together in a consensus-building meeting to choose between the two. This

process ensured that "everybody was given the choice to be a participant in the choosing of the curriculum." Once IM was selected, implementation unfolded in deliberate phases: Year 1 focused on unpacking units and understanding the structure of the curriculum, Year 2 expanded use of IM to Pre-Algebra and Algebra I while also diving into assessments, and Year 3 turned attention to instructional practices and coaching. The district leader reflected that this phased approach, paired with the prework on vision, created the conditions for teachers to engage meaningfully with a program that is not "just shifting the what teachers are presenting to kids, but you're shifting the how teachers are presenting the what."

Spotlight 2: "The process wasn't as methodical in middle school"

When district leaders in Oak set out to adopt a new math curriculum for grades K–6, they approached it slowly and methodically. One leader described their yearlong process as grounded in shared learning before any curriculum was even evaluated:

> **The process for adopting curriculum resources in the K through 6 part of our district began with shared learning about the standards of practice in math, equity practices in math and effective teaching practices in math, and looking for practices that were similar across [contexts].**

From there, the team developed an instructional vision, surveyed teachers, visited schools, vetted materials, and built interest holder buy-in. That intentionality appears to have paid off. In the years since that adoption process, grade 6 teachers have been using the curriculum consistently and extensively, with the district leader noting that teachers are "holding the curriculum … just right … using it consistently and deeply and taking tangents when it makes sense because it's fun and inventive with the kids, but they come right back to it."

A contrasting implementation story emerged in grades 7 and 8, illustrating the complexity of implementing with consistency across grade bands and buildings. The adoption process for the upper grades, as the district leader described it, "wasn't as methodical." Teachers were offered the chance to choose a curriculum but did so without the same structured framework or shared vision-building. The result was that teachers largely continued doing

what they had done before, gravitating toward supplemental resources rather than the adopted curriculum. Without the foundation of a long-term plan that accounted for where teachers were starting from and what support they would need over time, implementation of IM did not take hold in the same way.

Clear, Coherent, Consistent Expectations From District Leaders Guide Teachers' Implementation Efforts

District leaders emphasized the importance of communicating expectations about the how and why of their IM implementation approach early and clearly. Without a clear implementation goal teachers are working toward, there is a risk that implementation will not occur as desired, which was reflected in the interview data. Three years after initial installation of IM in their district, one district leader reflected on the pitfall that "full fidelity was never firmly established" (Willow), while another leader (Catalpa) in their 3rd year of implementation described progress that was slower than expected.

Half the district leaders who were interviewed for this study reported initial teacher resistance, with concerns centered on autonomy, "productive struggle," and the question of whether the curriculum would meet their students' needs. Several interviewees felt their teachers would have benefited from professional learning to support deeper understanding of the rationale behind the curriculum's approach. District leaders also emphasized the importance of continuing to set and reinforce expectations for curriculum use as implementation progresses. This messaging may be particularly important for maintaining instructional coherence if a district is facing competing initiatives and staffing turnover.

Leaders described two key mechanisms for reinforcing expectations: (a) using classroom visits, which they call "learning walks," to signal that they expected to see the adopted curriculum in use and (b) relying on professional learning opportunities to keep curriculum use a regular topic of conversation. In practice, most of the districts combined these two mechanisms to better support their IM implementation. The following two spotlights help reveal how to apply these two practices in service of IM adoption. One leader cautioned that both practices were important because without such reinforcement, teachers can quietly slip back into more familiar, procedural approaches rather than sustaining central IM practices such as student discourse and collaborative problem-solving.

Spotlight 1: "We expect teachers to be in the materials"

In Magnolia, district leaders talked about setting and reinforcing clear expectations for curriculum use from the outset. A Magnolia leader noted that the expectation for teachers to use IM as their core instructional resource was made explicit at both the 5–6 and 7–8 schools and that most teachers were meeting this expectation. To further reinforce fidelity, the district adopted a structured instructional rounds process three times a year, guided by a rubric focused on high-quality mathematical content. This process gave instructional leaders (principals and coaches) a common set of "look-fors" when observing classrooms and helped surface a direct message to teachers: Using the adopted materials is how the district can be confident that students are accessing grade-level, rigorous content rather than something below grade level.

Spotlight 2: "I would ground ourselves in the standards more"

From the start of IM implementation, Maple leaders were clear with teachers about what fidelity looked like in practice. A district leader from Maple described how teachers were told by coaches that they needed to implement the curriculum "with integrity, which means doing the lesson as written," while also being given explicit permission to skip optional lessons that did not introduce any new standards. This kind of clear, specific guidance helped take some of the guesswork out of curriculum use for teachers. At the same time, the leader reflected that communicating *why* the curriculum is structured the way it is would have strengthened implementation from the beginning: "I would ground ourselves in the standards more, because I don't think teachers are completely seeing the way IM is developing these ideas." Deeper grounding in the standards and explicit attention to how IM material's coherence reflects standards progressions may have helped teachers understand

expectations and reduced the tendency for them to supplement or omit parts of the curriculum.

At the time of their interview, Maple was in its 3rd year of using IM, and its district leaders described the evolution of how they were reinforcing expectations over time. Leaders began using existing department time to build a connected, cumulative arc of professional learning across the year, building each session on the last. The Maple leader also emphasized that expectations around instructional practice are difficult to communicate at a whole-group level: "When a teacher is struggling with pacing … I only really know how to help them in a one-on-one coaching type of cycle." Maple's experience suggests an important lesson: *Communicating expectations is not a one-time event but an ongoing process* that is most effective when it reaches teachers individually and consistently over time.

Instructional Coaching Is Critical but Not Always Supported or Appreciated

Creating and sustaining durable, responsive support routines for teachers is one of the most important—and most challenging—parts of the implementation process for district leaders. Instructional coaching in particular has the strongest empirical evidence base for instructional improvement (Desimone & Pak, 2016). Research has shown that coaching has enormous potential to improve teacher and student learning (Blazar & Kraft, 2015; Kraft et al., 2018) *and* that it is highly context sensitive (Coburn & Russell, 2008; Domina et al., 2015; Hannan & Russell, 2020; Russell et al., 2020), so it can potentially support teachers in a wide variety of implementation phases and circumstances. To explain implementation variation, the interviewees most frequently cited the absence of coaching and professional learning support following the initial installation phase. The spotlights in this section illustrate two different versions of that challenge: In one district, a key coaching role was cut due to budget shifts, and in a second district, critical coaching roles existed but faced barriers that limited their impact.

Since access to coaching often depends on district resources, one of the ways that district leaders described trying to offset a lack of sustainable coaching support was by building the capacity of others in the district system to do classroom observations and provide teacher feedback. Most of the district leaders who were interviewed for the study described a common pattern of starting their district's IM use with a small group of curriculum directors or supervisors doing classroom visits and then expanding who is involved, thereby building broader knowledge of implementation over time.

Spotlight 1: "95 percent of it is now me"

Sycamore's curriculum coordinator initially had built an instructional support structure that was distributed across district sites, including building-level math coaches at each school who helped share the load of planning and delivering professional learning. When those positions were eliminated due to budget cuts at the end of the 2023–24 school year, the curriculum coordinator took on the lion's share of instructional change management. "I would say 95 percent of it is now me. I used to have a math coach at each building that would help me. I lost them last year … due to budget cuts," they reported. "Thankfully, they got teaching jobs within the district, but I don't have that position anymore. … I plan all of it. I present most of it." A district can build strong infrastructure around a curriculum coordinator and supporting coaches, but losing a piece of the system—particularly the site-based leadership that keeps implementation grounded in daily classroom life—can undermine support quality and consistency.

Spotlight 2: "Has a hard time seeing herself as an instructional leader"

In order for instructional coaching to support teaching across classrooms and schools, school leaders need to honor the role of coaching, and teachers need to accept the support. For example, Birch navigated a different version of a coaching challenge: The coaching positions existed on paper, but functional barriers limited their impact. Four years into IM adoption, the Birch interviewee described middle school teachers refusing instructional coaching and a building principal who struggled to see herself as an instructional leader. The curriculum director and superintendent were actively working to shift these dynamics. As the district leader put it, a principal who has a hard time seeing herself as an instructional leader can contribute to

nonuse of the curriculum because teachers need consistent, clear signals from leadership about curriculum implementation.

Consistently Engaging With and Supporting Teachers Over Time Is Crucial

District leaders emphasized how regular, aligned feedback for teachers was key to their implementation support. Several leaders talked about using information from their learning walks for both providing individual teacher feedback and selecting professional learning topics to cover more deeply for closer alignment with IM. The following two spotlights illustrate ways districts are using data to give teachers more timely and individualized feedback on their practice, using patterns from observations to select and focus professional learning, and empowering teachers with student performance data so they can make real-time instructional adjustments.

Spotlight 1: "Did you skip it? Did you water it down?"

Learning walks in Sycamore, which the interviewee described as "120,000 percent not evaluative," played an important role in shaping IM implementation in the district. The learning walk routine began in the district about 5 years prior to IM implementation, with only administrators conducting the walks. This routine has since expanded to include learning walks led by teachers and math coordinators. Data collected on these walks help support vertical alignment, particularly as teachers and coaches get to see what is happening in other grade levels and in other buildings. At summertime administrative retreats, principals coordinate "look-fors," which they will use to guide their learning walks, offering an opportunity to describe and reiterate their implementation expectations for the year. The data from these learning walks and the culture around them play a key role in supporting teachers' development, checking in on curriculum implementation, and bridging grade levels.

Sycamore's curriculum coordinator described using questions that had been released from the Massachusetts Comprehensive Assessment System (MCAS) as a form of data-driven professional learning, which she called a "gut check." At a professional learning session, she had teachers examine released items alongside their curriculum and ask themselves honestly whether they had covered the material, skipped it, or watered it down:

> **Do a gut check, be honest with me. Look at what's up there. Did you skip it? Did you water it down because you thought it was too hard? … We're just kind of doing a gut check on making sure that we have high expectations and that we're looking at it and we're not watering things down and we're not assuming that students don't know certain things.**

This bridging exercise also connects curriculum implementation to state assessment outcomes and asks teachers to consider coherence, supporting thoughtful teaching practices.

Spotlight 2: "The teacher is proceduralizing this"

Maple's district leader described a layered approach to data use that included tracking MCAS and student growth percentiles, using iReady diagnostics to monitor whether students were making typical growth, and collecting Achieve the Core learning walk data to track shifts in instructional practice over time. But the most distinctive element of their data use was the district's emerging focus on the administrators' role in the implementation process. Observing that teachers were occasionally proceduralizing content that the curriculum materials frame as conceptual, district leaders began a concerted effort to build administrative knowledge about supporting teachers' shift to focusing on conceptual understanding. Leaders felt this capacity building was important so that when an administrator is observing instruction and providing feedback, they are doing so with the knowledge of what the curriculum calls for teachers to be doing. With this knowledge, principals can thereby help improve implementation and the ongoing development of conceptual mathematics instruction. As the district leader put it: "The teacher is proceduralizing this, but really when you read this teacher manual, it's conceptual. So that's where we should be supporting the teacher and

understanding the conceptual piece." This points to how data from classroom observations are only as useful as the observer's ability to interpret and understand the data in the context of the curriculum's original intent.

Spotlight 3: "They know the protocol. … They know exactly what to expect"

Leaders in Willow were using student achievement data in a data-based learning cycle to guide implementation. Teachers used a common protocol to examine district dashboard data, diving into the prior year's achievement test results; considering 3- to 4-year trends; and later reviewing results for particular standards, questions, and student subgroups. After completing this data review, teachers each developed an action plan with an associated timeline to help them keep track of progress toward their goals. Principals were familiar with these action plans, and, alongside their own building-level action plans, these documents became the basis for classroom visits. After the visits, observers had collaborative "hall chats" to inform teacher action aligned with their plans.

Moving From Supporting All Teachers to Supporting All Students Is Challenging

As implementation efforts mature and develop, instructional leaders start to ask different questions about adaptations and access. Both spotlights in this section describe districts that report having made meaningful progress on IM implementation. However, in both cases, district leaders noticed that consistent curriculum use did not automatically mean that all students were accessing grade-level content. In other words, the challenge had moved from getting teachers to use IM reliably to ensuring that every student, no matter their language background, learning needs, or prior educational experiences, could meaningfully engage with the curriculum.

Spotlight 1: "We don't have language supports in math for them beyond what the teacher finagles"

A district leader from Magnolia described how examining achievement data by subgroup revealed a persistent gap for students classified as English Language Learners. The district has robust language development supports in place, but those supports were not being systematically applied across mathematics classes. The challenge was compounded by a growing population of students arriving in Massachusetts from other countries and school systems where content may have been taught in a different order or at a different pace. As the Magnolia leader described it, "We are putting kids into a class when they don't have the background knowledge to be successful, yet we don't have a structure for helping them gain that background knowledge while still exposing them to grade-level content." This kind of situation can lead to language supports in math relying on whatever individual teachers improvise on their own.

What this district leader named is a structural access gap. Individual teachers are doing what they can, but the system has not yet built the scaffolding that would make grade-level access reliable and consistent for this population. Identifying that gap is key to being able to innovate and respond to it.

Spotlight 2: "It's kind of undermining instruction and undermining the thinking that's been taking place"

Birch's district leader surfaced a different kind of access challenge: the need for alignment across instructional personnel who work with teachers. While teachers were implementing key components of IM with relative consistency, paraprofessionals who were also working with students during math class were unintentionally working against the

conceptual approach IM is built upon. The students with learning differences who most needed instructional support were having a different math experience that could be consequential for their learning. Regarding how to mitigate this issue, the interviewee described plans for the math teachers in the district to offer additional professional learning for their paraprofessionals. While this is a practical first step, it also illustrates how much this kind of alignment work can depend on individual initiative rather than system design.

Conclusion

Across these seven Massachusetts districts, a consistent picture emerges: Successful HQIM implementation is not only about selecting the right curriculum but also about building the organizational conditions that allow a curriculum to take root and deepen over time. State-level supports like CURATE in Massachusetts can help districts establish the necessary foundation for deliberate implementation processes. These state support structures can be the deciding factor for a district exploring HQIMs. One district interviewee described Massachusetts's support of HQIM uptake as a necessary condition for their district's use of IM, noting that the state's CURATE grant money for adoption was an essential resource. Districts that invested in a shared instructional vision before adoption, communicated clear and specific expectations for curriculum use, and created ongoing structures for professional learning and coaching reported more consistent implementation. At the same time, even districts with strong early momentum encountered significant challenges such as budget cuts that eliminated coaching positions, uneven implementation across grade bands or buildings, and persistent access gaps for students who are English Language Learners and students with disabilities. These findings reinforce that implementation is neither linear nor self-sustaining; it requires deliberate, layered attention at every level of the system and across every phase of the work.

For district leaders undertaking or refining their own HQIM implementation, several actionable steps might follow from this study's findings. First, resist the urge to rush past the vision-setting phase—districts such as Maple and Oak demonstrated that time spent on building shared instructional principles before curriculum selection can pay dividends in teacher buy-in and long-term fidelity. Second, treat expectation-setting as an ongoing practice rather than a one-time announcement, using learning walks, coaching cycles, and

professional learning sessions to continually reinforce what faithful implementation looks like and why it matters. Third, plan now for the sustainability of support roles such as math coaches and curriculum coordinators since the loss of even one position can destabilize an implementation effort, as Sycamore's experience illustrates. Finally, as implementation matures, shift attention from whether teachers are using the curriculum to how equitably students are experiencing it. This may become clear by examining achievement data by subgroup; auditing the consistency of supports for Multilingual Learners and students with disabilities; and ensuring that all adults in the district system, including principals and paraprofessionals, understand the instructional approach. The districts in this study show that the path from adoption to effective, equitable implementation is long, but with intentional planning and sustained commitment, it is navigable.

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Appendix A. Implementation Interview Protocol

30 minutes with administrators

Introduction

[Researcher should briefly reintroduce themself.] Thanks so much for taking time to speak with me today. I'm hoping to learn more about math curriculum usage in your district, particularly around three areas:

- How teachers in your district use the curriculum
- Supports and structures around math instruction in your district
- Successes and challenges around math instruction in your district

This interview will be confidential, so we will not share any personally identifying information. We may use quotes in reports to our funder, the Gates Foundation, but we would either use them anonymously, or we would request your permission to attribute them to you.

Do you have any questions so far?

I would also like to record this interview so that we can fully engage in the conversation now. The recording would just be used to complete our notes later. Would that be OK with you?

Questions

Curriculum Usage

1. Which curriculum, or curricula, do you use in your district for math in grades 6–8?
2. What school year did the district start using it?
3. Do you know the reasons why your district chose that curriculum?
4. What is your opinion of the curriculum? What are teachers' opinions of the curriculum?
5. What other instructional resources do teachers use as a primary resource?
    a. Do all teachers use that resource? If not, which teachers use it?

6. Broadly, how would you describe curriculum implementation across the schools in the district? [Pause for a response to the broad question and follow up with the probe.]

    a. Do you think you know enough about implementation in the school(s) to be able to rate how each school uses the curriculum?

        I. **Condition A:** The respondent **is not aware** of school-level implementation. Ask who else we might talk with to get that information and then skip Questions 7–8 and ask Questions 9–15.

        II. **Condition B:** The respondent **is aware** of school-level implementation. Ask Questions 8–15 only if there is time.

7. (If yes to Q6) We are hoping to understand curriculum implementation at each middle school, so I'm going to ask you for two ratings for each school.

    a. First, we want to understand consistency of use across a group of teachers within each school. When you think about teachers' use of the math curriculum as their primary instructional resource, would you say that at the school (a) most teachers use the curriculum as their core resource, (b) some teachers do, or (c) few teachers do (it's hit or miss)?

    b. Second, we want to understand consistency of use for each teacher: how they use the core curriculum by either supplementing it or omitting units and lessons. Would you say that, generally, teachers at the school (a) mostly use the curriculum as written and rarely supplement or omit units or lessons, (b) supplement or omit from the curriculum on occasion, or (c) supplement or omit from the core curriculum frequently?

Note: Prior to the interview, the interviewer should prepopulate the names of the middle schools in the district in the table below. The ratings are what is being sought for each school in the discussion. Once we read through the prepopulated list of schools, ask if there are any we missed and get the ratings for those.

School	Use of curriculum as primary instructional resource: a) Most teachers use the curriculum as core b) Some teachers use the curriculum as core c) Few teachers use the curriculum as core	Use of curriculum without supplementation or omission: a) Teachers mostly use the core curriculum as written, rarely or never supplementing or omitting b) Teachers supplement or omit from the curriculum on occasion c) Teachers supplement or omit from the curriculum frequently
School 1 name		
School 2 name		

8. (If this doesn't come up earlier) Does the way teachers use the curriculum match district expectations?

Supports and Structures [Only asked if there is enough time.]

9. What is the main focus of your district's math instruction this year?
10. What kinds of math professional learning do teachers receive in your district?
    a. Probe for who provides it and whether it's focused on the curriculum or general practices.
11. How often do teachers receive professional learning?
12. In what ways does the district try to understand the impact of the professional learning and how teachers are implementing the curriculum? For example, what do observations or walk-throughs look like at your district?
    a. What data are collected?
    b. How is that information used?

Successes and Challenges [Only asked if there is enough time.]

13. What do you think is going well with math teaching and learning, using your core curriculum, in your district?
    a. Probe for: Do you have a specific example that comes to mind?

14. What are some areas for improvement when it comes to math teaching and learning?
    a. Probe for: Do you have a specific example that comes to mind?
15. Do you have any other thoughts you'd like to share about math curriculum, teaching, or learning in your district?

Thanks so much for your time!

Appendix B. Additional Information About Research Methods

Data Collection

Drawing on publicly available data, the research team contacted by email all districts within the state of Massachusetts using high-quality instructional materials (HQIMs). The email asked district administrators about their willingness to participate in a mathematics curriculum study, specifically either a 30-minute interview or more intensive participation with additional teacher- and student-level data collection. The data featured in this report are from the seven district leaders who agreed to participate in the 30-minute interview. (Data from district leaders in other states will be included in future reporting.)

Data were collected via videoconferencing through individual interviews lasting approximately 30 minutes each, using a semistructured protocol developed for this study (see Appendix A). The protocol organized inquiry into three thematic domains: (a) curriculum usage, including the identity of the adopted curriculum, year of adoption, rationale for selection, and degree to which teachers used the curriculum as their primary instructional resource; (b) supports and structures surrounding math instruction, including professional learning opportunities, their frequency and focus, and district mechanisms for monitoring implementation; and (c) perceived successes and challenges in mathematics teaching and learning.

A distinctive feature of the protocol was a school-level rating task embedded within the curriculum usage section. Administrators were asked to provide two ratings for each middle school in the district: one characterizing the proportion of teachers using the adopted curriculum as their core instructional resource (most, some, or few teachers) and a second characterizing the degree to which teachers used the curriculum as written versus supplementing or omitting units and lessons (rarely, occasionally, or frequently). These ratings were solicited using a structured table prepopulated with school names prior to each interview, and they were intended to capture variation in fidelity and coherence of implementation within and across districts.

The protocol included a conditional branching procedure: When an administrator indicated insufficient familiarity with school-level implementation, the interviewer redirected to identifying appropriate additional contacts and skipped the school-level rating items. The protocol sections on supports and structures and on successes and challenges were used only when time permitted within the 30-minute interview window.

All interviews were audio-recorded with participant consent. Recordings were used to supplement in-session notes and ensure accuracy in transcription.

Data Analysis

Interview recordings were transcribed and reviewed for accuracy. Data were analyzed using a thematic analysis approach guided by the three domains of the interview protocol. Analysis occurred in multiple stages. First, each member of the research team reviewed the full data set to understand overall patterns that arose in response to the interview protocol regarding curriculum adoption history, implementation patterns, professional learning structures, and perceived strengths and challenges. Next, each researcher took one of the major themes and developed a cross-case analysis to identify convergent and divergent patterns across the six districts. In the third stage of analysis, the research team reviewed all of the cross-case analyses to raise questions about interpretation of the data in the cross-case analyses relative to the initial review of the data from the individual sites. The school-level ratings from the structured table were treated as ordinal descriptive data and used to characterize the distribution of implementation fidelity within and across districts.

Confidentiality and Ethical Considerations

The study was conducted in accordance with applicable ethical guidelines for research involving human subjects. All participants were assured of confidentiality prior to the interview. Personally identifying information was not reported; any direct quotations used in this report were anonymized.