Fundamental 4

Pandemic Learning Reveals the Value of High-Quality Instructional Materials to Educator-Family-Student Partnerships

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Acknowledgments

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Introduction

The coronavirus pandemic dramatically altered teaching and learning. For decades, scholars and practitioners have agreed that learning takes place within and as a result of the instructional core—a set of key relationships between teacher, student, and instructional materials that propel student learning day-to-day and that fuel improvement over time.[1]

This model has influenced the moves that educators, policymakers, researchers, and philanthropic organizations make to improve educational outcomes. It was originally designed to address a widespread problem in the education sector: efforts to improve educational outcomes often affect student learning only indirectly. The instructional core focuses the attention of those who seek to improve outcomes on the three points that influence learning most directly—teachers, students, and the instructional materials they use.

But as living rooms were transformed into classrooms, and the work of teaching and learning moved on-screen, it became clear that during the pandemic an additional set of actors would drive daily learning and instructional improvement: families. Our study of nine school systems across seven states and 294 interviews with families and educators during the 2020–2021 school year reveals that the pandemic fundamentally transformed the instructional core to include families as a fourth anchor.

As virtual and hybrid learning continued deep into the 2020–2021 academic year, and as families sat in on classes, coached students to sound out tricky words, and Zoomed with teachers to understand number bonds, their place in the instructional core solidified. As the instructional core expanded, the role of instructional materials transformed as well. These materials provided an essential coordinating and educative structure, assuring students consistent access to grade-level content, and guiding educators and families to deepen their understanding of learning standards, grow their capacity to support instruction, and ultimately, pool their collective knowledge of standards and students to make strategic instructional choices that worked best for their specific contexts.

This report explores the role that both families and curriculum played in this expanded core, with families serving as co-producers of instructional design and delivery, with tech-enabled and standards-aligned instructional materials providing an essential coordinating and educative structure, and with the pair facilitating improved learning experiences that better honor students' unique capabilities, needs, cultures, and communities. We describe how teachers, families, and students, guided and connected by tech-enabled and standards-aligned instruction materials, did—and did more effectively—what the three-sided instructional core previously had done: orient and organize the day-to-day work of teaching and learning, with the goal of improving both over time.

The study revealed four key lessons for sustaining the expanded core even once the crisis of the coronavirus pandemic abates.

1. Expand the required dimensions of "high-quality" instructional materials to include that they be educative for families, tech-enabled, and culturally responsive

2. Leverage high-quality instructional materials (with the added criteria of educative for families, tech-enabled, and culturally-responsive) to coordinate academic co-production among the four anchors of the expanded core

3. Sustain curriculum-based professional learning focused on the expanded core, with explicit focus on implementing high-quality instructional materials in ways that respond to student, family, and community needs

4. Create systems and structures for families, teachers, and students to design, monitor, and improve upon learning experiences

The first section of the report provides background information on the extant literature and theory informing the study, the research methodology, and analytic framework. The second section introduces the expanded core, and details its actors and functionality. The final section presents lessons learned and recommendations and implications for sustaining the expanded core beyond the pandemic, including steps school systems might take using their federal relief funds.

Background

Proponents of educational equity, professionalism of teaching, and instructional excellence have long used the construct of the instructional core to guide their understanding of the instructional process and ways to improve it. First theorized by Richard Elmore in 1997, the instructional core describes the interdependent relationship between three main components in the instructional process: teacher, student, and content.[2] According to Elmore, student learning is dependent upon these components working in tandem: as one component of the core shifts (e.g., a school adopts a new curriculum), the others must shift as well (e.g., teachers must improve their content knowledge and skill, students must increase their engagement and academic effort) for learning to improve.[3] Targeting interventions at the points of the instructional core yields the most direct impact on learning.

Elmore theorized the instructional core in reaction to a culture of American educational reform that, in his view, had grown overly complex and increasingly disconnected from the actual work of teaching and learning.[4] While policymakers debated "big ideas," teachers asked what was perceived as a "narrow and overly practical" question: "What do I teach on Monday morning?"[5]

With the instructional core as a guide, education sector leaders focused on instructional materials as a key factor driving student learning. There were dedicated efforts to improve teacher knowledge and skill by first ensuring quality instructional materials, spurring what is commonly referred to as the high-quality instructional materials and curriculum-based professional learning movement. The movement, growing directly out of Elmore's instructional core, focuses on improving teacher practice by ensuring that school systems adopt high-quality materials—characterized by having "specific learning goals," "lessons aligned to content standards, student-centered approaches to inquiry-based learning, research-based teaching strategies, teacher support materials, and embedded formative assessments to

effectively help teachers implement instructional units and courses that are integrated, coherent, and sequenced"—and implement them with fidelity, leveraging job-embedded, curriculum-aligned professional learning to improve teachers' ability and skill to do so.[6]

The focus on materials is well supported by research. Studies show that materials are one of the most effective tools for education systems to enhance student academic achievement.[7]

For example, use of a high-quality math curriculum can improve academic achievement for fourth and fifth grade students by 3.6 percentage points.[8] And instruction informed by high-quality instructional materials has at least as much of a positive impact on student learning as having a highly effective teacher.[9] What's more, curricula are often priced similarly regardless of quality, making it more feasible for school systems to make the switch to high-quality materials even with limited budgets.[10]

This last point is of particular importance given that high-quality instructional materials are far less common in communities serving low-income students and students of color.[11] Without access to these materials, teachers are left to piece together the

curriculum themselves, frequently turning to unvetted resources (e.g., from Pinterest or Google searches) to fill in the gaps.[12] It takes time to find and consolidate these unvetted materials, and they are often not aligned with state standards, leaving some students with limited access to rich, challenging, standards-aligned instruction.[13] Over time, these students can fall behind their peers, losing academic ground as a result of being deprived of grade-level content.[14]

Given their centrality to instructional improvement, particularly for marginalized students, the instructional core and the related movement in support of high-quality instructional materials and curriculum-based professional learning continue to occupy a key space in the education sphere. Professional learning providers, state departments of education, and advocacy organizations all connect their work back to the instructional core.

As the quality of instructional materials garnered increased attention, so too did the quality of teachers' professional learning. Studies on the efficacy of professional learning show that it should be, at a minimum, curriculum aligned, since this is the fastest way to make professional learning relevant for educators focused on effectively serving

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High-Quality Instructional Materials
Learning materials that have "specific learning goals," "lessons aligned to content standards, student-centered approaches to inquiry-based learning, research-based teaching strategies, teacher support materials, and embedded formative assessments to effectively help teachers implement instructional units and courses that are integrated, coherent, and sequenced."[15] High-quality instructional materials are designed to be educative, which means they should enhance users' (e.g., teachers' or family members') instructional capacity and ability to guide student learning. For instance, the materials may guide users to try new instructional approaches, deepen their content knowledge, or provide more effective scaffolds in response to student misconception. Throughout this report, any materials referred to as "high-quality" will also have been rated "Green" on EdReports, meaning they have been evaluated by a third-party and found to be sufficiently focused and coherent, rigorous, and user-friendly.

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their students.[16] There is comparatively less benefit to sessions that speak generally about instructional strategies without tying them to the actual materials teachers use in the classroom.[17] Additionally, job-embedded professional learning, that which is grounded in and aims to continually improve teachers' daily practices, yields additional benefits, providing teachers with learning opportunities that are highly relevant to their day-to-day responsibilities and that provide just-in-time feedback and support.[18] Lags in teacher preparation programs, and dramatic shifts between old and modern standards, mean most teachers expected to implement high-quality instructional materials were never exposed to them—either as a part of formal training or as K–12 students themselves.[19] All the more reason for curriculum-based professional learning which provides teachers with proactive opportunities to engage with the curriculum, internalize instructional strategies, and deepen their personal knowledge and skill in the refined instructional context.[20]

Meanwhile, as school systems reinvested in the quality of materials, teachers' ability to use them, and students' engagement in the classroom, they left one thing largely unchanged: family engagement. For about 50 years, research has shown that when families are involved with schools, students learn more, attend better schools, and are more likely to advance to post-secondary education.[21] The idea of school-family engagement dates to the early 20th century, when reformers advocated a government role in providing services for struggling students and families and that these services could be provided in the school setting.[22] Family engagement efforts have since evolved, but "the general theory of action underlying [family] partnerships," even in the 21st century, has not shifted as substantially.[23] It is still quite common to promote family involvement with schools because "schools serve students' academic needs better if they can quickly and efficiently attend to the overall health and well-being of children and their families."[24] School systems that focus on families as beneficiaries of essential services, rather than contributors of social or academic value, often stop short of engaging families around academics. With the exception of periodic parent-teacher conferences or curriculum nights, family engagement efforts too rarely go "beyond the bake sale," largely leaving families out of the instructional process.[25] Teaching, after all, is for teachers. This is starkest for low-income families and Black and Latino families, who for a number of reasons—racism, the families' own negative experiences in school or unfinished or interrupted formal schooling, the myths that families are not interested in education and are too hard to reach—are more commonly left out.

With the outbreak of COVID-19, however, a dramatic shift took place. The sudden centrality of families to day-to-day schooling has been documented in many studies of pandemic learning.[26] Overnight, teachers became dependent on families' engagement with academics. Home was school; school was home. The collision prompted a unification of previously silo-ed camps of educational focus: family engagement and instruction.

Methodology

This study builds on previous research and seeks to understand how this COVID-19 disruption altered the instructional core, focusing in particular on the role that high-quality instructional materials played in facilitating the learning process and what it might reveal about the education system moving forward.

We organized our study around five research questions:

1. How does each system level (state, district, charter management organization (CMO), school, classroom, family) support the effective use of high-quality instructional materials? How do professional learning opportunities and providers effectively support educators to deploy—and support families in deploying—high-quality instructional materials?

2. What curricular features (e.g., digital features) effectively support educators to deploy—and support families in making use of—high-quality instructional materials? How do professional learning opportunities and providers effectively support educators to deploy—and support families in making use of—high-quality instructional materials?

3. What role do high-quality instructional materials and aligned professional learning play in structuring school and in generating student engagement and learning?

What other benefits accrue to students, families, educators, schools, and school systems from the effective use of high-quality instructional materials?

4. What policies and practices ensure that high-quality instructional materials and aligned professional learning advance educational equity, particularly for Black, Latino, and low-income students?

5. What steps can schools, districts, CMOs, states, and curriculum and professional learning providers take to increase the uptake of effective policies and practices?

To answer these questions, we first conducted a systematic review of the literature related to the instructional core, high-quality instructional materials, professional learning, family engagement, and emerging research regarding the operation of schools during the coronavirus pandemic. We reviewed more than 180 peer-reviewed articles, books, and media pieces (e.g., webinars) published after 1986. We located sources through online databases, informal conversations with subject-matter experts and advisers, and relevant citations.

Using information gathered from the systematic review, we generated a preliminary model of what the instructional core might look like when families are part of the instructional process, then identified and recruited participant sites that could provide insight into the expanded core.

To be considered, sites needed to have adopted and implemented high-quality instructional materials in at least one subject. The curriculum had to be evaluated and designated high-quality by a third-party, in this case rated "Green" on EdReports

and found to be sufficiently focused and coherent, rigorous, and user-friendly. Sites also had to serve significant populations of students who have been disproportionately harmed by the pandemic, including Black and Latino students, low-income students, students with disabilities, and multilingual learners. Additionally, sample selection was conducted to ensure diversity of the following characteristics: (a) geographic location, (b) urbanicity, (c) math, science, and English language arts (ELA) curriculum, (d) grade bands, and (e) site size.

We conducted an initial round of site-specific desktop research to review available data on service provision modalities, instructional designs and delivery models, student attendance, and student outcomes. We then conducted exploratory calls with potential participant sites to introduce the research opportunity, confirm alignment with selection criteria, and ensure compliance with research requirements. Selection yielded participation from nine sites across seven states.

We partnered with site representatives to recruit a sample of individuals who could provide a full picture of the instructional core in action. We then conducted semi-structured interviews with teachers and families,[27] primary actors in the core, and other systems actors responsible for resources, systems, and structures influencing the core, including instructional staff, leaders and administrators (e.g., school principals, central office staff, instructional leaders), professional learning providers, curriculum providers, and community members. We conducted 294 interviews from February to June 2021.

Table 1 provides an overview of the sites, participants, and instructional materials in use at each site.

Table 1
Overview of Study Sites

Site/Grades Studied	Location/ Urbanicity	Site Size	High-Quality Instructional Materials Studied	Interviewees/Participants				Student Demographics							
				Teachers	Families	Leaders and Administrators	Community Leaders	% Black	% Latino	% Asian	% American Indian / Alaska Native	% Native Hawaiian / Other Pacific Islander	% Economically Disadvantaged	% Students With Disabilities	% Students With Limited English Proficiency
Clarksdale Collegiate (K–8)	Clarksdale, MS (Rural)	Small	ELA: Amplify/CKLA, Wit & Wisdom Math: Eureka Math, Zearn	10	7	3	--	92%	0%	0%	0%	0%	100%	--	--[28]
Detroit Public Schools Community District (K–12)	Detroit, MI (Urban)	Large	ELA: EL Education, myPerspectives Math: Eureka Math, CPM, Zearn	10	11	18	--	83%	13%	2%	<1%	<1%	85%	16%	12%[29]
Excellence Community Schools (K–8)	New York, NY and Stamford, CT (Urban)	Small	Math: Eureka Math	12	18	21	2	44%	34%	21%	<1%	0%	77%	13%	9%[30]
Hartford Public Schools (K–12)	Hartford, CT (Urban)	Medium	Math: MATHia by Carnegie Learning, Eureka Math, Zearn	17	2	15	2	35%	45%	3%	<1%	<1%	76%	8%[31]	21%[32]
Hayward Community School District (6–8)	Hayward, WI (Rural)	Small	ELA: EL Education	4	3	5	--	1%	3%	1%	25%	<1%[33]	48%	2%	<1%[34]
Richmond Public Schools (K–12)	Richmond, VA (Urban)	Medium	ELA: EL Education	2	0	16	--	55%	18%	2%	<1%	0%	52%	13%	13%[35]
Rocky Mountain Prep (K–5)	Aurora, CO and Denver, CO (Urban)	Small	ELA: EL Education, CKLA Skills (K-2)	7	7	1	--	20%	61%	3%	<1%	<1%	83%[36]	13%	52%
Stoughton Area School District (K–5)	Stoughton, WI (Rural)	Small	ELA: Wit & Wisdom Math: Bridges	5	3	5	--	3%	6%	2%	<1%	<1%	21%[37]	3%	5%[38]
New York City District 11 Blended Literacy Schools (K–8)	New York, NY (Urban)	Small	ELA: EL Education, Wonders Math: Eureka Math, Bridges, Illustrative Math	19	9	7	--	38%	43%	9%	1%	<1%	79%	22%	12%[39]

To obtain a more comprehensive view of sites and triangulate interview data, we also observed professional learning sessions, toured learning-management systems (LMSs), reviewed district websites and local media coverage, and collected and reviewed student performance, attendance, and engagement data, and sample student assignments.

To respond to the research questions, we defined and applied thematic codes to all collected data. We updated and reapplied the coding scheme as new themes emerged during data collection. In particular, we analyzed responses to understand perceptions of student learning over the course of the 2020–2021 school year, of the role of instructional materials in supporting student learning over the course of the pandemic, and of the ways in which families supported their children over the last year.

From there, we generated a set of findings highlighting the key themes and insights that were likely to provide the most benefit to the field. We concluded by comparing findings about participating sites with other publications and publicly available information to identify and explore any overlaps or inconsistencies.

The Expanded Core in Action

By-and-large, we found that students learned when high-quality instructional materials were in use and when the instructional core expanded from a three-pointed relationship to a four-pointed one, adding an additional actor and dimension: families (see Figure 1). Unlike the two-dimensional instructional core, with learning occurring as a result of the interaction of three components (teacher, student, and material) the expanded core is a three-dimensional model with learning driven by varied interactions among different sets of three—or even among all four—elements at once.

There was cross- and within-site variability among teachers' and leaders' perceptions of student learning over the course of the pandemic. But in all sites, teachers and leaders perceived that students who had access to high-quality instructional materials and who were receiving support from a family member or caregiver at home were learning about the same—and sometimes more—than they would have in a more "typical" year. One third-grade teacher from Hartford Public Schools in Connecticut, put it simply, "I feel that my students are actually doing better in math this year. The reason is parent involvement." The teacher also credited the high-quality materials she was using to support students and families: "Eureka provides letters you can send to parents at the beginning of the module to give overviews of what will be covered. There are Homework Helpers provided through Eureka. Parents know where to go when their children are struggling. I love hearing that a student's parent has helped them with something at home … that they would have otherwise done at school without their family."

Figure 1
Expansion of the Instructional Core
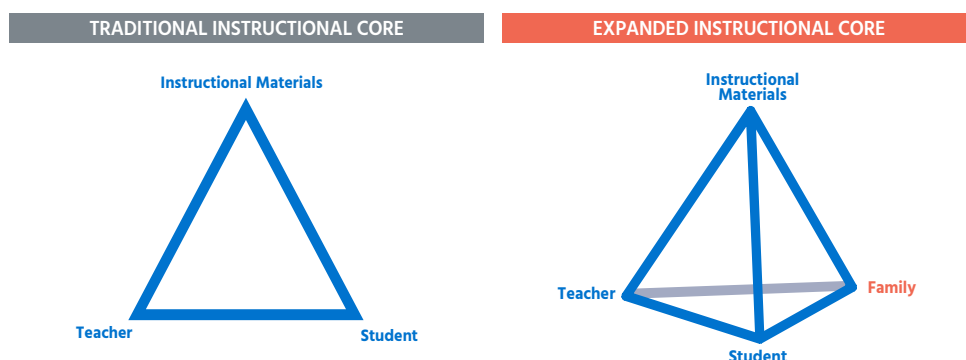
To understand student learning and growth, teachers and leaders primarily relied on data from district- and school-level interim assessments, daily exit tickets, standards-aligned digital learning platforms like Zearn, i-Ready, and Lexia, and student attendance records. For instance, one Hartford teacher relied on a district-level interim assessment to make the claim that, with families' help, her students were learning more than they had before. "We have interim assessments, and on the first one, my students weren't performing as well as I had hoped. For the second one, I got all the parents really involved, letting them know when it was happening, giving them resources for preparing for it. They were getting students set up in a quiet space … taking it seriously … Seeing how many students excelled compared with past years [and the first interim assessment] was amazing."

Families shared the perception that a four-sided core supported learning. Across sites and grade levels, in urban and rural locations, in traditional district schools and charter schools, the families we spoke to—including families whose primary language is not English—nearly unanimously reported that their children were either staying on track with their learning, or in some cases, growing this year. To make these claims, families relied on a number of sources, including their children's grades on assess-

ments (e.g., district- or school-created assessments), reading levels, direct observation of their children's participation in class, direct review of reading and writing assignments, and the extent to which their children participated in academic activities in their free time. For instance, one parent from a New York City District 11 blended literacy school described how her second grader made a "huge jump" in his reading level over the course of the pandemic. As of May, he was performing on grade level, having started the year at Level D, the end-of-kindergarten benchmark. The parent added, "I make it a point to make sure he tries to read at least 20 minutes every day."

At its strongest, the expanded core is a model of differentiated instructional co-production, one that drove pandemic-era learning. Replacing the conception of teachers as implementers of standard instructional routines, and families and students as passive recipients of instruction, this new model performs best by bringing all three actors' knowledge of student, self, curriculum, and community to bear in the process of co-designing, implementing, observing the results of, and iteratively improving each student's learning plan. When supported by tech-enabled high-quality instructional materials, the expanded core thus supports day-to-day learning, while improving it over time.

The expanded core enables the day-to-day co-production of learning

The expanded core enables day-to-day co-production of learning through the interaction among the actors, not from any one, isolated, point.[40] With the addition of families, the expanded core broadened the observational and supportive capacity available to each child, helping accelerate learning, growth, and wellbeing. From this partnership a possibility bloomed: that even in the face of sustained, widespread disruption, students could receive powerful instruction.

Tech-enabled, high-quality instructional materials made this partnership possible. These materials coordinated actors and actions and enabled collaboration across school-home boundaries to create and sustain student learning.

High-Quality Instructional Materials Coordinated Teaching and Learning Day-to-Day

High-quality instructional materials, particularly tech-enabled materials, provided a stable foundation and educative structure for grade-level instruction both at school and at home. Especially when adopted by an entire school or system, materials also assured coherence, coordinating interactions among teachers, families, and students and between classrooms, practitioners, administrators, and grade levels. These materials united teachers and families within and across systems around a set of shared aims and activities, increased teachers' and families' time and capacity for collaboration, and engaged students as owners of their learning.

High-quality instructional materials coordinated expectations

When selected with input from multiple stakeholders, implemented consistently, and accompanied by multiple levels of curriculum-based support, high-quality instructional materials had a coordinating effect on student experiences during the pandemic. Under these circumstances, the materials served as a parachute, uniting teachers around shared practices and guaranteeing students access to high expectations and grade-level content even amidst multiple and severe external shocks. Across all sites, materials set a baseline expectation for the level and substance of instructional content offered to students. Even curriculum providers like EL Education (EL), which modified unit plans to accommodate reduced instructional time and other changes to learning during the pandemic, held steadfast to the idea that pandemic or not, students should receive grade-level content and be engaged as owners of their learning.

In addition to coordinating expectations about the quality of learning that students would experience, high-quality instructional materials provided routines and practices that governed how instruction looked on a daily basis. In particular, curricula designed to include repeated unit structures, lesson openers, and discussion protocols, helped teachers, students, and families settle into a familiar pattern of day-to-day learning—teachers knew how and what to teach, students knew how to participate in class, and families knew what to expect, especially when their children requested help.

For example, in Hartford, Eureka Math's consistent lesson structure helped teachers follow a predictable schedule each day, a feature they credited for helping students stay

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Key Terms for Virtual Learning

With the transition to online learning, educators and families have explored and used dozens of tech-enabled materials, resources, and tools to support instruction.

Tech-Enabled High-Quality Instructional Materials
High-quality instructional materials that include digital features—ranging from the highly complex (e.g., interactive, adaptive, learning activities that automatically generate student performance data) to the relatively low-tech (e.g., a PDF version of a text that students download and read)—that enable learning in virtual environments.

Digital Library
An online platform or application on which students can access leveled reading resources (e.g., Epic, Raz Kids).

Learning Management System (LMS)
An online platform or application that supports design and delivery of virtual lessons or courses. Examples include Google Classroom, Schoology, and Canvas. Though these tools support curriculum delivery, they are not curricula themselves.

Online Collaboration Tools
Digital tools that provide shared workspaces to support working in groups (e.g., Google Docs, Jamboard, Whiteboard.chat).

Online Resource/Tool Suites
Resource hubs where individuals can upload materials, including lesson plans and interactive virtual activities that may or may not align with high-quality instructional materials (e.g., Desmos, Nearpod). In some cases, these are crafted by educators for use by their peers.

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on task. "My students are completely aware of their expectations every day," one teacher said. "They know they're going to have an entrance ticket, a mini lesson, and independent work … Because I have such a structured environment and they know what to expect, I feel like teaching is going well." Another Hartford teacher, also a Hartford family member, credited the regular structure for helping offset the challenges of screen time particularly for younger students. "As a mom of two young kids, having little kids be online for a long time is hard. The way I structure the day, they know what to expect. It's the same everyday."

Materials also helped coordinate expectations between teachers and family members. At Excellence Community Schools, a site based in Stamford, Connecticut and the Bronx, New York that utilizes Eureka, teachers shared Homework Helpers, brief informational sheets that helped families understand homework assignments and support their children at home. "Homework Helper is a way to engage parents in understanding what the expectations look like," an Excellence coach shared. Digital curricular features like video-recorded lessons also helped families. The same coach from Excellence shared how videos could be a helpful complement to Homework Helpers: "Those [Homework Helpers] are just paper though. With videos, the number one thing is you can replay the video as many times as you need to … So when [families] have the Homework [Helper], they can then just go and watch the video when their kids are doing the homework at night."

More broadly, across all sites, materials helped set and uphold expectations around the quality of education that students would receive. In contrast to March 2020, when many school systems were forced to quickly cobble together plans and packets, not knowing how long remote learning would last, school year 2020–2021 was marked by renewed commitment to getting the full use out of the materials, particularly in districts that had been using them for years. "Having Eureka is absolutely helpful," one Hartford leader remarked. "Regardless of the pandemic, we expect students to learn grade-level content. Eureka has allowed us to achieve that."

High-quality instructional materials coordinated time and planning

During the pandemic, high-quality instructional materials enabled teachers daily to spend time on high-impact activities like strengthening relationships with students and families, tailoring instruction, and participating in curriculum-based, peer-led, and embedded professional learning, rather than on low-impact activities like creating curricula from scratch.

For teachers, time is frequently in short supply. The onset of the pandemic has exacerbated this. Almost overnight, teachers' jobs changed dramatically.

Expected to pivot to completely new virtual teaching environments, sometimes with only a few days' notice, teachers had a lot to do and very little time to do it. When high-quality instructional materials were present, teachers had one fewer item on their plates: finding, sourcing, and piecing together curricula. With the pandemic's demands on teachers' time, having ready-to-use pacing guides, unit plans, and student-facing materials from which to build and adapt, allowed teachers to shift their attention to high-impact academic and relational activities, rather than spending that time creating materials from scratch.

For example, high-quality instructional materials afforded teachers the time to connect with families about their basic needs. More than ever, teachers were spending time conducting wellness checks, providing resources to families impacted by the pandemic and all its concomitant effects—lack of food and internet, loss of employment, social emotional distress. As a result, teachers and administrators across all sites noted a significant uptick in the amount of communication with families during the pandemic. "This year more than ever, I find myself texting or calling parents," one New York City District 11 blended literacy school teacher shared. In Detroit Public Schools Community District as well, communication with families was at an all-time high, in some instances extending into the evening. "[Before COVID], parents didn't have access to you in this manner," a Detroit teacher said. "Now they do … At

first, they'd contact me at 10 at night. A lot of the instruction came after hours. Now, I'll answer up until dinner time."

As engaging families took up increasingly more of teachers' workload, teachers cited high-quality instructional materials as one support that allowed them to save time, leaving more of it available to devote attention to families and students. "I did find myself spending less time looking up resources [this year]," said one teacher from Richmond, Virginia in year one of implementing EL, "because the curriculum is spelled out for us and everything is there."At Clarksdale Collegiate in Mississippi, one teacher who switched from self-created materials to high-quality instructional materials after Spring 2020, shared how having the materials helped her manage surging demands. "When I was trying to [teach] without Amplify I would work until school ended, go home, make dinner for my family, put my kid to bed, pull my computer back out and work four more hours," she said. But since switching she has more time for herself and for students. "It's a labor lift," she said of the high-quality instructional materials, "Someone else has already done half of the work. It takes what could be a 100-hour workweek and turns it into a 50-hour week. The value cannot be overstated." She added that the additional time also helped her meet students' non-academic needs, "Having the content so well managed [means] I can be focused on the social-emotional health of my students. It makes for a more balanced life for me."

High-quality instructional materials also played a critical role in helping teachers to provide instruction that held students' attention and supported learning.

> "Someone else has already done half of the work. It takes what could be a 100-hour workweek and turns it into a 50-hour week. The value cannot be overstated."

> I think too often educators see curricula as a straitjacket rather than a corset. You think a corset is constricting because you can't breathe, but actually it's supporting your core; it's holding you up. And you can riff within that. I'm not bound to only what's on this paper. I can adapt and adjust. But a high-quality curriculum sets a floor for the quality of your instruction. If everything goes wrong, it's right there, rather than if everything goes wrong and all I had to hold us up was something I pulled off Pinterest.
>
> – Teacher, Clarksdale Collegiate

One way it did this was again, by allowing time to be spent on really thinking about how to conduct engaging lessons virtually, rather than finding materials to use. In some instances, materials provided another time saver—doing the heavy lifting of converting content from paper to digital and sparing teachers an additional task. Among the most cited instructional challenges was sustaining student interest, motivation, and engagement on a day-to-day basis, especially virtually. Never was lecture-style instruction more of a drain on engagement and learning than when conducted through a screen. Students had ready access to any number of distractions—video games, siblings, instant messaging, the internet—and teachers, many noting lower attendance and active participation than ever before, were under increased pressure to make school something that students actually wanted to show up for and pay attention to.

The materials' protocols, questions, and sequences propelled teachers beyond what or even how to teach more effectively, and instead allowed them to focus on how to do so virtually. With high-quality instructional materials in place, planning time could be spent on internalizing and improving materials rather than creating them from scratch. Teachers focused their attention on building in additional scaffolds, weaving in opportunities for differentiation, and finding supplemental texts to build students' background knowledge and incorporate more diverse perspectives. In collaboration with other teachers and families, teachers also spent more time adapting existing materials to be more compatible with and engaging in the virtual environment and to be more tailored to students in their classrooms. Asked what teachers spent most time on this year, a Detroit school leader replied, "Adapting lessons, and trying to figure out how this is going to fit a particular group of students. The second thing would be calling parents and families and trying to get students in class." At Excellence, a teacher shared the importance of adaptation on their teaching team: "It's my responsibility to create the lesson plan and PowerPoints for the team, and then each teacher takes that lesson plan and adapts it to their own needs and students because they know their own scholars better than I do."

High-quality instructional materials coordinated learning across modalities

In the face of transitions—students moving from one family member's home to another, or alternating between in-school and remote learning days—tech-enabled high-quality instructional materials served as glue between home and school, maintaining consistency in both access and activity across modalities. Leaving a textbook in one's locker no longer meant inability to engage. Instead, students and families could access the same materials from their devices. The result was a more seamless experience overall and extended opportunities to engage in academic learning.

This coordination was disrupted when sites didn't offer consistent curricula to all students. In one site that returned to in-person learning relatively sooner than other sites in the study, the district used a different online curriculum for students who opted to continue learning virtually. When those students rejoined in-person classrooms, the transition was not seamless. In some instances, they remained on their virtual learning platforms even while sitting in the school building because of the difficulty integrating them back into the class mid-unit. By contrast, in Hartford, where students repeatedly switched modalities and teachers, having a curriculum in common helped maintain instruction. One Hartford teacher explained, "[Because] third grade teachers are doing the same thing in every class, teachers could pop in … and that consistency could be there." Remaining coordinated was useful beyond providing flexibility when students or teachers needed to quarantine or switch modalities. In fact, it offered a creative way for teachers to leverage the skills and talents of their colleagues and build crucial relationships with students. For one OpenSciEd teacher, using shared instructional materials kept her and her team in sync, so they were able to swap classrooms and pick up right where the other left off, a practice they engaged to restore some of the relationship-building and familiarity built when students were physically in the building. "Normally I'd be able to walk into their class and they'd know me by the time [they got to eighth grade]," the teacher said. "But that's not possible with all-virtual learning. We always have our lessons ahead of the weekend before we start. They will teach my lessons and I'll teach theirs so I can get to know my future students and they can say hi to their old students, which is kind of fun."

Families Co-produced Day-to-Day Instructional Design and Delivery

Equipped with high-quality instructional materials, families played a variety of roles in shaping the instructional process throughout the pandemic. When families had access to high-quality instructional materials (access that increased thanks to the digital features of materials themselves) they played a wide variety of roles—from monitoring their children's activity during school to directly supporting and co-producing academic learning—and did so in a manner that was tailored to their own capacities and their children's needs.

Families co-produced in-class learning

Across all sites, families supported children's in-class learning throughout the pandemic, commonly by monitoring their children's academic activity to ensure work was thoroughly completed and submitted on time. This took a variety of forms. Some families logged onto the child's LMS to ensure that assignments were turned in, others listened for their child's participation from another room in the home, others helped to set and monitor learning goals, and still others kept a watchful eye for distracting tabs that students might have opened during class. For example, in Detroit, one mother of a fifth-grade student vigilantly monitored her daughter's participation in school, ensuring she stayed on task and up-to-date with assignments. "I want to hear interaction," she said, "I want to see her work [on] her computer." Frequent two-way communication allowed this parent to become an even more informed and capable monitor of her daughter's work: "[T]he teacher… will email every day," she explained, "When class is over [the teacher]

lets me know everything that was done. She lets me know that 10 out of 15 students turned in an assignment. I'll ask my daughter, is your work in?"

Tech-enabled, high-quality instructional materials further supported families to serve as monitors, affording them increased access to academic content and helping them sustain their children's learning at home. Because of the materials, families knew what their children were expected to complete during school and how they were expected to participate during class. In some instances, the design of the materials themselves made families' monitoring role especially straightforward. Zearn, for instance, reduced the potential demand on families to a single click: "We wanted caregivers to know the tactical steps to get started: help their child login and show them where to press start. From there, Zearn provides instructional videos, interactive activities, and built-in math help," a Zearn representative said. This lower-lift option was a particularly helpful buoy for families who strove to support and monitor their children's learning but had limited capacity to do so. "In talking with caregivers, we often heard that families were overwhelmed by options," the same Zearn representative said. "So we wanted to provide really concrete, immediately actionable examples on how to help caregivers support their child's math learning." In this way, Zearn provides support for families whose monitoring approach is more low-touch. Families didn't need to directly engage with the math work if that approach was not aligned to their needs or capacities. They could monitor their children simply by ensuring that they were engaging with the Zearn platform.

Other features on Zearn like adaptive weekly goal-setting and digital activity reports also enabled both families and teachers to easily monitor students' progress on learning tasks.

In Hartford, one teacher of multilingual students described how meeting the Zearn completion goals helped fortify his relationships with students and families, "Zearn will track the number of lessons a student has [completed] per week," he said. "We want

to shoot for four [lessons] in grade two. So every week or every other week—as time permits—I create a video with an original song for the students that I am very proud of, and give [them] a big shout out … Parents love it."

High-quality instructional materials also enabled families to go beyond monitoring and provide more intensive and direct academic support to their children.

In all sites, but particularly in those serving elementary students, some families participated extensively in their children's academic learning, sitting in on synchronous instruction, answering their children's questions, asking teachers for alternate explanations of key concepts, or improvising scaffolds when their children struggled. With access to instructional materials, families also provided direct support outside class time—working through homework assignments, reading to their children, or listening to their children read and coaching them when they struggled.

For instance, one parent of a kindergarten student from Rocky Mountain Prep explained the support she provided her child outside of class, "I can help her correct a word if she doesn't get it all the way or have her sound out those words." And in Clarksdale one parent directly leveraged the instructional materials, particularly videos and slide decks, to improve her ability to support her child with conceptual math: "[My son's teacher] emails me PowerPoints and tutorial videos weekly," she said. "These videos are very helpful. I want to teach my child math the way I learned it, but Eureka walks them through it in a different way. The videos show it step-by-step so I can get it and explain it their way versus my way. I work it through with [my son] and give him more examples … it helps him get unstuck on math problems."

Families co-produced students' academic habits

In addition to supporting their children during class, families also played a critical role in developing children's positive academic habits. As members of the expanded core, families, especially families with middle and high-school aged children,

modeled academic habits, supporting students to build and use strong learning habits day-to-day. In some instances, older children, not just adult caretakers, modeled strong academic practices for their younger siblings. For instance, one mother credited her college-aged daughter for encouraging her younger daughter's persistence during a challenging year of virtual learning: "I had just finished my bachelor's degree when the pandemic started, so seeing me online—and seeing her older sister go to college—makes [my daughter] want to be into it too because she's kind of mimicking us."

Another parent in Richmond described how she and her middle school-aged daughter engaged in EL's core texts together. "She loves the texts. I've read some of them with her," the mother said. *A Long Walk to Water*, a novel about a young girl who walks for hours every day to collect water for her family in South Sudan, was a particular favorite of mother and daughter. "I could not put it down!" she said. "I read it in an hour, and it brought tears to my eyes! These kinds of texts are so important for students to read."

The expanded core supports improvement over time

In addition to enabling the day-to-day co-production of learning, the expanded core generates improvement in teaching and learning over time. Traditionally, increasing student learning involved steps to improve one of the three pre-existing pillars of the instructional core: students' role in their instruction, the level or quality of instructional content, or teachers' knowledge and skill. The expanded core, however, posits families as an additional lever to drive ongoing improvement. Families' entrance into the expanded core, gave educators and curriculum providers additional student-specific insight that influenced both classroom activities and curriculum design.

This past year, high-quality materials coordinated this improvement process.

These materials embed within the curricula the expectation that teachers continue to improve instruction even as they deliver it.

In addition to the educative nature of materials, curriculum-based professional learning

Superhero Siblings

While often adult caregivers like parents and grandparents occupy the fourth point in the expanded core, over the course of the pandemic, older siblings have also played a crucial role. Many older students guided their siblings' learning in addition to their own. This was particularly common when parents or guardians were not available to support younger children during the school day, primarily spoke a language other than English, or were unfamiliar with the curriculum. For instance, a Detroit parent explained that she relies on her ninth-grade son to support her younger children with conceptual math, a topic that can often be challenging for parents who learned math in more procedural ways: "The way they teach kids math is totally different from when I was a child. If I have a problem with the younger ones, it's because they are doing algebra. I have my ninth grader come help."

These older siblings provide crucial support to the younger ones, but this support may come at a cost. One mother from Rocky Mountain Prep explained (in Spanish), "As a mother, I didn't know the technology, so I always asked my oldest daughter for help. She also got frustrated because she said, 'I also have to do my things. I have the same schedule.' " ["Yo como mama, no estoy en las redes, todo se nos hacen nuestros hijos, me estresada por masiado. No sabía la tecnología. Siempre le pedía ayuda a mi hija la más grande. También se frustraba porque decía que, 'Yo también tengo que hacer mis cosas. Tengo el mismo horario.' "] A Detroit teacher described what it can be like in these students' shoes: "I might be given other responsibilities like caring for younger siblings, chores, making sure the house looks presentable. Then learning is not something I'm going to do all the time."

In addition to providing academic support to younger siblings, some older students were tasked with providing financial support for their families. Across all sites serving high school students, participants reported that the COVID-19 recession prompted some older students to take jobs that overlapped with school hours. For these students, tech-enabled materials were particularly crucial, because students could access them when it was convenient. Instead of dropping out of school to help support their families financially, students with tech-enabled materials that allowed for asynchronous learning were (quite impressively) able to work while also moving forward academically. One Hartford high school coach explained, "I was recently observing mostly juniors and seniors. The class is 60 minutes [long]. Up until 45 minutes into the block new students were joining the [Google] Meet. They were all very apologetic. It was because of family responsibilities. They are clearly taking on adult responsibilities within their families. [With] the older kids, we have seen a lot of [kids] at work or log[ging] in on their cell phone." As a result, the coach emphasized the importance of leniency and accessible materials, "Being mindful and as flexible as possible with our kids is key. That's another reason we went with the blended model, so they still have access to the materials."

provided teachers with frequent, job-embedded opportunities to improve their knowledge and skill. When aligned with the curriculum, professional learning allowed teachers to experience the curriculum as learners, to be reflective about what was working for their students, and to collaborate with others using the same materials to make adaptations that improved instruction. With high-quality materials and families in the instructional core, educators were poised to guide learning that was both standards-aligned and tailored to students' specific needs.

High-Quality Instructional Materials Broaden Teaching and Learning Practices, Driving Improvement Over Time

High-quality instructional materials provided educative value to the educators and families who used them, improving their instructional skills and capacities. Additionally, shared materials widened the set of potential learning partners, enabling teachers and families to learn from one another, peers nationwide, and curriculum experts. Finally, the materials, with their engaging real-world content, expanded the learning environment beyond the classroom, bridging the gap between home and school.

High-quality instructional materials broaden adults' instructional capacities

In addition to supporting student learning, high-quality instructional materials were also educative for teachers and families, driving improvement in their instruction over time. This was the case long before the pandemic. Teachers and leaders in all sites using these materials, across subjects and grade levels, described how the curriculum guides included generalizable instructional routines and scaffolding techniques that could be applied to new instructional scenarios. For instance, one OpenSciEd teacher explained: "I had a group of students who believed the earth was flat. I used the style of OpenSciEd to get everyone to agree the earth is round, all through the kids' questions to guide and design the experiments. It was so powerful as opposed to me saying that the earth is round. The more evidence you have, the more you know." Here, the teacher added the Open-

SciEd inquiry-based approach to exploring scientific phenomena to her instructional toolbox, allowing her to deliver instruction on a new topic in a way she might otherwise not have done. Thus, simply by virtue reviewing and implementing the curriculum, teachers across all sites were continually evolving their instructional capacities.

Instructional videos included in some materials (e.g., Eureka Math, Wit & Wisdom, and Zearn) also helped teachers improve instruction. An Excellence teacher using Eureka Math said, "I found [Eureka] actually improved during the COVID period. We used to be able to watch Eureka on YouTube, to watch other teachers doing lessons … but now … you can go on their website and you can see [a video] for every single lesson." A math instructional specialist from Excellence explained that the videos extended her coaching reach. "I model for teachers, but I can't do that for every single teacher. I have five schools in the Bronx [New York] and Stamford [Connecticut]. With the videos, it is like having an additional coaching tool for them. I've heard from teachers that videos provided a level of coaching that was missing. They are then able to build their teaching toolbox from the strategies shown by teachers in the videos."

High-quality instructional materials also equipped educators to improve instruction by providing new, tech-enabled, and accessible forms of student data that allowed them to more effectively personalize lessons in a year when student data was often scarce. Zearn, a math curriculum built for digital use, stood out in this regard. "It's easy for teachers to look at reports [to see] what students are doing and where they are struggling," one Hartford instructional coach said. "If students are struggling after three attempts [at a Zearn math problem], the teacher automatically gets a Tower Alert … We're getting real-time data so we can mitigate immediately. For example, I have a fifth grade teacher that gets a Tower Alert for Zearn Lesson 8. The next day, those children are in the breakout room and they're doing Zearn. It's the on-demand remediation. That's been instrumental." At the time of the conversation, 94 percent of the students at this coach's school were logging in to Zearn

on a weekly basis for an average of over two hours each, and completing an average of 52 lessons each.

Another Hartford teacher explained that Zearn data enabled additional strategic instructional planning: "The Zearn data was low, so that was our solution—to get parents more engaged." For this Hartford elementary school, that meant offering family math-learning sessions and communicating with families about academic expectations and how to support their children to meet them. Additionally, when the school learned that some families' work schedules interfered with their ability to support younger children with math, the school reallocated paraeducators' time to support those students. (This reallocation was possible because of reduced numbers of in-person students and an accompanying reduction in behavioral concerns for paraeducators to address.) What's more, the data suggest that the parent engagement strategy was effective. At the start of October, 75 percent of students

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"If students are struggling after three attempts [at a Zearn math problem], the teacher automatically gets a Tower Alert …We're getting real-time data so we can mitigate immediately."

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at this teacher's school were logging in for approximately 100 minutes each. By mid-March, 96 percent logged in for an average of 143 minutes each. Thus, access to this data enabled the educators to improve their instruction, both by personalizing learning and, in one case, by implementing a school-wide strategy to draw families into students' math experiences.

During the pandemic, high-quality instructional materials also equipped the newest members of the instructional core—families—to broaden their set of instructional strategies, and to thereby continually improve their support of their children's academic development.

Participants at more than half of the sites we studied described curriculum resources that were provided to families to enhance their capacity to support instruction at home. Great Minds curricula, including Eureka Math and Wit & Wisdom, were strong in this area since they provided Homework Helpers and instructional videos that directly aligned to class work, module by module and lesson by lesson. Supporting students with conceptual math was a challenge that families cited in all sites using high-quality math curriculum, but one Excellence ICT teacher explained how family-facing resources enabled some families to support their children with minimal teacher guidance. The teacher said that early in the school year, families often came to her with questions about how to support their children with Eureka Math. They would say, "I don't understand this new math. Can you please show me how? At first, I was doing little parent interviews and showing them how to do it. After that, we showed them the videos and the [Homework Helper] and now they're all set." In this case, with some support from the teacher, the materials equipped families to improve their effectiveness as members of the expanded core.

In another instance, a Stoughton math teacher using Bridges curriculum helped a family member improve her capacity to support her children in math. "I have a [student] who had a way of reorganizing numbers in his head and regrouping them. If you were going to add 53 and 31, he may say, I know 31 is one away from 30 so I will take that from the [31 and add it to the] 53 and now it's 84. He would be able to do that with a way bigger number and his mom was like, 'What are you teaching him? Tell me more, because math was really hard for me and he's doing things I couldn't do!' We started talking, she said she had her kid teaching her every night and now the younger sister is in first grade. [Mom says] I can help her now because I understand the theory behind what they are doing." Once again, the family-facing materials were useful in building families' own knowledge of content and, as a result, their ability to support academics at home.

High-quality instructional materials broaden communities of learning partners

Curriculum providers, teachers, leaders and families across all sites resoundingly agreed that during the pandemic, when conditions were changing so rapidly, opportunities to learn from other members of the instructional core who shared their curricula and contexts were crucial for rapid improvement. For teachers and leaders at all sites, this started with their closest colleagues, those who, in an in-person world, would be just a few doors down. For instance, a Hartford teacher explained that during the pandemic, this shared foundation and opportunity to work with other educators was particularly important given the disruptions and their effect on students. "My colleague is my best asset, she's brilliant. We [have] our own professional learning community where we dive into instruction and student data. We bounce ideas off each other, not just talking generically. We really plan ahead and anticipate challenges kids are having and what we should do." In most sites, schools reserved extra time for this kind of peer-to-peer learning given the additional challenge of planning during the pandemic. "It has been helpful to have our Wednesday common planning to figure this out. Otherwise, I might not know how to pace myself," said one teacher from a New York City District 11 blended literacy school.

These close-knit school-based learning communities were undoubtedly crucial, but high-quality instructional materials—along with social media platforms—enabled educators to learn from a broader set of partners with whom they shared a curriculum but not a school building. This kind of collaboration would not have been possible had each person used a unique, self-created blend of materials but it was possible when a common foundation of instructional materials unified educators across traditional boundaries. These online communities were particularly useful for teachers who may have been the only one in their school or district using their curriculum (e.g., the only science teacher at a middle school) or where the curriculum

had been recently adopted, and no one on staff had experience to draw on (about one third of our sites fit these descriptions). "I'm the only eighth grade science teacher," one OpenSciEd teacher said. "I'm a part of the

> "It has been helpful to have our Wednesday common planning to figure this out. Otherwise, I might not know how to pace myself."

[OpenSciEd] Facebook groups. Everyone will give examples and feedback, and you're hearing from people from other parts of the country. It's so necessary to have a teacher community of friends. Teaching is something you can never perfect. A good teacher is constantly revamping curriculum, redoing things, looking at what's working in other places, and modeling stuff off it."

Even beyond sites that had recently adopted high-quality instructional materials or that had teachers working independently with high-quality instructional materials, participants from a few sites noted that the expanded pool of collaborators was particularly helpful during the abrupt shift to virtual learning.

A leader from a New York City District 11 blended literacy school using Illustrative Math explained how her school's teachers used the Illustrative Math Facebook Group to crowdsource instructional resources designed for Desmos, a virtual learning platform. "There were teachers across the nation, who were using [Illustrative] and trying to do it online. They were building lessons from the curriculum onto [Desmos] and then sharing them with one another." In short, because of their shared high-quality instructional materials, teachers were able to learn from others nationwide and improve their own instructional capacities.

High-quality instructional materials broadened the set of learning partners for families as well. In particular, shared materials enabled families to learn from other educators beyond their children's classroom teachers. In at least six sites, participants described curriculum nights where families were invited to learn about the high-quality instructional materials their children were using along with district-level curriculum specialists, "master teachers" and instructional coaches, family and community engagement staff, and professional learning providers. In one New York City District 11 blended literacy school, a family member explained how much she valued the opportunity to engage with professional learning providers around the curriculum, particularly in math; "they have workshops in person and remote … where they explain how they are teaching math … They have always been supportive in helping parents understand what they are teaching the kids because it's different from what we learned." In sites where these curriculum nights were not taking place, families and educators noted that they would like to see them provided.

A family member from another New York City District 11 blended literacy school also made the point that such events could possibly be helpful opportunities for families to learn from one another in the future: "It gives parents a chance to connect … We can relate with what's happening with our children and that would be a great support for some families. Having Mikey's mom communicate with me because [our sons] are in the same class. Maybe she knows something I didn't know—more of that would have been helpful."

Still, in several sites where these curriculum sessions took place during the pandemic, educators reported that attendance was low. Moreover, in all sites that offered these workshops, families and educators said that families were more likely to directly contact their children's classroom teachers with questions rather than attend a group workshop.

For example, one Detroit leader said "That's one of the reasons we're not getting as much attendance [at curriculum nights]. Kids have to be home, and so if the parents have a question, they ask the teacher directly. They have more access to the teacher now that we're virtual than we would have if we were face to face … So if parents have questions, they just ask the teacher right there in class."

High-quality instructional materials help families and teachers broaden the learning environment

In addition to broadening the set of instructional strategies and learning partners available to adults in the instructional core, high-quality instructional materials also support families and teachers to broaden the learning environment—encouraging student learning beyond the classroom.

By design, high-quality instructional materials cultivate in students curiosity and skills to support learning and exploration beyond any individual lesson. Standard protocols and "thinking routines," especially those present in ELA curricula, give students generalizable skills and vocabulary for participating in academic discourse and enable students to lead their own learning both within and beyond the classroom. For instance, a teacher from Hayward, Wisconsin noted that the academic protocols in EL enabled students to engage more critically with others' ideas even outside of the classroom. "A lot of what we're doing is [pulling] evidence to support the points that they are making. They are able to see that this is something I'm able to do in real life. When they are reading a poem and figuring out the theme of the poem, or when they see something on TikTok, they're able to say, I agree with their reasoning because of these reasons or I disagree because of this."

Likewise, a teacher from Stoughton Area School District in Stoughton, Wisconsin described the value of the Wit & Wisdom "Notice and Wonder" protocol. "I love the read, notice, wonder tables … It really gets them to answer and ask questions." The learning does not end with that classroom activity. The protocol inspires more learning, because "once they're asking the questions, once they have those wonders, they want to find the answers." He described how a student might have a "wonder" in class and seek out an answer beyond the classroom. "We're in module four right now, and so once you open up Making Myths, there are so many gods and goddesses. And a lot of the kids want to know who [are] the parents of, let's say, Nike. So [one student] went home, researched it and found out." Another Stoughton school leader noted, "In third grade, they were studying space and [one student went] into depth in his personal life in understanding Mars. This is not a kid who has been historically interested in anything beyond the *Dork Diaries.*" Even students as young as kindergarten were driven to improve their content knowledge. "We catch her choosing books over anything else … EL has made things much more interesting," one Rocky Mountain Prep family member said. "She'll look up animals on her own and write about [them].

Families played a critical role in supporting students to continue learning and exploring at home. In the expanded core, in which families are more informed about and involved in academic learning, families are positioned to nurture at home the academic interests their children develop in school.

For example, aware that her daughter had just completed the CKLA Astronomy Domain, the mother of a first grade student from Clarksdale Collegiate nurtured her daughter's newfound interest in space with a trip to a local museum. "One of her books was about Apollo 13," the parent said. "We went to the science museum and she understood everything [related] to Apollo 13. She knew what the space suits looked like, and who [Neil] Armstrong was." By extending learning beyond the lesson and into the community, this mother created an additional opportunity for her daughter to deepen her understanding and interest in the space-related content introduced by the curriculum. Similarly, in Stoughton, a particularly well-received Wit & Wisdom unit on western expansion and the Plains Indians prompted families to seek additional resources to satisfy their children's interest in the topic: "Kids were asking for the fables and the stories from the Plains Indians for their [holiday] gifts," a school leader said. "Parents [were] calling the school" to find out what books to buy to support their children's interests outside of the classroom.

> " I love the authentic texts ... you can empower [students] with rich literature ... Kids aren't always coming with that background knowledge. It's always about helping kids see themselves as lifelong learners. To empower the kids who may not have seen themselves as having a voice [in academics] before.
>
> - School leader, Richmond

Families Share Knowledge and Needs, Driving Improvement in Teaching and Learning Over Time

Like high-quality instructional materials, the addition of families as the newest members of the instructional core also drove improvement in teaching and learning over time by linking learning experiences at home and in students' communities to learning experiences at school, resulting in standards-aligned learning that was personalized to students' needs. Just as the academic made its way into the home during the pandemic—with families nurturing and modeling academic interests and habits—so the home made its way into the classroom. Across the majority of sites, the entry of families into the expanded core provided educators and curriculum providers with new and constant flows of student-, family-, and community-specific feedback and knowledge, allowing them to continually improve by tailoring instruction and instructional materials to students' and families' needs.

Families provided child-specific insights that helped educators teach better. For example, in Hartford, conversations with families strengthened educators' understanding of families' contexts and affected their instructional approach: "I learn every day. When our teachers and our staff talk with our parents one-to-one, we find out so much more about their background or what they've been through," a Hartford leader said. "With this knowledge, we bring other resources in—our resource teacher, a special education teacher, a support in the home. They make accommodations and modifications. If math is a trigger because it's really challenging and the kid wants to give up and wants to run out of the class, we'll provide breaks or a prize." Likewise, a leader from a New York City District 11 blended literacy school, explained how feedback from families prompted a new practice: recording lessons for absent students: "If kids missed class, and then went back to make up the work, I got calls from parents [saying] … What's the answer to number two? So I told the math team to hit record, during the [Illustrative Math] launch, the key takeaways, and the most important parts, and then post that part of the lesson onto the Google Classroom. If parents are helping their kids or they miss class … they can really see how the task was processed in the room." This practice leveraged the consistent structure of the materials along with feedback from families to enhance at-home access to standards-aligned math learning for students and families alike.

As members of the expanded core, families also enabled teachers to improve instruction by deepening teachers' knowledge of the local communities that they served.

Families were instrumental in providing community-specific knowledge that enabled teachers to better serve students, particularly for educators who were not from the same community or culture as their students. For example, in Stoughton, a teacher shared how her communication with families helped her dispel assumptions about rural farming communities and better serve her students, many of whom belonged to that community:

"I learn every day. When our teachers and our staff talk with our parents one-to-one, we find out so much more about their background or what they've been through."

"There's a big rural farming community [in Stoughton], and I grew up in an urban setting. So a lot of the assumptions about how people live and what life outside of school looks like has been something I've learned a ton from our families that has, I think, helped me better communicate with them, and therefore, their children."

With this deepened knowledge of individual students, teachers and families also generated ideas for ways that they might co-create standards-aligned instruction in the classroom.

Across all sites, educators and families spoke enthusiastically about integrating families and communities into academic settings, inviting them to participate in professional development or to serve as guest speakers for particular units. Describing his ideal school-family partnership, a Hartford elementary school teacher said, "I would have families in here as often as possible, guardians, older siblings, relatives, anyone who is part of the community. [Students would see], that so-and-so's brother or father—an adult in our community with a skin tone that matches ours, and speaking our language—is using fractions in his life, in the work that he [does] to put food on the table." Given that high-quality instructional materials include an abundance of real-world applications and content, such a goal is not so far-fetched. In Stoughton, the ELA curriculum inspired one teacher to leverage "the experts in the community [to] strengthen the knowledge that's tied to what [she's] teaching" and to expand the "white heteronormative, college-educated, thought of what an expert might be." She explained, "Our first module is "A World of Books." One [book] is set in Colombia. I had a student whose father was from Colombia. How powerful it would have been [to have him participate in class]. That's a powerful way to honor and recognize experts in a variety of different ways."

A family member in Clarksdale described a similar hope to see members of the community participating directly in classrooms as subject-matter experts. "I have this extravagant idea … I would love to see the teachers bring engineers and dentists in, and not just have the teachers teaching, but to bring in the community. I would love to have my child learning from local community people … It would be great to have actual people come in and do a reading lesson, or teach about areas they're skilled in. My kids aspire to be engineers."

Such visions were difficult to execute during the pandemic with social-distancing restrictions in place and teachers, families, and communities stretched thin. Nevertheless, the ideas speak to the potential and enthusiasm for maintaining school-family-community academic partnerships after the crisis of the pandemic subsides.

In addition to generating ideas for how families, communities, and educators might co-create and deliver improved learning experiences, families' presence in the expanded core has also facilitated an enhanced under-

standing of what learning materials themselves ought to look like. Families' increasing use of materials brought into greater relief the need for materials to align not just with standards, but also with the needs and expectations of families and communities. As such, the markers of quality have begun to expand when it comes to instructional materials.

Providers and educators alike spoke to a need for family-facing materials. Most high-quality instructional materials include short, accessible resources that enable families to familiarize themselves with what students are learning, and that enable them to provide support at home. But these materials vary in terms of their direct alignment to lessons.

For instance, Great Minds provides Homework Helpers for Eureka Math that align to every lesson offered, providing families with the option to become deeply integrated into students' math learning. Likewise, MATHia by Carnegie Learning provided families with the intensive option to communicate with a "coach on call," during the pandemic. In the middle of the spectrum, a number of providers offered information for families at the module or unit level, equipping families with knowledge of the key ideas, concepts, and learning objectives, and in a number of cases, ways to support module or unit-level learning at home. Others set up resource banks on their websites, or provided tips via social media. Although these approaches aligned with standards, they did not necessarily correspond to the precise classwork in which students were engaged.

> "We want teachers to seek to learn and understand the cultures that students are coming from. In the past, [students] were adapting to [teachers'] space. Now [teachers] need to adapt what [they're] doing to fit [students'] space."

This spectrum of family-facing resources reflects a dilemma around family support: to what extent should curriculum providers and educators expect families to engage directly with curricular materials, given that different families have different capacities to provide instructional support? Curriculum providers took different approaches to this question. Zearn intentionally developed its online learning platform so that a busy parent could simply log a child on, and know that the platform would automate tailored learning from there. The messaging was clear: families, "we've got this," Zearn promised. On the other hand, Zearn also provided families who had the time and appetite for more intensive involvement, resources on social media that were easier to access, and more digestible than the more detailed resources provided to teachers. Zearn also provided one-page tip sheets for families in multiple languages, and tools for teachers to use when supporting families with math. A professional learning provider from Teaching Lab agreed that providing a range of ways to support learning was an important direction to explore. "No parent intentionally [thinks] I'm not going to support my kid." The engagement options should be "tiered," she said, "so a parent could choose and feel proud about what they could do … and not have to feel guilty about being unable to do [everything]."

Families' entry into the instructional core also prompted educators and curriculum providers to increase the ways in which their materials reflect families' experiences, backgrounds, and cultures.

"The pandemic made it easier to see disparities. Kids are home. We are fully in their cultural space and familial space. Teachers need to take that into account. Part of what's challenging is how teachers are perceiving those spaces," one professional learning provider from Teaching Lab said. "We want teachers to seek to learn and understand the cultures that students are coming from. In the past, [students] were adapting to [teachers'] space. Now [teachers] need to adapt what [they're] doing to fit [students'] space. The pandemic is opening up conversations about students' realities, preferences, and what's possible … There have been shifts

in teacher mindset about how much student preference and culture and identity matter."

In sites that serve large populations of low-income, Black, Latino, and multilingual learners, concerns about the materials' capacities to meet students' needs were more common than in sites serving majority white or middle-class students. For instance, in Hartford, where a large proportion of students are multilingual, teachers and leaders reported that some curriculum resources from Eureka were insufficiently tailored to the needs of their students, particularly because they included vocabulary that was inaccessible for students who were learning English. Similarly, at Clarksdale Collegiate, teachers reported that Wit & Wisdom resources were not always sufficiently culturally responsive.[41] Specifically, teachers pointed to a third grade unit, "A New Home," which focuses on immigration. Teachers noted that the unit overlooks the experience of individuals who were brought to the United States involuntarily. "I definitely think high-quality should maintain a focus," explained a provider from Teaching Lab. "[Cultural responsiveness] should be a big part of what it means to be high-quality," she said, "[However, currently], there is no indicator on EdReports for [cultural-responsiveness]."

The pandemic and the deepened involvement of families prompted some curriculum providers to make materials more culturally responsive and shed new light on the importance of existing ways materials represented the diverse communities, cultures, and backgrounds of students using them.

Amplify began to provide read alouds in Spanish to provide more families the option to engage with their children. OpenSciEd drafted new materials that highlighted the impacts of the pandemic on communities, highlighting troubling inequities. Great Minds began expanding the array of Wit & Wisdom texts to allow users to choose those that best fit their students' needs and experiences. A Zearn representative described a simple but important way that they honored students' and families' backgrounds and experiences by including teachers with varied identities on their platform. "Research shows

that many Black students will not have a Black teacher in their academic careers," the Zearn representative said. "Representation and role models matter. We intentionally created a learning experience where all kids can see someone like themselves learning and loving math."

Still, some educators and providers find that at least some of the work of ensuring that curricula meet students' cultural needs and preferences should be left to those who know students best: educators and families.

"I don't think there will ever be a boxed curriculum that meets everyone's needs or that can be responsive to the students in front of [every teacher]," one professional learning provider said. "How can we build teams of teachers who are interested in

 "Representation and role models matter. We intentionally created a learning experience where all kids can see someone like themselves learning and loving math."

curriculum and design who can … both build knowledge and expertise in things that come from [students'] history and the community and culture, while also exposing them … to things in the world[?]"

Clarksdale educators, along with their professional learning provider, have also begun to explore how this work might look. They collaboratively adjusted portions of the Wit & Wisdom "A New Home" unit to focus on the Great Migration, an immigration experience that would be more relevant for their students, over 90 percent of whom are African-American. Because they worked as a group and included a professional learning provider in the effort, changes remained aligned to standards and grade-level content and were implemented consistently across classrooms.

Lessons Learned from COVID-19 and Implications for the Future

The pandemic forced schools and families to realize an often-professed aspiration: an instructional core that facilitates and benefits from true family-educator-student collaboration, as well as from the co-production and continuous improvement of learning. The return to a more "normal" 2021–2022 school year raises a set of implications about how to build upon and sustain this model after the forces necessitating co-production subside, allowing school systems to make the most from learning opportunities inside and outside school.

Schools and school systems must fill the vacuum left by crisis with structures and foundations that support the expanded core. Key steps include:

Expand the required dimensions of "high-quality" instructional materials to include that they be educative for families, tech-enabled, and culturally responsive

To maintain the benefits of the expanded core, the sector should expand its understanding of what marks quality in instructional materials. Specifically, in addition to being standards-aligned, materials should be (1) educative for families, (2) tech-enabled, and (3) culturally responsive.

To be educative resources for families, materials should, at a minimum, provide key information needed for families to support their children at home. Family-facing resources should be brief, accessible, and supplied in a language that the family uses. Given variability in the amount of time and capacity any given family has to directly engage with their children's academics, curriculum providers should also strive to provide resources that enable families to engage a range of roles, from monitor to co-creator. For instance, if a family member

wants to monitor their child's work, to ensure it is completed and submitted, they may need to see only a list of assignments and corresponding directions. Another caregiver may wish to learn alongside their child, providing coaching with homework. They might benefit from more detailed guides or overviews or a video-recording of a lesson. Family-facing materials should be provided to fit these and other roles that families may wish to take on as members of the instructional core. The availability of these resources should be factored into judgments about the quality of material.

In addition to providing educative value for families, materials should be tech-enabled and family friendly. Tech-enabled curricular features increased the capacity for both families and students to participate meaningfully in academic learning because materials were available online and accessible to each actor from almost anywhere. Often, families cited curriculum-provided instructional videos as the key resources that enabled them to directly support standards-aligned learning at home, particularly in subjects where the curricular materials was less familiar to them. In addition, digital assessment reports provided automated, real-time data that helped teachers and families better understand and support student learning. Looking ahead, curriculum providers should consider ways to leverage technology to improve materials and the experience using them. Likewise, school systems should also consider a curriculum's available tech-enabled features, as well as their usability, before adoption and implementation.

Lastly, in the context of the expanded core, another marker of quality should include the degree to which the materials are culturally responsive. As noted above, the expanded core blends the worlds that students inhabit, increasing students' sense of belonging in the academic community by emphasizing its links to their home communities. Curriculum providers can facilitate this blending by taking a "windows and mirrors" approach to curriculum design, that is by providing materials in which students see their communities

and their identities represented, while also building their knowledge of other communities. One approach to achieving this, most relevant for ELA curriculum providers, is to provide a range of standards-aligned texts that can serve the same instructional goals, enabling educators, families, and students to select the texts that they believe will best suit students' needs.

Leverage high-quality instructional materials (with the added criteria of educative for families, tech-enabled, and culturally-responsive) to coordinate academic co-production among the four anchors of the expanded core

School systems should continue to use high-quality instructional materials to coordinate the activity of families, teachers, and students in service of learning. These materials coordinate expectations and curricular knowledge among actors so that the complex work of educating children and catalyzing their academic passions can be shared by teachers and families, as well as carried on both in and out of classrooms. With a foundation of shared high-quality instructional materials, educators and families can partner regularly to set and monitor learning goals based on children's individual circumstances, tailor instruction to meet those goals, and celebrate success. With deepened knowledge of their students' academic materials, families can supplement students' crucial content knowledge through conversation, reading, and shared academic activities.

After this past year, systems can also comfortably discard the limiting belief that high-quality instructional materials are best used as tools for reducing variables in the classroom, a sort of "teacher-proofing" mechanism that homogenizes instructional practice and excludes the unauthorized, including families, in order to preserve a controlled and "ideal" learning setting. If nothing else, learning during the pandemic has revealed an additional and rich use case for materials: they can create more inclusive instructional communities that include families, co-produce individualized learning opportunities

across modalities, and professionalize teaching. Continuing to leverage the full power of materials, particularly their powers of coordination, will enable schools and systems to use content to orchestrate actors and activities, and provide ample opportunity to extend learning beyond boundaries between educators and families and between the physical boundaries of school and home. Furthermore, entrusting teachers, in partnership with colleagues, students, families, and professional learning providers, to tailor materials will also increase their capacity as professionals with the skills and expertise to make instructional adaptations and improvements that best serve students.

Sustain curriculum-based professional learning focused on the expanded core, with explicit focus on implementing high-quality instructional materials in ways that respond to student, family, and community needs

When materials improve so too must teachers' ability to use them. Improving the educative, tech-enabled, and culturally responsive features of materials must be accompanied by professional learning and support for teachers to use these improved materials with students and families. Professional learning seldom focuses on academic partnerships between teachers and families; nevertheless, all teachers do not have the same capacity to partner in this way. Already, as some students return to in-person learning, there's evidence that the partnership between school and home will require additional support to sustain.

If teachers are to effectively maintain the expanded core without the forced proximity to families, they will need support in doing so. Professional learning providers, schools and systems can ensure that already existing professional learning opportunities intentionally integrate both the concept of the expanded core, its importance, and practices that can help teachers maintain it. For example, schools might collect data from families on their experiences with the curriculum, and use that to structure improvement. At a more central level, systems might add opportunities to discuss partnership with families around academics, reviewing the family-facing instructional resources, for example, modeling educator-family academic partnership in simulation scenarios, or even

inviting families to share their experiences during sessions. Some school leaders and professional learning providers described how they have begun to do this work in informal ways. One Excellence teacher described how in professional learning sessions, his math specialist would always ask teachers, "What might be a question that parents would ask when students come home with the problem?" to prompt the teachers to discuss potential supports they might provide for families. Such practices could certainly be expanded and formalized to ensure they reach more teachers, including in teacher preparation programs.

Moreover, those providing professional learning must continue to build educators' capacities to use technology for the delivery of instruction and for the coordination of the pillars of the expanded core. Families resoundingly agreed that technology facilitated their deepened engagement with academics during the pandemic and their heightened communication with their children's teachers. Nevertheless, teachers frequently noted their own technological fluency as an area of growth. In some sites, teachers even expressed an eagerness to "get back to normal," abandoning onscreen learning and communication altogether. In order to more wholly leverage the student-specific knowledge and support that families bring to the academic table, teachers must be equipped to instruct, share resources, and communicate with families virtually. Professional learning that builds these skills must continue in the post-pandemic education system.

Create systems and structures for families, teachers, and students to design, monitor, and improve upon learning experiences

Improvement processes in education are commonly limited to practitioners. Teachers, coaches, and administrators regularly engage in observations, analysis, and short-cycle tests to improve instruction. However, the expanded core showed the possibilities available when the improvement process includes families and students as well. Moving ahead, school systems might seek to create structures that embrace rather than neutralize the effect that families, particularly low-income families and Black and Latino

families, have on facilitating and improving academic learning.

Well-intentioned educators, working to provide quality learning experiences despite myriad challenges students face outside of the classroom, may seek to create educational environments in which all students—whether their families are involved or not—have access to the same level and quality of learning. One effect of efforts to equalize students' access to instruction by neutralizing the impact of families, however, is that school systems put up walls that isolate families from academics and turn them into an exclusive domain of the school. But as the expanded core shows, teachers, families, and students are uniquely positioned to improve upon learning experiences. They bring knowledge of standards, family and community that together have the potential to produce standards-aligned learning experiences that truly meet student needs.

Teachers come to the instructional core with a bird's-eye view of their classroom. They are generally balancing the needs of 20 to 30 students with an eye to the end-of-year benchmarks for students. Families, on the other hand, come to the core without such broad context—to important effect. While teachers' efforts are often spread thin, families are hyper-focused on their children and how their children are performing on instructional tasks day-to-day. This information, if leveraged, provides an additional nuanced viewpoint that could drive improvement in instruction.

The pandemic has also shown that families are equipped to provide pragmatic feedback on instructional strategies and materials. Rather than providing feedback for the sake of evaluation, they provide feedback to teachers that's aimed at ensuring that students learn as best as they can, a goal they share with teachers. In this sense, they serve a kind of peer-like function. Just as teachers deeply enhance one another's learning and improvement, families can do the same, providing a different perspective.

By virtue of their proximity to both students and families, teachers also have a hitherto untapped role to play in improving learning experiences, specifically, by adapting mate-

rials so they're more responsive to students' needs, including their cultural needs. But for many, particularly those in the education sector who have expended great energy to ensure high-quality instructional materials are implemented with fidelity, such adaptation poses an undesirable risk, potentially destabilizing concerted efforts to guarantee students' access to standards and equally rigorous academic content.

That said, teachers have spent the course of the pandemic adapting curricula to meet the needs of their students in meaningful and innovative ways. They found and utilized new digital platforms when high-quality instructional materials were not designed for virtual use, shifted curricula to render them more culturally responsive, and adjusted pacing to ensure that standards would still be met in the face of drastically shortened school days.

Kristin Umland, President of Illustrative Mathematics, said that her organization encourages use of the term implementation with integrity rather than fidelity. "A script doesn't work," Umland said. Even though Illustrative Math comes with ample scaffolds for multilingual learners, students with disabilities, and culturally responsive teaching, "[teachers] need to make choices based on the students in front of [them]." Not every adaptation is appropriate though. Umland said, "It's making the right kinds of choices that don't decrease the level" but instead add appropriate supports to increase students' access to grade-level content. Similarly, Jim Ryan, the executive director at OpenSciEd shared that one of the highlights this year has been witnessing and participating in local adaptations. "Because these are creative commons materials, because they are open, teachers and institutions, districts and schools, are adapting them for their own context," Ryan said. "The innovation that we've seen among educators, among practitioners, is really heartening … These materials aren't just purchased for them, they own them." Perhaps it's this dynamic, the

close interplay between curriculum provider and on-the ground practitioner, that makes all the difference when it comes to adaptation. During the pandemic, teachers weren't making adaptations in isolation but rather in teams, supported by curricular experts, coaches, school leaders, and one another. When changes were made to the curricula, they were thoughtful and consistently implemented. They may have strayed from the script, but they didn't lose track of the key standards.

"Even though Illustrative Math comes with ample scaffolds for multilingual learners, students with disabilities, and culturally responsive teaching, "[teachers] need to make choices based on the students in front of [them]."

As such, school systems should create structures that let teachers benefit from the feedback and knowledge that families bring to the academic table, including by applying that knowledge to adapt materials. To support this work, system leaders should provide time and training for relationship building with families to help educators understand student, family, and community needs, as well as preserve time for teachers, leaders and providers to brainstorm and plan to implement the high-quality instructional materials in ways that meet those needs. Opportunities might also include a more collaborative take on the traditional curriculum night, with teachers, families, and students—supported by instructional leaders or professional learning providers—gathering to explore standards-aligned instruction that meets the unique needs of each class of students. Teachers would bring curricular

knowledge and knowledge of the standards, and families and students would contribute knowledge of the topics that are exciting and relevant for them and the learning mechanisms that function most effectively. All parties would learn from the others, while helping to co-create truly responsive learning approaches.

More systematically, this might also involve building more cross-functional collaboration between frequently silo-ed family engagement and teaching and learning teams at both the school and system levels. In addition, schools might support teams of families, students, and their teachers to conduct individualized planning and progress monitoring in a manner similar to the way this expanded core team operated during the 2020–2021 school year, thinking beyond quarterly parent-teacher meetings and opting for more frequent collaboration, whether virtual or in-person. Both schools and systems might consider structuring schedules, and building flexibility into the policies governing their creation, in a way that provides dedicated time for teachers and families to interact. They might opt to centralize supports that are often time intensive and shouldered by teachers, but that could feasibly be done by other staff. As we saw during the pandemic, this includes collecting attendance, conducting wellness calls, and providing support with technology.

With the fundamental four—students, families, teachers, and instructional materials—education systems and teachers can strengthen daily practice and bridge boundaries between home and school, maximizing learning in each location. Moreover, schools, families, and teachers can get better over time, growing together to advance equitable learning opportunities and student wellbeing.

How Can the American Rescue Plan Elementary and Secondary School Emergency Relief (ARP ESSER) Help Sustain the Fundamental Four?

1

Adopt high-quality instructional materials that are educative for families, tech-enabled, and culturally responsive. Standards-aligned materials that best support the expansion of the instructional core rise to meet evolving technological standards and support the needs of families. These materials enhance access to learning across modalities, provide families with the guidance they need to support students in learning in the classroom and beyond, and work to meet families' cultural needs. Curricula that let students access asynchronous video lessons aligned to lessons conducted in the classroom may prove particularly useful, especially for older students who may face financial pressures to work during standard school hours. School systems that aim to use ARP ESSER funds to purchase or adopt curricula should strive to select programs that meet these criteria. Adoption of high-quality instructional materials typically lasts about three years, which also makes it a well-timed option for ARP ESSER funds.

2

Provide curriculum-aligned professional learning opportunities that enable teachers to support one another in building technological fluency as well as collaborative academic relationships with families. During the pandemic, teachers repeatedly shared that the most effective professional learning opportunities they experienced were curriculum-aligned and enabled them to learn about from peers who understand their specific circumstances and contexts. Teachers repeatedly referenced the value of working with peers to identify and utilize digital tools that would allow them to continue to deliver standards-aligned instruction to students despite the pandemic's disruptions. Teachers also reported that their ability to meet specific students' needs was deepened by knowledge that they acquired from families. As such, school systems that invest in professional learning with ARP ESSER funds should aim to maintain and extend opportunities for teachers to collaborate with and learn from peers while working directly with standards-aligned curricula. Additionally, they should aim to support teachers in the crucial work of developing their technological fluency and academic relationship building and collaboration with families, two areas in which teachers reported receiving little to no training prior to the pandemic.

3

Invest in instructional coaching and support that centralizes the work of aligning curriculum with state standards, providing pacing guidelines, and developing shared resources that can facilitate effective implementation of curriculum system-wide. In addition to learning from peers, teachers appreciated the opportunity to deepen their curricular knowledge through work with leaders and coaches who understood their local contexts, whether those coaches were based in their districts/CMOs or from external organizations. These individuals can play an essential role not just in coaching teachers school by school, but in facilitating the sharing of best practices system-wide. These individuals also provided key guidance when teachers worked to adjust instructional materials to their students' specific needs, reminding teams of key standards and concepts that needed to remain central even when lessons were adapted.

4

Hire from local communities and families as a way to more formally integrate and benefit from their unique community-, cultural-, and student-specific knowledge. Given nationwide concerns about unfinished learning, systems are considering acquiring additional instructional and support staff, for instance, to support after school tutoring programs. When staff hail from the school's local community, they bring with them additional ties to and knowledge of the local community, a true benefit for the relational work on which the expanded core relies and a critical asset for making materials more culturally responsive. To maximize the potential of the expanded core, school system leaders should consider making new hires from local communities and even from students' families.

5

Provide families with centralized tech, curriculum, homework, and other support that allows them to partner on academics. Formalize regional (or online) hubs and centers for families to receive support with tech, curriculum, homework, and other essential needs, and where it makes sense to do so, partner with communities in these efforts. In sites where the expanded core was functioning, school systems created centralized structures to meet families' essential needs, freeing up space for students, families, and educators to focus on academics. Regional (or online) hubs and community centers allowed families to receive a range of support that helped them support learning at home. Without these centralized structures, families either went without support, or individual teachers offered their time and services, frequently outside the contractual school day. As it makes sense, systems might more efficiently serve families and manage expectations on teachers by providing support at the central level.

Conclusion

To date, questions driving instructional improvement have focused on the traditional core: specifically, the extent to which policy influences teachers' knowledge and skill, the level of content in classrooms, the role of students, in the instructional process, and the relationship between them.[42] The urgency of the current moment, one marked by increasing disparities in students' access to equitable education yet simultaneously distinct in its remarkable remaking and expansion of the school-family partnership, requires that we ask an additional set of questions in order to fill the vacuum crisis will inevitably leave and create a sustaining and lasting link between school and home. To push systems even further towards meaningful improvement, we must now consider how policies affect families' knowledge and skill, their role in the instructional process, and their relationship with teachers, students, and content. Keeping students, families, and the integrity of the promise of equitable education whole will require more in the core, more inclusivity, more authenticity, and more individualization.

Fundamental 4: Pandemic Learning Reveals the Value of High-Quality Instructional Materials to Educator-Family-Student Partnerships

28

Title

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39   "NYC Geog Dist #11—Bronx Enrollment (2018–19)," New York State Education Department (website), accessed July 2, 2021. https://data.nysed.gov/enrollment.php?year=2019&instid=800000046011

40   Elmore, Issues in Science and Technology: "[It] is the relationship between the teacher, the student, and the content—not the qualities of any one of them by themselves—that determine the nature of instructional practice."

41   Zaretta L. Hammond, Culturally Responsive Teaching and the Brain. (Thousand Oaks, CA: Corwin Press, 2015.)

42   City, et al.