

FROM FRAGMENTATION TO COHERENCE

How more integrative ways of working could
accelerate improvement and progress toward equity in education



A REPORT FROM

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CO-AUTHORED BY
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We cannot change the nature of the system we want to improve, but **we can change how we approach the work of innovation and improvement.**

ABOUT THIS REPORT

Informed by numerous conversations with education thought leaders, this document explains how educational reformers often create conflicts for educators, students, and families by moving ahead with solutions before fully understanding the nature of the problem to be solved, or the context in which it takes place. To address this issue, the paper calls for a learning agenda on how to build the capacities of organizations to work in ways that produce greater integration of effort, and less fragmentation. Part of that agenda includes the Carnegie Corporation of New York-funded “Integration Design Consortium,” a series of five action-learning projects taking place in states and local communities across the country.

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ABOUT THE PHOTOS

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INTRODUCTION

Why do so many efforts to improve education fall short of aspirations? The answer may have less to do with the strategies we pursue than with the ways in which we pursue them.

Too often in education, our work to improve student outcomes creates fragmentation for the very people we need to support.

In our urgency to get things done, we lock ourselves into a narrowly defined course of action before understanding the problem from the point of view of those who most directly experience it. We grasp for silver bullets and work in silos as we seek implementation by way of compliance. The result is that well-intended initiatives wind up creating conflict for practitioners and those they serve. Different initiatives may clash with each other, with the contexts in which they are implemented, or with the realities of how people respond to and adapt to change.

Students lose out when their teachers must **teach one way to deliver a curriculum and a **very different way** to prepare them for assessments.**

While this fragmentation is frustrating to those who experience it, even more important, it denies students the full benefit of all the energy invested in their education. Students lose out when their teachers must teach one way to deliver a curriculum and a very different way to prepare them for assessments. They lose out when their principals devote energy to compliance issues rather than building the instructional capacity of their staffs. Students also lose out when their own experiences from grade to grade and class to class lack clear connections, and fail to build on each other to help them succeed in college and careers.

This diversion of energy severely limits our ability to improve student learning, and it slows our progress toward a future in which ethnicity and wealth no longer predict such stark differences in student achievement and college completion.

In the face of the conflicts we create, individuals react in a number of ways. Educators—and even students and families—may do the minimum to satisfy demands. They may push back. They also may stop trying—an especially tragic response for the students who are the most at-risk, and who can ill afford the burden of having to navigate a disjointed landscape of educational experiences. Says Hailly Korman, a principal consultant with Bellwether Education Partners: “For this group

of kids, it really does not take many more of those moments of frustration with public systems to make them say, 'this isn't worth my investment and engagement anymore.' "

A more productive way of working would account for the fact that education is a complex social system. Our system of schools in the United States is highly decentralized. It encompasses great diversity, competing demands, and numerous interdependencies. The inequities we strive to erase have deep-rooted causes. Education is also a massively human-driven enterprise, in which little can happen by fiat. Improving such a system requires that we discern the interdependencies within it, understand how people learn, and allow for repeated adjustments based on data, evidence, and experience. This increases the odds that our efforts to improve outcomes will be well-integrated, so that all students and families are better served.

An integrative approach is not simply a matter of continuously improving the components of the current education system. Transformative advancements, rather than incremental change, require that significantly different ways of working become the norm in a field. Moreover, the need for new ways of working extends beyond the realm of government agencies and institutions with long histories. Innovators who seek improvement by disrupting the system, or by building new ones, have similarly experienced the difficulties that arise from working in isolation and moving forward with untested assumptions (particularly when attempting to scale their innovations, or to set themselves up for long-term sustainability).

An integrative strategy entails working across traditional silos, and focusing on how individuals experience the systems we want to improve. The techniques for doing so may be found among such well-established disciplines as human-centered design, systems thinking, and change management, among others. While these methods are discussed, studied, and tinkered with in education, their practice is far from widespread in the field. That will likely continue to be the case without some coordinated investments to build the capacities of people and organizations to work in ways to produce greater coherence. The shifts in mindset and culture represented are too big to think otherwise.

Carnegie Corporation of New York has come to this realization after extensive inquiry into why so many efforts to improve education fall short of their aspirations. From conversations with dozens of thought leaders and innovators, and our own observations of grantee work, we believe the answer may have less to do with the strategies the field has pursued than with how we have pursued them. Fragmentation puts practitioners and the students they serve in the difficult position of having to make sense of seemingly unrelated demands—while those who cannot fall through the cracks.

Continuing to work in ways that create or exacerbate fragmentation will only yield more disappointing results, no matter what strategies we pursue. Merely seeking compliance



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for a different set of silver bullets is unlikely to significantly raise performance overall. Nor will it dramatically narrow the troubling and persistent gaps in outcomes that break down along racial and economic lines, and which call into question America's promise of opportunity for all.

In one attempt to catalyze the shift to more productive ways of working, the Corporation has launched an "Integration Design Consortium" (IDC). In the IDC, grantees are attempting to develop the capacities of individuals to promote greater coherence within state agencies, school systems, and local communities (for more on these projects, see pages 17-19). By adapting many existing approaches from different fields, the consortium aims to explore and better understand the conditions, structures, and work processes that can support better alignment of effort in education.

But the Corporation views all of its current investments in education as opportunities to push for and learn about different ways to achieve greater coherence. Our hope is that the many other organizations pursuing various models for improvement and innovation will do the same, and that they will join with us in sharing what they are learning. Our work and conversations with partners in the field convince us that there are numerous strategies that can address the problem of fragmentation. By together building a new body of knowledge about ways to achieve greater integration we can accelerate the transformation, and in doing so accelerate our progress toward equity and improvement.



What Integration Looks Like: A SHORT STORY

For a concrete example of the shift from ways of working that exacerbate fragmentation to ways of working that result in integrated efforts, consider the case of the Louisiana Department of Education, as recounted by Assistant Superintendent Rebecca Kockler. When she first took her job at the state agency she got an earful from a group of classroom educators. She had been tasked with leading an inaugural meeting of 100 “Teacher Leader Advisors” selected to provide input on state initiatives. From the meeting’s start, she recalls, they let loose with a long list of ways in which they felt pulled in different directions by various state requirements.

Many complained, for example, that what they were asked to do as part of new teacher evaluation rules had seemingly no relation to the state assessments used to measure their students’ progress. As Kockler recalls: “So many teachers told us they felt pushed to teach different content throughout the week. They told us, ‘I’ll teach one day for COMPASS (the evaluation system), then another day for LEAP (our state assessment), and then lessons from the curriculum.’ They said ‘I literally teach things differently—I do different things in my classroom—depending on the focus of that day.’ ”

Fortunately, the Louisiana story does not end there. In subsequent months, the department’s field staff was reorganized so districts had one point of contact for all state programs. In planning new initiatives, a greater emphasis was placed on mapping out all of the people whose work would be implicated. In a new practice at the agency, communications were vetted by multiple teams before going out. Over time, the department would rely heavily on its Teacher Leader Advisors to review, develop, and pilot curriculum materials and professional learning programs aligned to the state’s academic standards. A much larger group of teacher leaders—two from

each school in the state—was enlisted to deliver information on new state expectations and resources to their colleagues at the local level.

Recent evidence suggests these efforts may be paying off. In 2016, the RAND Corporation released a study showing that, compared with their peers in other southern states, Louisiana teachers made greater use of state department of education curriculum guidance, and demonstrated a better understanding of instructional techniques aligned to college and career-ready standards.^{1, 2} True, the study also showed Louisiana still has far to go before all its teachers understand the required shifts in instruction. But its teachers were more than twice as likely as teachers across the region to correctly identify certain teaching methods as the most appropriate for supporting students in mastering their state’s new academic expectations.

Louisiana teacher Tammy Schales agrees that the state’s approach to supporting instructional change has greatly improved. When the state department first rolled out new expectations for student learning several years ago, she says the message was: “here are the new standards, here are the old standards and what was missing from them, now good luck!” As a teacher leader advisor, the elementary school teacher has since then helped write the state’s guidebooks on how to teach to the new standards in English Language Arts. In her own teaching, Schales says she no longer feels so pulled in different directions. “I don’t stop teaching the way I teach to get ready for a test anymore,” she says. “We’re teaching how to break down texts all year long.”

Note that Louisiana did not abandon evaluation, assessment, or curricular guidance. Rather, the state department realized those components were failing to cohere for the practitioners whose work they most implicated. Moreover, the agency realized that a major contributor to that lack of coherence was how the agency itself went about its work. Initiatives were pursued too often as independent projects, and with too little attempt to incorporate the actual experiences of practitioners into their design. In response, the state department changed the way it operates to achieve greater coordination, and to better understand how its work was playing out in the field. Instead of changing what they were doing, they changed how they were going about it.

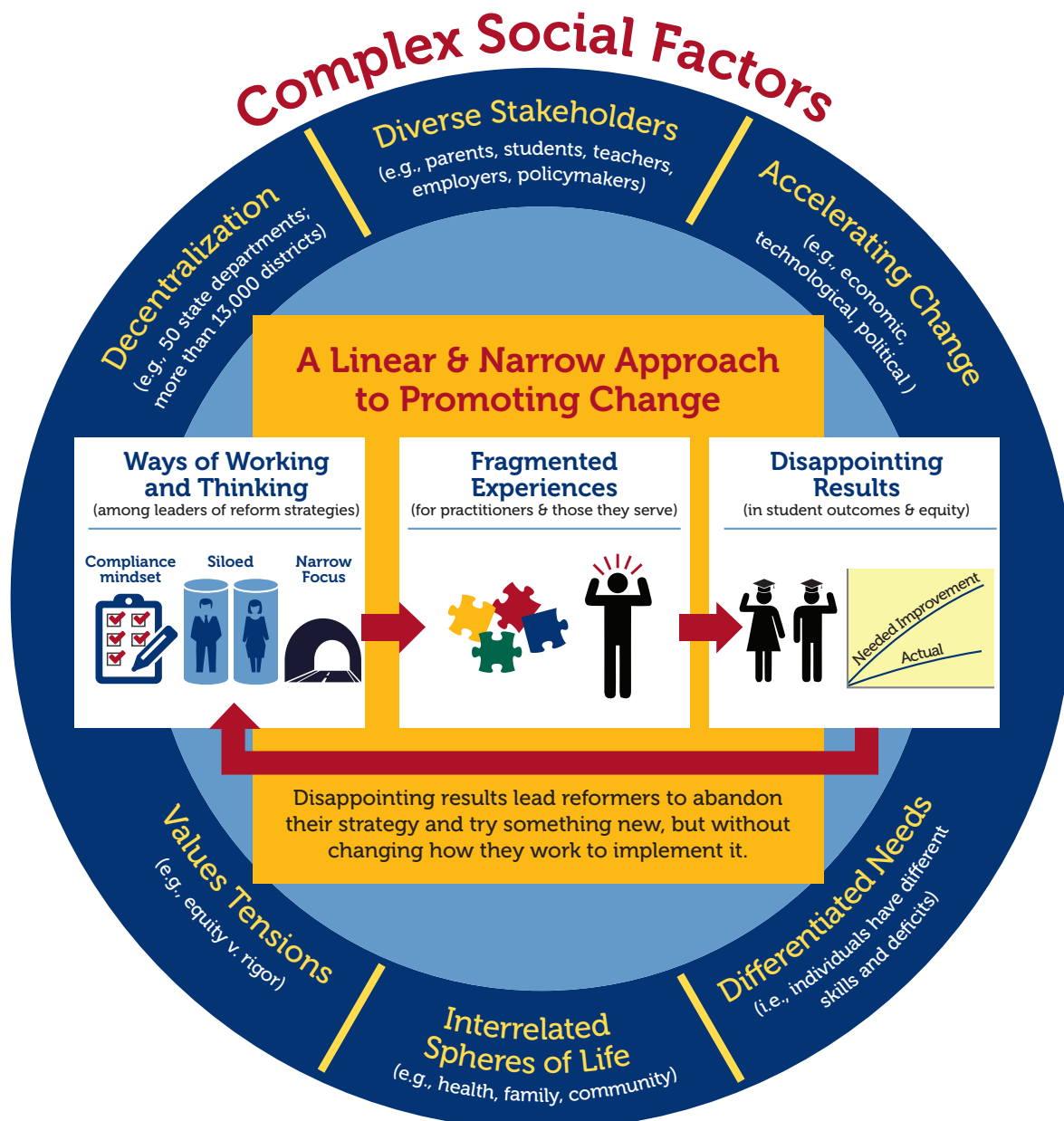
“[Teachers] said, I literally teach things differently—I do different things in my classroom—depending on the focus of that day.”

The Source of the Problem: An Ill-Suited Approach for Improving a Complex System

While fragmentation is to some degree endemic to the structure of public education, the problem is greatly exacerbated by ways of working that are ill-suited for improving a complex social system.

Consider the chart on this page to appreciate the mismatch between the complexities of the context and the ways in which improvement and innovation in education is typically pursued. While the 50 states set policy for broad requirements and

accountability, the specifics of what to teach, how to teach it, and how to support that teaching are determined at the level of the local district, of which there are more than 13,000. Schools vary enormously in the resources at their disposal, and in the needs of the students they serve. Parents, business leaders, elected officials, and school employee organizations all exert influence over what happens in education, and yet their interests are far from perfectly aligned.



An Ill-Suited Approach For Working Within A Complex Social Systems

Within a system characterized by complex social factors, working in isolation and with a narrow focus results in solutions that are ill-suited for the realities in which they are implemented. This leads to less-than-desired outcomes, which in turn leads reforms to be abandoned for new strategies.



Unless we adopt more integrative ways of working, we may find ourselves continuing to experience the same frustrations, even as the field bets on a new set of strategies.

Add to that complexity the challenge of preparing all students to succeed amid accelerating changes in technology, information, and the workplace. Along with the foundational competencies, we now ask teachers to support every child in developing the ability to think critically and solve novel problems. These goals contain within them inherent tensions that greatly complicate the practice of teaching. As Mary Kennedy details in her book, *Inside Teaching: How Classroom Life Undermines Reform*, teachers may subscribe to these ideals and yet struggle to enact them, as when they value intellectual engagement, but feel they must rely on procedural learning to keep all students on task.³ Negotiating such demands takes significant effort.

But our habit in the field is to approach improvement and innovation as if it were relatively straightforward. Our colleagues at the Carnegie Foundation for the Advancement of Teaching use the word “Solutionitis” to describe this tendency. We reach for solutions before we sufficiently investigate the problem, and we fail to test and refine those solutions before taking them to scale.⁴ The typical approach is to go straight from the data (e.g., college-going rates are low, or teacher evaluations seem inflated) to a remedy (e.g., more rigorous

high school requirements, or new evaluation criteria). From there it is a matter of planning and implementation, often via superficial requirements (e.g., timelines for showing compliance).

A linear and laser-focused strategy works best when the consequences of change are predictable, contexts are similar, and there are a small number of easily measured and agreed-upon outcomes. In education, where none of that is true, what too often results are more missteps than expected and more pain than is necessary. Instead of real expertise we get cosmetic changes.⁵ Frequently, these disappointing results lead us to abandon strategies and try something new.⁶ To be sure, many of the improvement strategies pursued in recent years have moved the needle in some important ways. But it would be hard to argue that the levels of performance they produced were anywhere near what was hoped for—or anywhere near what we need to ensure the future success of all students.

Unless we adopt more integrative ways of working, we may find ourselves continuing to experience the same frustrations, even as the field bets on a new set of strategies. Certainly there are strong cases to be made for the recent investments in developing curriculum materials, personalized learning, and social-emotional learning. But nothing inherent in these strategies ensures they will provide students with a more coherent educational experience. We could easily pursue them in the same manner as we have previous strategies—by piling new requirements on top of existing strategies, without regard to the complexities of implementation and local context. If that is the case, fragmentation will continue, deepening our frustration with the pace of progress in the face of urgent inequities in educational outcomes.

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Three Principles for Working Integratively

Rather than act as though education were not a complex social system, we would do well to work in ways that account for and address the complexities. We cannot change the nature of what we want to improve, but we can change how we approach the work of innovation and improvement. From our own work and our many conversations with education leaders, we have come to see three guiding principles for working in ways that result in more integration of effort than typically occurs in the field. Strategies for promoting greater coherence are more likely to succeed—and produce significantly better outcomes for students and families—if they seek to accomplish the following:

1 Build a shared understanding of purpose.

Scratch below the surface among a group of people engaged in educational improvement and you will likely find a lack of agreement about what they are working toward. Though we use the same words in talking about goals and strategies, the images they conjure in our heads often bear significant differences. This produces a multitude of often conflicting practices and priorities. **Instead of assuming everyone is on the same page, deliberate attempts must be made to forge a shared understanding about what students need most from their time in our education system.** Only then can everyone in the system ask how their own work contributes to meeting those needs, so that all young people have the opportunity to succeed. Granted, full agreement may not always be possible, and when differences seem irreconcilable we should be willing to move ahead for the sake of our students. But by working toward a shared understanding we can avoid those disagreements that so often result from misconceptions about intentions.

2 Understand the circumstances of the various actors involved.

Any strategy to improve education has implications for many individuals who play different roles and have different life experiences. When we fail to recognize this we force people to expend energy figuring out on their own how to adapt—if indeed they can. A strategy to promote new instructional techniques has implications not just for teachers, but also for how principals lead their schools, how parents support their children's schoolwork, and how students think about their own learning. An integrative approach to instructional improvement would include some effort to identify such actors, understand the constraints and imperatives within which they operate, and determine what supports they require. **Strategies for achieving equity should be informed through the engagement of people with diverse perspectives.** Such understanding allows for creating solutions that actually fit with, and improve, people's circumstances.



3 Incorporate repeated adjustments based on experience.

Nothing so complex as education can be changed without some unanticipated consequences. No matter how much forethought goes into an innovation or improvement strategy, its implementation will reveal unforeseen challenges. When we get into trouble is when we attempt to go to scale and when we attach significant stakes to initiatives before we discover what those challenges are. To avoid this requires more than a single pilot. **An integrated strategy is the result of multiple iterations and trials, each carried out with an eye toward understanding the experience of the individuals involved.** Given the complexity of the challenge, real progress toward achieving equity and improvement can only come by way of repeated trials and adjustments.

The above consolidates our insights, and those we have heard from our partners in the field, when we reflect on what is most often missing in the pursuit of improvement strategies and innovations in education. As principles, they provide guidance about what a more productive approach needs to strive for. (Later in this document we highlight disciplines that offer specific methods for developing the organizational conditions, structures, and habits of mind and work that can support these principles.)

Failure to work towards these goals almost guarantees fragmentation and, as a consequence, disheartening results. Conversely, when our work is guided by these principles, it can only increase the odds that the fruits of our labor are designed and implemented so as to be well integrated. By not forcing people to have to make sense of conflicting and unsupported demands, more of their energies may be devoted to the enhancement of teaching and student learning.

We cannot change the nature of what we want to improve, but we can change how we approach the work of innovation and improvement.



INTEGRATION SNAPSHOT:

Building a Shared Understanding within a State Education Agency

Rebecca Kockler recalls how a simple group exercise led her to an important epiphany. Early in her tenure as an assistant superintendent at the Louisiana Department of Education, she joined her colleagues on the agency's executive team in summarizing the kinds of activities that students needed to engage in to develop their skills in English and math to high levels. Then the group summarized what teachers would have to do in their classrooms to make those activities happen. Finally, they considered how each of their areas of responsibility contributed to that instruction.

When they paused to take in the white board, Kockler was struck by a major disconnect: The way the state reported

assessment results back to teachers ran counter to the kind of English instruction that the group believed was needed in the classroom. At the time, Louisiana gave teachers a standard-by-standard report of what their students had demonstrated, and what they had not. Doing so, Kockler realized, encouraged teachers to teach standards in isolation. If their students had yet to master the skill of identifying the main idea in a text, teachers would focus on just that skill until they did.

But, as she explains, learning to read at a high level entails the development of multiple skills at the same time. The state's goal is for students to be able to read complex texts, and to be able to express their understandings of those texts in writing and speaking. That requires that students are continually engaged in the practice of reading complex texts and expressing their understandings—and not in trying to master one skill at a time. Hence the standard-by-standard reports the state had been providing, Kockler says, “went contrary to everything we believe about great English instruction.”

That exercise led the agency to retool its assessment reports, to present standards in related groups, and to clarify the complexity of the text for each item. It also instilled in the participants an appreciation for the value of having to articulate a set of expectations as a group.

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Challenges to Working Differently

While few would question the value of working in more integrative ways, many people would rightfully say there are strong forces that hinder our abilities to do so. Were this not the case the field might have succeeded in addressing the issue of fragmentation long ago. The problem of fragmentation in education was identified at least as far back as the 1990s, when the Consortium on Chicago School Research used the term “Christmas Tree School” to describe what happened in many of the city’s schools, where a jumble of unrelated programs had been adopted, often superficially, like so many shiny ornaments on a holiday tree.

One of the biggest barriers to change is culture. Most of today’s education leaders came up through a system in which initiatives were implemented as isolated endeavors. We learned to work in a world of programmatic compliance, and so programmatic compliance is what we reach for when we develop new strategies. Arguably, we are so immersed in fragmentation that we do not fully recognize all of its manifestations. Nor do we likely see the many ways in which bureaucratic inertia keeps us from creating coherence, and how that lack of coherence hinders improvement and works against the goal of educational improvement and equity.

But fragmentation is self-reinforcing in other ways. When people work in isolation—within schools, across agencies, or among community groups—it perpetuates the lack of a shared language that might otherwise facilitate productive collaboration. Moreover, it sustains the fragmentation of the knowledge base for making improvements, leading practitioners to over-rely on anecdotes from their own experience, as well as their own limited capacities to find and make sense of research. Isolation allows even the most pervasive performance issues to go unnoticed, and yet compartmentalization is one of our education system’s most defining features. Educators rarely get the chance to venture beyond their own school, or even to another classroom in their own school.

Indeed, perceived dysfunction can actively discourage individuals from seeking a broader view. Todd Kern, the founder of Corporation grantee 2Revolutions, points out that myopia can be a coping mechanism for people who need to get things accomplished. He says: “There’s this perverse incentive for rational actors, especially ones who are action- or outcomes-oriented, to kind of put their blinders on a little bit, and focus on the more narrowly defined version of the problem that they care about.”

Institutional structures also play a role in promoting ways of working that lead to misalignment of effort. Politics—in governing and in organizations—generally rewards “getting something done” (or undone) over learning from

experimentation. Rules for funding and approval often call for a narrow focus on programs, with a rigid emphasis on achieving some early conception of “what success would look like.” Along with public officials, the philanthropic community has contributed to fragmentation by incentivizing the implementation of initiatives in isolation, with too little regard for how well they mesh with the on-the-ground realities and other improvement strategies of a grantee, district, or charter management organization. As a result, the inefficiencies produced by competing incentives from different funders can constrain the impact such groups are able to achieve.

Institutional norms additionally encourage a mindset in which problems are defined only in terms of what the institution controls. The evidence is clear that what happens outside of schools has a profound influence on educational outcomes. Yet education leaders typically pursue improvement through changes that are entirely internal to the organizations they lead. A more effective unit of change would encompass more of what determines students’ lived experiences—in their communities and in the variety of agencies with which they may interact. But there are strong disincentives for sharing responsibility, especially when accountability for results is not similarly distributed. Authentic engagement means giving up control and predictability. When the stakes are high, however, we tend to hold the reins close.

With so much conspiring to keep the field in its current state of fragmentation, we cannot hope for significant change simply by acknowledging the need for it. Nor should we expect people to work differently by merely holding them accountable to a different set of expectations. Accomplishing the shift from fragmented ways of working to integrative ones will require capacity building. There must be some investment in developing the skills, mindsets, and conditions that allow people to work in ways that result in greater integration of effort, so that their efforts may yield more progress toward educational equity and improvement.

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Integrative Disciplines

Fortunately, there are disciplines we can learn from to build this capacity. There are practices and approaches that we may adopt to guide more productive ways of thinking and working. There are also structures we can build, and conditions that we might cultivate, that would make it more likely that people will think and work in ways that lead to greater coherence. These disciplines offer tools and techniques that can help with breaking down silos and building a deeper understanding of the experiences of the people who are most directly affected by our work.

Many such disciplines are at work in the projects of the Corporation's Integration Design Consortium (For descriptions of these projects, see pages 18-19). Grantees in the IDC have borrowed from them as they facilitate groups within state agencies, districts, and local communities in learning how to work in ways that result in greater integration of their efforts—and as a consequence, accelerated improvements in student outcomes. Among the existing strategies and practices that have most informed the work and thinking of the IDC are the following:

Collaborative Visioning. A shared appreciation of the same North Star allows people to keep moving in the same direction, even when they are in different places or need to make occasional deviations. In education we too often take this alignment for granted, when it must be forged. The goal is not merely to produce a vision statement, but to articulate the kinds of experiences that we believe that students need to have to set them up for future success. As those who have taken part in such visioning often attest, the value is less in any documents that might result than in the clarification that takes place in the minds of participants.

Human-Centered Design. This approach is premised on the idea that improving people's experience requires that you put yourself in their shoes. The assumption is that the people whose circumstances you want to change are experts on what they need, and so they should play a central role throughout the process of design—from the clarification of the problem to the testing of solutions. Another hallmark of human-centered design is the repeated iteration and refinement of solutions until they work effectively for their intended users, and in the contexts in which they are used.

Systems thinking. Developed by experts in organizational learning and management, systems thinking is a discipline for perceiving the important interdependencies at work among the different actors and forces that are producing a particular outcome. By identifying and articulating those interdependencies, a group engaged in systems thinking can generate hypotheses about how changes to one or more of those elements might produce better outcomes; the same analytical framework can then be used to interpret what actually happens when changes are made, thus testing those changes and the initial hypothesis.

An equity orientation. An equity orientation means more than recognizing the need to address longstanding differences in outcomes among different populations. It has at its very core the goal of an education system in which we can no longer predict such differences based on people's backgrounds. Viewing our work through an equity lens also means confronting the hard truths about the causes and consequences of inequity. We make more progress on the problem when we understand inequities as the result of the systematic exclusion of certain groups from the advantages enjoyed by others. Increasingly, new strategies are being developed to facilitate these challenging conversations, and to ensure that marginalized voices play a more prominent role in designing solutions.

Adult learning theories. Research tells us that adult learning differs from child learning in a number of important ways. To a greater degree than children, adults are more actively engaged in learning new knowledge and skills if they understand its relevance. Adults also come to their learning with an extensive repertoire of practices and ideas to relate to new understandings—new understandings that may challenge deeply rooted beliefs. Adult learning theories offer a set of principles for application in the process of managing change within organizations.

Collective Impact. A relatively recent model for affecting social change in a community, collective impact entails building an infrastructure to guide local resources toward achieving broadly embraced objectives. In this approach, a "backbone" organization owns responsibility for coordinating the efforts of multiple donors and working groups, and for tracking progress. By ensuring that many stakeholders have their "skin in the game" with regards to achieving a vision for improvement, collective action holds the promise of sustaining a strategy through the vicissitudes of politics and changes in leadership.

This is far from a comprehensive list of useful approaches (To learn more about these disciplines see: "**Resources for Working Integratively**," on page 21). There are many methods and tools that can help us learn to work in more integrative ways.⁷ An important body of work on educational leadership—in particular, the writings of Michael Fullan—is concerned with creating coherent cultures that better enable people to work toward common aims.^{8,9}

Many key aspects of the above strategies also are at work in the discipline of Improvement Science, the networked continuous improvement model promoted by the Carnegie Foundation for the Advancement of Teaching. Improvement Science emphasizes the importance of identifying the interdependencies within a system, the need to understand the experiences of the various people involved, the importance of common measures across the improvement enterprise, and the value of repeated testing of solutions in multiple contexts before going to scale. The approach also includes a collaborative structure, in the form of networks of organizations working on similar problems.

INTEGRATION SNAPSHOT:

Understanding the Experience of Being a New Teacher

Few roles are more challenging than that of a first-year teacher. Unfortunately, for many new teachers, the challenge is compounded by a blizzard of guidance that includes many mixed messages. That is what administrators at the Baltimore City Public Schools realized when they asked new teachers to help them understand the experience of being a novice educator in the district.¹⁰

With the goal of improving new teacher retention in the district, the Office of Teaching and Learning asked 20 first-year teachers in different schools across the city to keep a record of each time another adult entered their classrooms. For each interaction, the new teachers wrote down who was involved, what guidance was provided, and if it was helpful.

Many of the new teachers indicated that they had ten or more individuals giving them feedback and suggestions on a regular basis. These included supervisors, specialists, and mentors from their school, the district central office, and outside contractors. What is more, the guidance provided often conflicted.

Jarrold Bolte, a former manager in the district's Office of Teaching and Learning, recalls new teachers who told of getting suggestions for completely different methods for managing student behavior in the span of a few days. "Teachers were actually turning back to us and saying,

Many of the new teachers indicated that they had ten or more individuals giving them feedback and suggestions on a regular basis. What is more, the guidance provided often conflicted.

"I'm focusing more on the people coming into my classroom than on the actual students and the instruction I'm providing," says Bolte, now CEO of Improving Education, a Baltimore nonprofit.

One reason teachers received an overwhelming amount of guidance was that the district provided similar supports to almost all new teachers, even those who had completed alternative certification programs that provided their own ongoing support to their graduates. The district decided to no longer provide redundant mentoring to teachers who received the service from other organizations. Some of the cost savings was then put toward a new summer institute for new teachers in Baltimore to take part in before and after their first year.

Baltimore's process for understanding the teachers' perspective drew from Improvement Science, the problem-solving discipline born in the healthcare industry and applied to education in recent years by the Carnegie Foundation for the Advancement of Teaching.

At the time it tackled the problem of new teacher supports, Bolte's team at BCPS was part of a Carnegie Foundation-coordinated network of district and nonprofit leaders seeking to apply Improvement Science to issues related to teacher effectiveness. A key tenet of Improvement Science is to keep the work of problem-solving "user-centered." Had his team not gone through the initial process of understanding the experience of new teachers in the district, Bolte says they likely would have created yet another mechanism to provide guidance to new teachers—which could have made the situation worse.

New Teachers in Baltimore Were Bombarded with Guidance

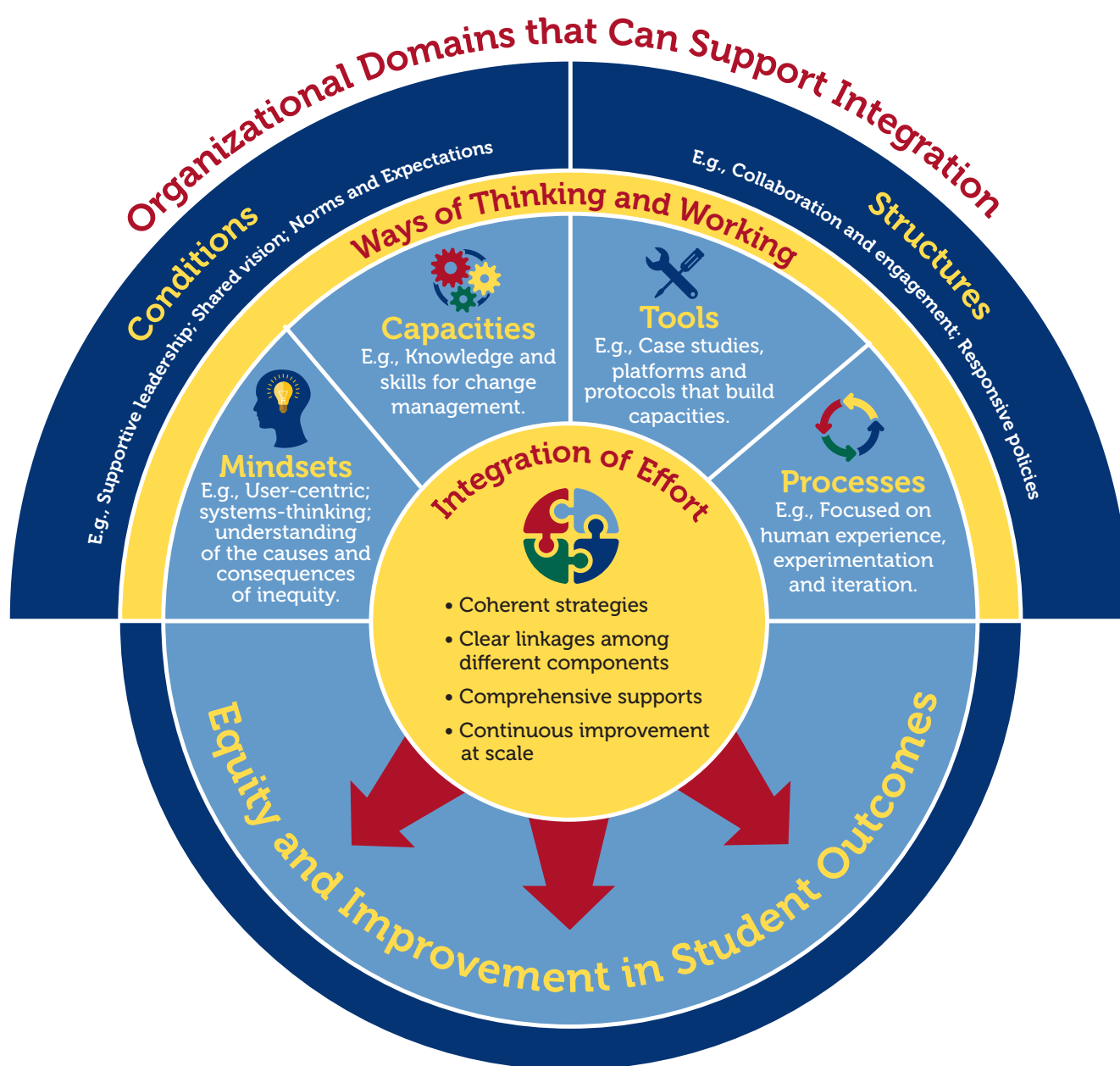


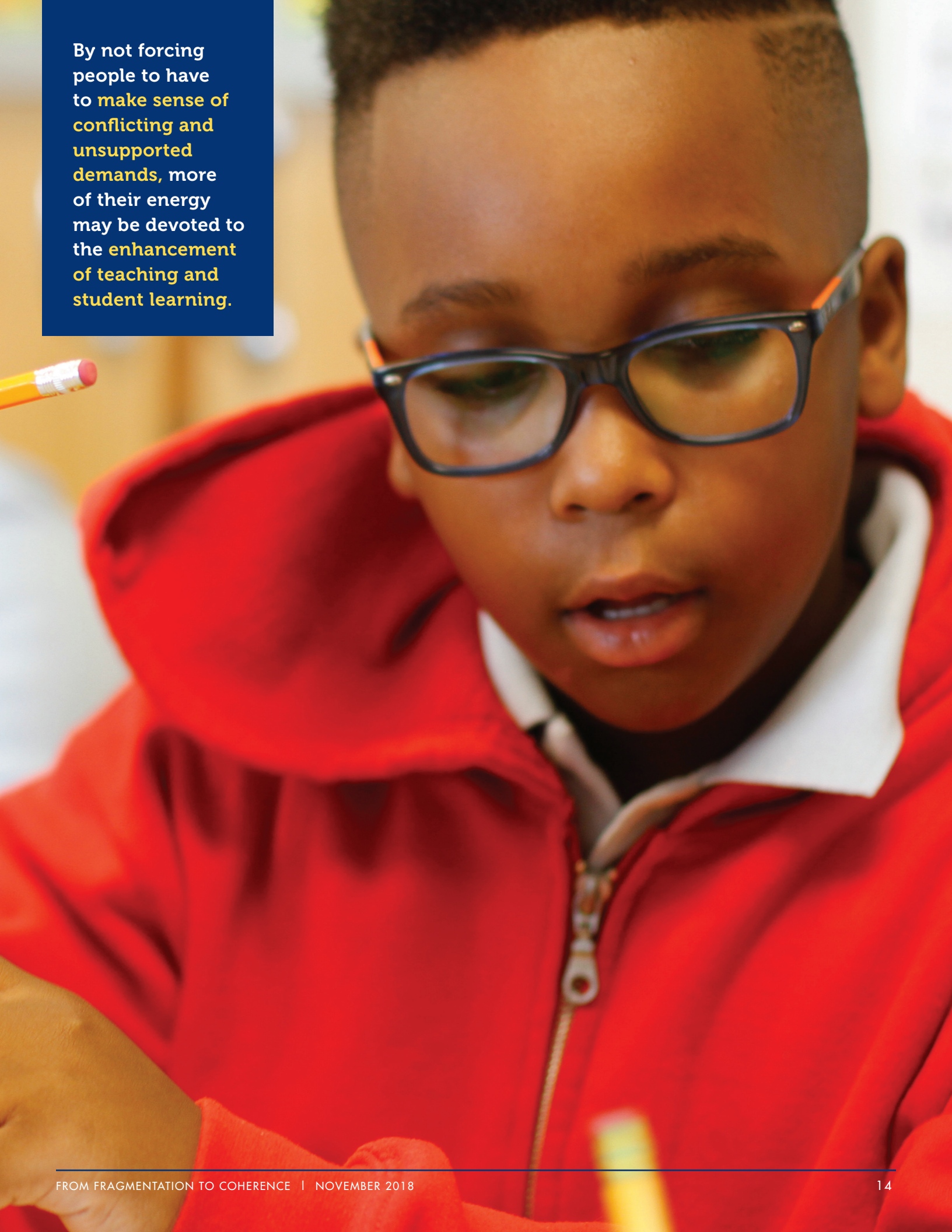
Our purpose in naming examples of instructive disciplines is not to suggest an exclusive set of options from which to choose in learning to work more integratively. It would be counterproductive—and indeed ironic—to promote a limited number of ways to address a problem that produces solutions that are ill-fitted for the contexts in which they are implemented. Rather, our aim is to point out that we need not start from scratch. There are many useful and established strategies to put toward the task of working in ways that produce greater coherence, and less fragmentation.

Moreover, there are multiple entry points within an organization for beginning the process of changing how the people within it operate. As shown in the figure below, there are several

organizational domains that can support greater integration of effort. These domains are mutually re-enforcing. Changing one holds the potential for disrupting the others. We need not pull all levers simultaneously to begin to make progress.

Different conditions may encourage new habits. Pockets of success may prompt new institutional structures. The spark could be as modest as the agreement by a small team to look for ways to work differently as they address a particular challenge before them (e.g., by applying some of the techniques of human-centered design). Or it might be a leader's decision to seek out ways to create a tone and set of expectations that encourages cross-team collaboration and repeated field testing.



A close-up photograph of a young boy with dark skin and short hair, wearing black-rimmed glasses and a bright red zip-up hoodie. He is looking down with a focused expression at a yellow pencil with a pink eraser that is partially visible on the left side of the frame. The background is blurred, suggesting a classroom setting.

By not forcing people to have to **make sense of conflicting and unsupported demands**, more of their energy may be devoted to the **enhancement of teaching and student learning**.



INTEGRATION SNAPSHOT: Integrating Professional Learning and Curriculum Guidance

A common complaint about teacher professional development is that it too often lacks relevance to what teachers need to accomplish, or to the contexts in which they teach. Teachers' primary challenge is to bring the curriculum they teach to life for their particular students. But much of the in-service training teachers receive is in the form of off-site workshops on generic instructional issues.

Through thoughtful design, the District of Columbia Public Schools has sought to avoid this fragmentation. In DCPS, the main professional learning initiative for teachers is designed specifically to support teachers in implementing the district's curriculum in the contexts of their own classrooms.

Called LEAP (for LEarning together to Advance our Practice), the initiative provides teachers with opportunities to deepen their content knowledge and strengthen the standards-aligned teaching practices most important for their particular content area, which ultimately supports teachers' ability to use the district's curriculum. At each school, teachers take part in 90 minutes of weekly seminars led by a LEAP facilitator based in their building, who also provides them with one-on-one feedback based on regular classroom visits.

"It's good to have a curriculum because you need a path for teachers to have," he says. "But you also need to teach teachers how to actually travel that path, and how to deal with the obstacles that come up."

Chris Miller, a LEAP manager at the district's central office, says LEAP complements the district's curriculum by providing guidance on handling the hard-to-predict situations that arise in the classroom when students with varied needs engage with the curriculum's learning activities.

"It's good to have a curriculum because you need a path for teachers to have," he says. "But you also need to teach teachers how to actually travel that path, and how to deal with the obstacles that come up."

To understand how LEAP works, consider this LEAP seminar observed at the district's Orr Elementary School (recently renamed Lawrence E. Boone Elementary): The school's LEAP facilitator for English Language Arts, Jaimee Trahan, had teachers review samples of their students' first and second drafts of essays, along with the written feedback the teachers had given students on their first drafts. The teachers were asked to reflect on the extent to which their feedback had prompted the students to improve their writing.

The exercise led a number of Orr's teachers to clarify expectations for their students. As a result of the seminar, one fifth grade teacher, Jamila Thompson, worked with her students that same week to augment a checklist they used for peer editing, to emphasize the importance of explaining how the details in an essay support its thesis. Thompson says her "ah-ha moment" in the seminar came when a colleague noted that an essay could meet all the criteria on the previous checklist, without necessarily saying *why* any details in the essay were relevant. "I had not thought about that until she pointed it out," she says.

The example from the seminar illustrates how LEAP and the district's curriculum work in tandem. A major objective in the Common Core State Standards, which DCPS has adopted, is for students to be able to "Write arguments to support claims using valid reasoning and relevant and sufficient evidence."

The lessons in the district's ELA curriculum include numerous opportunities for students to practice developing such arguments throughout the school year; LEAP, meanwhile, created the structure in which teachers could closely examine the extent to which their teaching led students to produce writing of sufficient quality, as well as a structure in which to plan improvements to that teaching.

How DCPS designed LEAP is an important backstory. The initiative was not the result of a process in which district leaders saw a need and quickly implemented their best guess for how to address it. Rather, LEAP emerged from lessons learned through a series of small scale trials in the district. During this trial phase, some schools experimented with data teams (in which teachers met regularly to analyze student data), some sent teacher leaders off-site for regular seminars as part of a fellowship type program, and some schools tried still other models for professional learning.

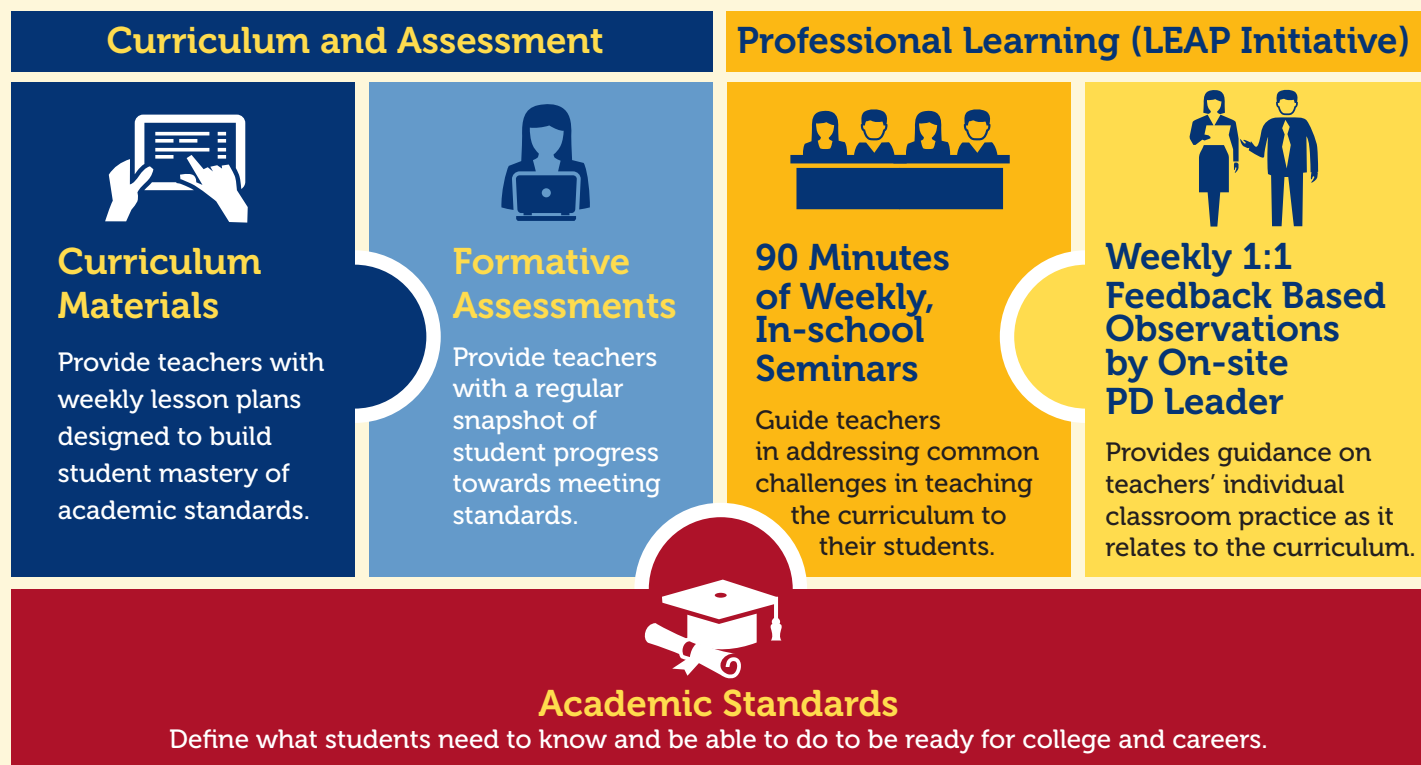
To learn from these experiments, district leaders spent considerable time at the pilot schools, observing the models in action and speaking with the teachers who participated. Although they also collected survey and performance data on the pilots, it was this "legwork" that provided the most useful insights, says Scott Thompson, the district's former chief of innovation and design. "We have never found a replacement for doing a lot of visits to schools and sitting in on sessions." What they learned went into LEAP's design.

"We have never found a replacement for doing a lot of visits to schools and sitting in on sessions."

Putting that design into action meant working across the typical silos that exist within many district central offices. District experts responsible for developing curriculum guidance, for example, were enlisted to help build an extended training program for LEAP facilitators. In doing so, DCPS academic experts and leaders of professional learning worked together to create a detailed LEAP curriculum for facilitators in each subject area, to guide them as they supported teachers in implementing the district's curriculum for student learning.

Miller, the LEAP manager, says that while an instructional support system needs to have all the right pieces, those pieces also need to work together to advance the goal of student learning. Says Miller: "If our end goal is for kids to have rigorous instruction that gets them access to college, then you have to have a curriculum that's designed to get there. But then you also have to have ways to help teachers to be able to teach that well."

Integrated Supports for Instructional Improvement



A Learning Agenda on Creating Coherence: The Integration Design Consortium

Isolated attempts at integration may move things in the right direction in places. But more than idiosyncratic commitments are needed for more productive ways of working to become widespread in the field. The countervailing currents are too strong for singular initiatives to amount to large-scale change. Moreover, we lack a sufficient body of knowledge to support the transition. We can point to some illustrative examples and particular strategies that may help in reducing fragmentation. But these are far from adding up to a coherent theory and set of practices for making the shift to more integrative ways of working. For that to emerge we need a focused learning agenda.

A useful body of knowledge in this area will do more than identify what makes integration more or less likely to occur. The field of education also must understand how organizations are transformed from ones that produce fragmentation into ones that promote greater coherence, and how that coherence enables accelerated improvement and greater equity. Education leaders need to know what it looks like when different levels of the system—schools, districts, and states—learn to work more integratively, and what the benefits of doing so look like for practitioners, students, and families.

The Corporation's Integration Design Consortium, launched in 2017, is one attempt to create that knowledge base.

As a grant-making exercise, the IDC is unusual in that it did not set out to develop or scale a particular set of interventions for improving educational outcomes. This was not a case of stipulating that resources be used, for instance, for expanding after-school programs or improving reading instruction. Rather, the grantees were charged with helping the organizations and communities they work with to tackle whatever challenges are before them in more integrative ways, and in doing so

achieve better outcomes. Accomplishing that may entail the implementation of specific interventions. But the value proposition is that by learning to work differently those interventions will wind up being better integrated for the people who implement and experience them, and ultimately allow for faster progress towards the goal of advancing educational equity.

Of the five IDC projects, some focus on state agencies and others on local actors. Each is designed to build the capacity to work in ways that result in better integrated and so more effective innovations and improvement efforts. All entail some form of applied learning, in which groups study new ways of working, and adapt and apply those methods as they address problems of practice they have prioritized. As described in the boxes on the next two pages, the projects borrow from many existing approaches to organizational learning and development (e.g., systems thinking and human-centered design). Common threads include attempts to break down the barriers that typically exist between teams whose work affects each other, along with approaches for understanding how people experience the problems to be solved. Each project will continue into 2019.

Throughout this work, consortium partners are sharing with each other what they are learning from their projects about the kind of organizational transformation they hope to see. An umbrella partner, the Business Innovation Factory, has been engaged to facilitate the sharing of lessons learned, both within the Consortium, and beyond. Our hope is to learn more about the mindsets and ways of working that lead to greater integration of effort, as well as the conditions and structures that promote them. To assist other organizations in working in more integrative ways, the IDC will produce descriptions of what doing so looks like, along with tools and other resources to help put theories into action.

We will not be surprised if, as the initiative continues, the experience leads us to revise some of our current assumptions. But in the process we expect to gain valuable insights that may inform a better understanding of the challenge and how to address it.



Our hope is to learn more about the mindsets and ways of working that lead to **greater integration of effort**, as well as the **conditions and structures that promote them**.



A Fellowship Program for State and Local Leaders

The “Coherence Lab Fellowship” is an 18-month learning experience for state and local leaders developed by the policy, strategy, and implementation support organization Education First, in partnership with the Aspen Institute Education and Society Program, a policy and research organization. The project brings together teams of leaders from state education agencies, and from districts within those states, to build integrated reform strategies to improve supports for educators and outcomes for students. A core feature of the experience is rapid cycles of learning, practice, and reflection as teams address pressing problems of practice. Other elements include frameworks and assessments to guide planning, as well as a curriculum for participants that emphasizes adult learning and designing for equity.

Launched in 2018, the fellowship’s first cohort is comprised of teams from **Ohio, Nevada, and Wisconsin**. In all, the cohort includes 48 state and local leaders, who take part in both in-person and virtual learning experiences. The project aims to equip these leaders with the mindsets, skills, tools and processes to address systemic barriers to coherence. The fellowship emphasizes three core elements: 1) building focus and coordination within and across agencies through purposeful collaboration; 2) prioritizing inclusivity and authentic engagement of educators in problem-solving and the design of new ideas; and 3) motivating behavior change at scale by tapping networks, experts, and leaders. Fellows are meant to practice and apply these elements to their problem of practice and translate them into their day-to-day processes with the aim of supporting more leaders to work towards integrating agency efforts.



REIMAGINING SOCIAL CHANGE



Advancing Equitable Educational Outcomes with Collective Impact and Systems Thinking

An IDC project to support locally led improvement efforts is headed up by FSG, a consulting firm that helps organizations improve the effectiveness of their endeavors to promote positive social change. FSG is known for advancing the social change strategy called “collective impact”, in which local residents and professionals from different sectors take on responsibility for sustaining a community-based improvement effort with the support of a backbone organization. Through its IDC project, FSG has combined collective impact with two other orientations: systems thinking, the discipline for understanding the many interdependencies within a system; and an equity perspective, which seeks to understand and address the power imbalances—especially those that break along racial lines—that contribute to existing inequities in outcomes.

To put the combination of these ideas into action, FSG is working with leaders in two medium-sized communities: **Staten Island, NY, and Oceanside, CA**. In each, consultants are guiding local leaders through a process that includes: an assessment of community needs; leadership development focused on collective impact, systems thinking, and developing an equity perspective; and community engagement. Participants will receive coaching throughout the year-long process of strengthening a backbone organization, identifying community priorities, and establishing collaborative structures for addressing them. Partnering with FSG in the project are the **Systems Leadership Institute** and **PolicyLink**, a national nonprofit and leader in helping communities understand and address issues of equity.



Building Local Capacity to Transform Toward the Future

Another IDC project to support change at the local level is led by 2Revolutions, a national education design lab that helps schools, districts, and the communities they serve to build new learning models and systems. The organization’s approach is to facilitate diverse stakeholders to collectively envision the kind of teaching and learning young people need to prepare them for the future—including a close examination of the knowledge, skills,

and dispositions required to succeed in the rapidly-evolving global economy. 2Revolutions used a competitive application process to choose a community partner for its IDC project, ultimately selecting Virginia Beach, VA.

Through an extended partnership, the organization has formed a local advisory group for the project, and worked with the **Virginia Beach City Public Schools** to lead a series of community-based visioning sessions in different geographic regions of the district. This process helped stakeholders identify key systemic barriers that might keep the community’s vision from being realized, and to prioritize which challenges to address. Next, 2Revolutions will lead participating stakeholders through an immersive, year-long design process to develop, test, and refine a set of potential strategies for achieving the community’s vision.



Empowering Teachers with Design Thinking

An IDC project that puts teachers at the center of the innovation process is being spearheaded by The Teachers Guild. The Guild is a professional learning community for teachers to think and act like designers, so they can meet the complex needs of students and prepare them to become the problem solvers of tomorrow. Through community, coaching, and tools, educators create change for and from their classrooms by understanding how students learn best, designing learner-centered solutions, and creating a repository of K-12 innovations. The Teachers Guild is a nonprofit initiative of Plussed at Riverdale Country School, incubated by IDEO's Design for Learning Studio.

Through its work with the IDC, The Teachers Guild has developed two new initiatives. One is the establishment of Guild chapters in three school districts: in **Bronx, NY**; **Gwinnett County, GA**; and **Vista, CA**. These chapters are developing communities of teachers who partner with their principals and district leaders to advance district improvement efforts by continuously improving their practice and creating solutions for their students and schools. The second new initiative is a national fellowship that provides teachers with a year-long, cohort-driven learning experience focused on applying design thinking to their own classrooms and schools. This "Integrator Fellowship" launched in 2017 with an initial group of 10 fellows. Both initiatives are aligned to key tenets of adult and child learning theories.



Coordinating across Agencies to Create Continuity of Services

Bellwether Education Partners is leading an IDC project aimed at bringing greater continuity to the services that public agencies provide to youth who experience destabilizing circumstances, like homelessness, foster care placement, or incarceration. The nonprofit policy, strategy, and research organization based its project on the idea that the challenges faced by disadvantaged young people are compounded by the fact that the responsibility for serving them is typically spread out among too many people in too many agencies, and that those adults rarely have access to all the necessary information about the students' needs. This fragmentation in services leads to gaps in care when needs go unnoticed and unaddressed. The lack of coordination inadvertently creates additional and unnecessary conflicts for the very people whose circumstances the services are meant to improve.

As part of the IDC, Bellwether is working with education agencies at different levels of government to create plans for better coordinating services for young people who have experienced disruptions to their education pathways. The participants in the project are the **Utah State Board of Education**, the **El Dorado County Office of Education in California**, and the **Orleans Parish School Board** in Louisiana. In each, Bellwether is supporting these education agencies, their peer social service and law enforcement agencies, and their local community partners to develop plans to improve both the continuity of people and the continuity of information for young people as they are served across multiple agencies and community or faith organizations. The goal is to ensure that young people come into contact with fewer, more consistent adults over time and that those adults always have the information that they need to make good decisions. Each agency's plan will also address accountability, ensuring that there is an identified person or office with both the authority to act and the responsibility for youth outcomes.



Consortium partners are sharing with each other what they are learning from their projects about the kind of kind of transformation they hope to see. An umbrella partner, the **Business Innovation Factory**, has been engaged to facilitate this sharing of lessons learned.

To learn more about the Integration Design Consortium,
go to: www.integration-design-consortium.org



CONCLUSION: An Invitation to Learn and Act

We recognize that the Corporation is just one of many organizations pursuing strategies that may alleviate the problem of fragmentation. The upsurge of interest in the field in networked improvement communities has the potential of developing more solutions that mesh with the contexts in which they are employed. Recent attempts to forge tighter relationships among researchers and practitioners may yield more knowledge that could inform more effective implementation. These trends may not all have emerged in direct response to the problem of fragmentation, but they could contribute much to reducing it.

That so many efforts are converging is likely no coincidence. There is a sense among many education leaders and innovators in the field that many of the big bets made in the past two decades produced more conflict than necessary, and less impact than expected. Even where fragmentation is not named as a culprit, there is the feeling that untested assumptions and working in isolation played a significant role in limiting the success of reform. Avoiding a repeat of the same scenario in the years ahead is a top priority for many organizations that continue to work in support of educational improvement. Our collective impact will be greater if we learn from each other as we tackle the problem in different ways.

We hope these efforts may inspire more people, at all levels of the education system, to seek out and experiment with more integrative ways of working. We hope they will see more value in testing assumptions, in allowing for adjustments when experience shows the need, and in coordinating their efforts so as to avoid creating conflict for those whose work they support. By learning how to put the human experience more at the center of our efforts to innovate and improve we can minimize fragmentation, so that more of our energy goes toward providing all students with the education they need for their future success.

For those inspired to experiment with new ways of thinking and working, we encourage you to connect with others who are doing the same. Share your questions, challenges, and successes. Share your stories about going from fragmentation to coherence. The Corporation welcomes input from readers on the ideas in this document, and on how to put those ideas into action. Tell us what tools and strategies you find useful. Tell us how you have made progress. We suspect that much of the knowledge required to support the field in creating coherence already exists. But that knowledge has yet to be pulled together in a sufficiently useful way. We invite you to be part of the process of doing so.

Our other hope is that readers will make the case to others that working more integratively should be a top priority in the field of education. As a nation we are unlikely to achieve our objectives for equity and student learning if we continue to create fragmentation for educators, students, and families. We need more people to understand the causes and consequences of fragmentation, and to see how they can play a part in alleviating it. We must educate each other about what it takes to create solutions that actually work in the contexts in which they are implemented.

Especially for the most disadvantaged young people, we need to make the most of their time in our education system. That can only happen if we make it a priority to learn to work differently.

Our collective impact will be greater if we **learn from each other as we tackle the problem in different ways.**

**We welcome questions and comments on the ideas in this report.
Email them to: education@carnegie.org.**

Resources for Working Integratively

Below are readings, tools, and other resources to support groups in understanding and learning how to apply some of the integrative disciplines highlighted in this paper, many of which have been adapted for use in the five projects of the Integration Design Consortium.

COLLABORATIVE VISIONING

“Appreciative Inquiry” is a collaborative planning approach that builds from a shared understanding of past successes and what it would mean for a system to be working at its best. FSG has developed a tool to guide groups of various sizes in working through the approach to produce implementation plans based on a shared vision of goals: **“A Guide to Appreciative Inquiry”** (www.fsg.org/tools-and-resources/guide-appreciative-inquiry).

HUMAN-CENTERED DESIGN

IDEO, a leading design firm and partner of IDC-grantee the Teachers Guild, unpacks the key components of human-centered design in the book, **The Field Guide to Human-Centered Design** (www.designkit.org/resources/1). IDEO also worked with the Teachers Guild to develop a number of resources on using human-centered design to improve education, including **The Design Thinking for Educators Toolkit** (www.teachersguild.org/approach).

Bellwether Education Partners, another grantee in the IDC, has created a website with guidance on using human-centered design for more effective policy development in education, called **Design Methods for Education Policy** (www.designfordpolicy.org). Bellwether makes the case for adopting a more human-centered approach toward policymaking in education in the paper, **“Creating More Effective, Efficient, and Equitable Education Policies with Human-Centered Design.”** (www.bellwethereducation.org/publication/creating-more-effective-efficient-and-equitable-education-policies-human-centered-design).

SYSTEMS THINKING

Many books have been written to explain what it means to see and effectively work with the various interdependencies at play within the systems you want to improve, including Peter Senge’s classic, **The Fifth Discipline: The Art and Practice of the Learning Organization**. A more recent book on the application of systems thinking to address social problems is David Peter Stroh’s **Systems Thinking for Social Change: A Practical Guide to Solving Complex Problems, Avoiding Unintended Consequences, and Achieving Lasting Results**. Numerous articles, guides, and case studies on systems thinking may be found on the website, **The Systems Thinker** (www.thesystemsthinker.com).

COLLECTIVE IMPACT

A number of articles on the thinking behind, and practice of, Collective Impact have been written by the experts at FSG. Among them is the seminal piece, **“Collective Impact,”** in the *Stanford Social Innovation Review* (www.ssiir.org/articles/entry/collective_impact). A later article, published in the same journal, offers more specifics on the elements of the approach, **“Channeling Change: Making Collective Impact Work”** (www.fsg.org/publications/channeling-change).

EQUITY ORIENTATION

Leaders of the Equity Design Collaborative discuss key principles for addressing social inequities in their blog post, **“Racism and Inequity are Products of Design: They Can be Redesigned”** (www.medium.com/equity-design/racism-and-inequity-are-products-of-design-they-can-be-redesigned-12188363cc6a). The Aspen Institute defines several core concepts related to equity in a two-page **“Glossary for Understanding the Dismantling Structural Racism/Promoting Racial Equity Analysis”** (www.assets.aspeninstitute.org/content/uploads/files/content/docs/rcc/RCC-Structural-Racism-Glossary.pdf).

Other papers and tools for understanding inequity and how to address it may be found on the website of PolicyLink, a national nonprofit with a specific focus on equity, and a partner in the IDC: www.PolicyLink.org. One such tool is GEAR, for **Getting Equity Advocacy Results**, a resource to guide organizations in the identification of root causes, inclusive problem-solving, and measuring progress toward equity. PolicyLink leaders explain the importance of adopting an equity orientation when pursuing the strategy of Collective Impact in the article, **“Equity: The Soul of Collective Impact”** (www.policylink.org/sites/default/files/Collective_Impact_10-21-15f.pdf).

ADULT LEARNING THEORY

A concise overview of adult learning theories is provided in a blog post from the eLearning design firm Aura Interactiva, **“Adult Learning Theories Every Instructional Designer Must Know”** (www.shiftelearning.com/blog/adult-learning-theories-instructional-design). Some of the most important works on adult learning theory were written by Malcolm Knowles, who referred to the discipline as “andragogy” (to distinguish it from “pedagogy,” the study of how children learn). Knowles provides numerous real-world examples of the theory’s key ideas in the book, **Andragogy in Action: Applying Modern Principles of Adult Learning**. The challenge of bringing innovations to scale—and the role adult learning in doing so while maintaining quality—is explained in the book, **Scaling Up Excellence: Getting to More Without Settling for Less**, by Robert Sutton and Huggy Rao.

IMPROVEMENT SCIENCE

The key principles of Improvement Science, and their application for continuous improvement in education, are explained in the book, **Learning to Improve: How America’s Schools Can Get Better at Getting Better**. Numerous other resources on Improvement Science may be found on the website of the Carnegie Foundation for the Advancement of Teaching (www.carnegiefoundation.org).

COHERENCE

Two IDC partners—Education First and the Aspen Institute Education and Society Program—examine the causes, consequences, and potential remedies of fragmentation as it relates to policy implementation in the paper, **“Addressing Fragmentation in Public Education: The Coherence Lab Fellowship.”** (That paper, and other related resources, may be found at: <https://education-first.com/clf/home/>.)

Endnotes

- 1 See RAND Corporation's "Creating a Coherent System to Support Instruction Aligned with State Standards: Promising Practices of the Louisiana Department of Education", 2016 (www.rand.org/content/dam/rand/pubs/research_reports/RR1600/RR1613/RAND_RR1613.pdf).
- 2 See Robert Pondiscio's "Louisiana Threads the Needle on Ed Reform: Launching a coherent curriculum in a local-control state". *Education Next*, Fall 2017 (www.educationnext.org/louisiana-threads-the-needle-ed-reform-launching-coherent-curriculum-local-control/).
- 3 Kennedy, Mary. *Inside Teaching: How Classroom Life Undermines Reform*. Harvard University Press. 2005.
- 4 See *Learning to Improve: How America's Schools Can Get Better at Getting Better*, by Anthony S. Bryk, et al. Harvard University Press. Cambridge, Mass. 2015.
- 5 Cynthia E. Colburn argues that "scaling up" in education too often is conceived as merely increasing the number of places where a reform is implemented. She presents a framework that instead balances the goals of depth, sustainability, spread, and shift in ownership in "Rethinking Scale: Moving Beyond Numbers to Deep and Lasting Change". *Educational Researcher*. August/September. 2003.
- 6 Charles Payne deftly unpacks the vicious cycle of improvement efforts and disappointing results in his book, *So Much Reform, So Little Change: The Persistence of Failure in Urban Schools*. Harvard Education Press. 2008.
- 7 A recent special volume of the journal *Quality Assurance in Education* examines several continuous improvement models relevant to the challenge of achieving greater integration of effort, including Design-Based Implementation Research, Positive Deviance, and Networked Improvement Communities. See *Quality Assurance in Education*, Vol. 25, Issue 1. 2017.
- 8 For more on Fullan's insights, see the book *Coherence: The Right Drivers for Action in Schools, Districts, and Systems*, by Michael Fullan and Joanne Quinn. Corwin. 2015.
- 9 An in-depth exploration of attempts to create coherence while improving math instruction at the district level is presented in the book, *Systems for Instructional Improvement: Creating Coherence from the Classroom to the District Office*, by Paul Cobb, Kara Jackson, Erin Henrick, Thomas M. Smith, and Michael Sorum. Harvard Education Press. 2018.
- 10 This story from Baltimore was first told in the book *Learning to Improve*. See endnote #4.



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