

## Using Networked Improvement Communities to Accelerate Improvement: Lessons from the Gateway to College Success Network

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**The Gateway to College Success Network, a networked improvement community, entered its third year in 2018-2019.** In this Insights brief we share 10 essential learnings that have emerged from our first two years of work in operationalizing the networked improvement community approach as a strategy for school improvement. As an organization committed to learning with our partners, we also share some of the adaptations we are making to our network and our ideas about the future directions of this work.

We hope that this brief provides helpful learnings and recommendations for practitioners—both within and outside school districts—who are interested in

joining the growing number of educators and organizations using networked improvement communities to accelerate school improvement. In the following pages, we aim to add our learnings to the conversation and to demonstrate how we are working to make the most of this promising approach. We first provide a brief overview of the networked improvement community model; we then describe the Gateway to College Success Network in more detail and share our 10 key learnings.

### Networked Improvement Communities: A Promising Approach

As an organization, Mass Insight Education & Research has spent 10 years working in the field with low-performing schools. From that experience, we know that education leaders have not been idle with respect to efforts to improve schools—quite the contrary. Most districts and schools have been very active in the “school improvement” effort and many have taken direct actions meant to improve student learning and outcomes, such as adopting new initiatives and providing specific professional development—often supported by state policies and funding—to their leaders and teachers. Yet too often these efforts have not led to significant, sustainable improvement in teachers’ instruction and students’ performance. Why?

While there are many reasons, three stand out to us as we reflect on our experiences with the Gateway Network in particular. First, while district and school leaders often accurately identify problems that must

#### 10 Key Learnings

1. Having a student outcome goal shared among all network schools is crucial.
2. Build in time at the start of network development to collect and examine data on current practices that informs development of the shared network aim and instructional vision.
3. Network members must have a deep, shared understanding of high-quality instruction.
4. Leverage the expertise within your network—and recognize when you need external support.
5. Ensure that all parties are clear on what participation in the network involves, including expectations and data collection efforts.
6. Explicitly build teacher and school staff capacity to engage in the work of improvement science.
7. Engaging teachers in the discipline of improvement science supports meaningful collaboration and increases teachers' ownership of improvement efforts.
8. Understand that creating a successful network involves identifying systemic barriers to collaboration within and across schools and taking the time to address such issues.
9. Strong school and district leadership is needed to successfully engage in improvement work.
10. Networks need to develop clear measures and indicators that help participants see the connections between inputs and outcomes at multiple levels.

be addressed, they do not always accurately identify the root causes of these problems; as a result, the solutions they implement frequently do not result in lasting, positive change. Second, even in cases where individual teachers or schools have made real progress, districts are not currently structured to facilitate sharing these successes in real time; learning and progress happen in silos, so small-scale improvements do not have opportunities to spread. Third, while the “school improvement” movement has been heavy on mandates that schools do better, it has been light on guidance about how to do that. In our experience—even in schools that have a sense of urgency about improvement, accurately diagnose the root causes of low performance, and have developed thoughtful improvement plans with a reasonable number of goals—that *how* can be elusive. Clearly, teachers and school and district leaders need better tools to help with the daily work of getting better.

Networked improvement communities (NICs) are one way to provide such new tools.<sup>1</sup> NICs are a “form of educational R&D [that] joins together the discipline of improvement science with the ... power of networks to solve common problems” (Bryk et al., 2015, p. xiv). In other words, NICs are about both how schools improve and how improvements can be scaled across multiple institutions; they represent a new way to think about implementation and improvement in educational settings. NICs leverage two key structures to accelerate learning and results:

- Improvement science, an applied science that emphasizes innovation, rapid-cycle testing, and scaling successful practices through disciplined, rigorous inquiry in order to generate learning about what changes, in what contexts, produce improvements.
- Networked learning, which is a process of

developing and maintaining connections with people and information and communicating in such a way so as to support one another’s learning.

A networked improvement community brings multiple individuals and organizations together to work collaboratively on a shared problem—such as poor student achievement in math. In a NIC, network members use the tools of improvement science to break large problems and potential solutions into small, discrete parts that can be rigorously tested and evaluated. Once promising solutions are identified, the NIC structure also makes it possible to rapidly share learning, scale emerging best practices, and further refine innovations. Over time, a NIC can therefore solve a large problem through the accumulation of learning from many small-scale tests about the many facets of that problem. For example, in a school where students performed poorly on open-response math questions, teachers instituted a series of PDSA cycles that sought to address component parts of this problem: they tested new strategies for grouping students during collaborative work time; for addressing students’ lack of confidence when faced with open-response questions; and for working through each step of problem solving, from identifying the question being asked to ensuring answers were properly labeled with the relevant unit. Over time, students increased their ability to articulate their thinking verbally and in writing, and scores on open-response questions increased. School staff shared their learning and the tools they developed to support students—such as graphic organizers—to accelerate learning for other schools in the NIC. (For more detailed descriptions of NICs, see Bryk et al., 2015.)

We believe that NICs are a promising approach to school improvement because they provide a framework for improvement that addresses root causes, spreads innovation, and breaks improvement mandates into discrete, manageable steps.<sup>2</sup> Together, improvement science and networked learning go beyond goal-setting and strategic planning to focus on the day-to-day work required of teachers, instructional leaders, and administrators—the *how* behind the *what* of school improvement.

Over the past two years, Mass Insight has been working with five partner districts across Massachusetts to create aligned, rigorous instruction, using the NIC approach as a vehicle. We have learned much about what it takes to put theory into action, particularly in the context of a multi-district partnership. In the spirit of improvement science, we are sharing our learning now with two primary aims:

- To encourage other practitioners interested in using networks for school improvement by demonstrating key strengths of the approach.
- To acknowledge challenges to implementation, particularly in a multi-district network, and to suggest pathways for overcoming those challenges.

### **The Gateway to College Success Network: Building a Networked Improvement Community**

In early 2016, Mass Insight convened a small group of leaders from districts with which we were already partnering through our AP STEM & English program<sup>3</sup> to discuss what it would take to continue to expand the pool of students ready to access and succeed in advanced courses to increase college readiness. In our initial conversation, district leaders identified a variety of challenges to improving student achievement—the need for strong leadership

at the school level, teacher turnover, and resource constraints. But a key observation that emerged from this conversation was that while superintendents believed aligned curricula were in place for students in grades 6-12 in their districts, they observed that teachers' instruction was *not* aligned. This observation sowed the seeds for the Gateway to College Success Network.

Also in 2016, Mass Insight became aware of an opportunity to convene a network of districts and schools committed to working together on a common issue. We successfully pursued funding to support a network focused on two problems of practice<sup>4</sup>:

1. Aligning teacher and classroom instruction both vertically and horizontally in grades 6-12 within and across schools so that all teachers are providing rigorous instruction and personalized learning opportunities that enable students to have access to college-level courses while in high school and graduate prepared for college and career.
2. Removing systemic barriers to the time and flexibility required to align instruction within schools and across schools, so that teachers have the time and opportunity required to form the communities of practice needed to provide rigorous and personalized instruction.

We designed the Gateway Network to provide multiple opportunities for stakeholders to meet with each other and share learnings and data from their efforts to address the problems of practice both within and across districts.

### **The Gateway to College Success Network: Structures, Supports, and Tools**

Structures were put in place to ensure that each

district, including school-level administrators and teachers, was actively involved in the work. The problem of practice provided the umbrella for our work and each district was encouraged to customize their work in their district, to address local need and context.

Network Structures. Formally, the GCS Network involved two layers:

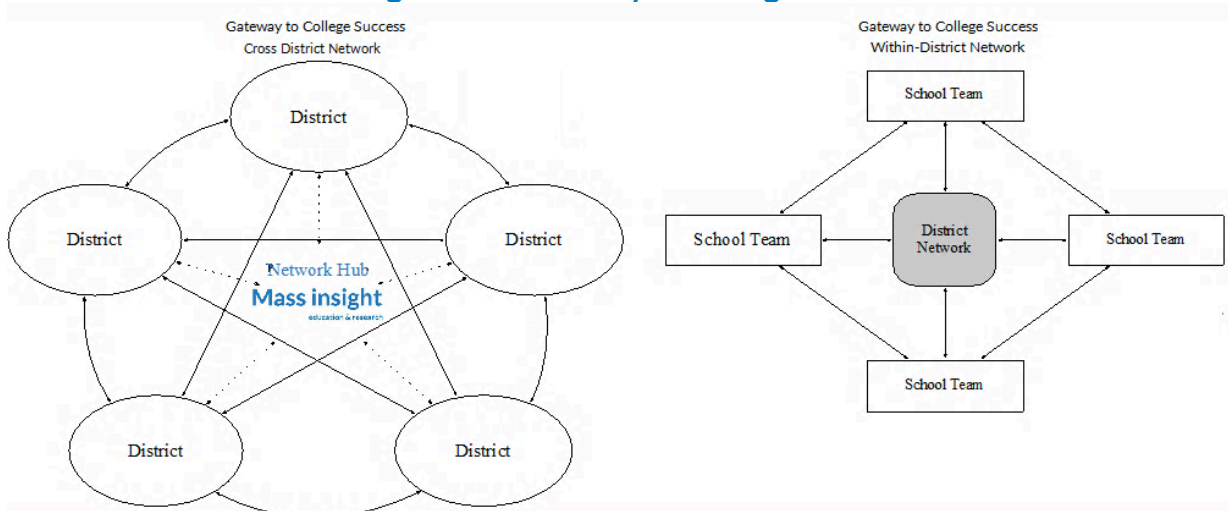
- A cross-district network that included superintendents, district leaders, principals, and teacher representatives from each district and participating school; and
- Within-district networks of participating school teams comprised of principals, administrators, coaches, and 2-3 teachers per school. The within-district teams generally included staff from 1-2 high schools and 2-3 middle schools in the district.<sup>5</sup>

Mass Insight served as the hub of the cross-district network and convener of each within-district network.<sup>6</sup> The cross-district network met 3-4 times a year and included time for cross-district sharing, within-district team time, specific technical

assistance on improvement science principles, and opportunities to learn from other improvement networks. Within-district networks met more frequently, from 5-7 times a year. Within-district networks also provided dedicated time for district administrators and school leaders to develop change ideas, share data and information on the implementation of their work in their schools, and to immediately apply their learning.

District Support Activities. Mass Insight's work as the network hub started with helping each within-district network team identify priority challenge areas and articulate change ideas. Through this process, we formally introduced and began to model improvement science processes. For instance, in each district we supported district and school leaders in developing a concept map (a graphical representation of the factors that relate to the problem of practice) to gain a better appreciation of the system and align potential change ideas with improvement drivers. We then co-constructed strategies that addressed a district-specific common problem of practice aligned to the multi-district problem of practice. Over the course of the project, the bulk of support activities

### Network Design of the Gateway to College Success Network



involved working with district teams on developing and planning for the implementation of change ideas, including the use of data collection strategies to measure the impact of change ideas.

Improvement Science Tools. In the Gateway to College Success Network, we use two specific tools from the improvement science toolkit to provide an organizing framework for our work: the Model for Improvement and Plan-Do-Study-Adjust cycles.<sup>7</sup>

The Model for Improvement is a model for learning and change, which presents a way of breaking the concept of “continuous improvement” into concrete, manageable steps.

Importantly, the Model for Improvement emphasizes change for the sake of *improvement*, not change for change’s sake—which educators are all too likely to feel they have already seen often enough. It also draws a useful distinction between change and improvement, clarifying that while all improvement

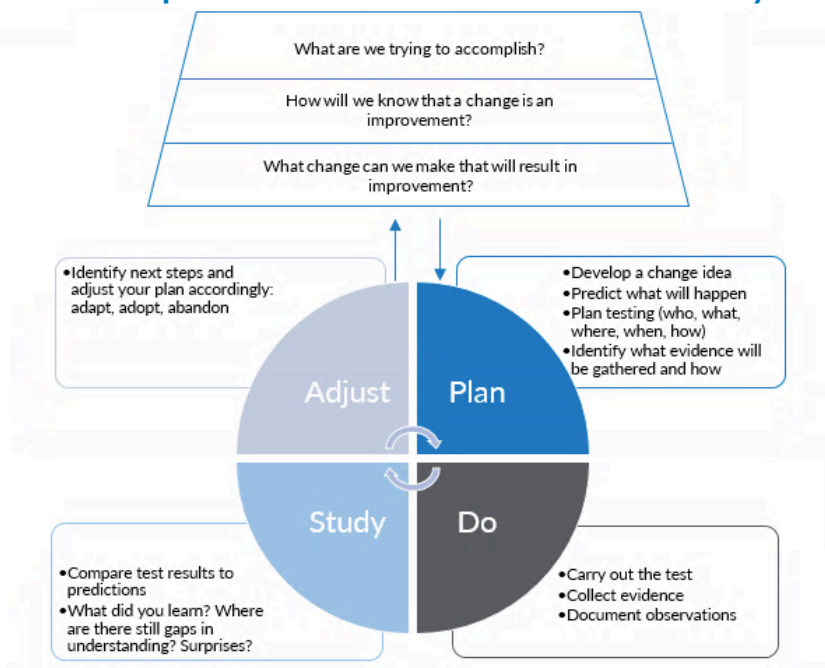
requires change, not all changes are improvements. Ultimately, the Model for Improvement is a tool that helps practitioners articulate a goal, identify a potential improvement (or “change idea”), and thoughtfully evaluate whether that change idea in fact resulted in the expected improvement. As outlined below, this is a significant shift in how practitioners have generally approached school improvement.

The engine of the Model for Improvement is the Plan-Do-Study-Adjust (PDSA) cycle. At the heart of the PDSA cycle is the change idea, which is a hypothesis about a change that will lead to improvement. PDSA cycles are used to plan testing of a change idea, carry out the testing, analyze the results, and identify next steps.

PDSA cycles are a valuable approach to inquiry because they emphasize:

- The importance of testing potential change ideas to address a problem of practice, rather than

### The Model for Improvement and the Phases of the PDSA Cycle<sup>8</sup>



simply starting with widescale implementation and expecting perfection.

- Rapid testing of and iterating on change ideas to adapt them to specific contexts and audiences
- Making clear, specific predictions about the expected impact of a change idea, which makes clear what data needs to be collected to evaluate the predictions.
- The use of data for improvement, rather than evaluation, a stance that says failure is useful because it provides data to help plan subsequent PDSA cycles.

The focus in PDSA cycles is not on accountability or evaluation of practitioners; rather, it is on finding what works, in what contexts, for whom. As individual PDSA cycles result in information about whether change ideas result in improvement, practitioner teams can build on successes to rapidly spread and scale successful practices, while avoiding scaling unhelpful changes. Using PDSA cycles and the Model for Improvement allows schools to focus more clearly on the lived experiences of teachers and students in classrooms every day through an increased use of relevant, timely data.

### Key Learnings

Using improvement science in a networked community is a significant shift away from business as usual in education. It takes time for practitioners to develop new ways of thinking and acting. As we discuss below, practitioners need time to meet, both within their schools and across multiple schools (and districts); to develop capacity for new kinds of data collection and analysis; to embrace the shift from thinking about data for evaluation to thinking about data for improvement; and to test and assess change ideas so that implementation leads to increased student success. Improvement is urgent,

but as we have seen time and again in education, urgency absent effective implementation frustrates practitioners and does not appreciably improve student outcomes. Improvement science, conversely, is about "*learning fast to implement well*" (Bryk et al., 2015, p. 7), or the idea that taking time up front to test new approaches and adapt them to specific contexts *before* full-scale implementation will result in better and more sustainable outcomes. Entering our third year of working with the Gateway to College Success Network, we have seen the promise of this approach firsthand. As interest in (and funding for) NICs and similar approaches increases, we offer here 10 learnings from our first two years with the Gateway Network in the hopes that they will help others interested in using the NIC approach learn faster and implement better.

### Learning 1: Having a student outcome goal shared among all network schools is crucial.

In *Learning to Improve* (2015), Bryk and his colleagues tell us that a key principle of improvement work is to "Make the work problem-specific and user-centered" (p. 12). The first two years of the Gateway to College Success Network have taught us the importance of framing *students* as the key users: while teachers and other staff members are critically important, the ultimate consumers of education are students, and identifying what specifically should change for students gives work in a networked improvement community focus and urgency.

During our first conversations with Gateway Network superintendents, they noted that although curricula in grades 6-12 were generally aligned, instruction often was not. This was visible in varying levels of instructional rigor in their districts, which meant that not all students had consistent access to aligned, rigorous instruction that would ensure they were

prepared to access and succeed in advanced courses as they progressed from middle through high school. These observations aligned well with the focus of the grant that Mass Insight secured to support this work, which was focused on “helping Massachusetts teachers shift their instructional practices so that they can meet the demands of the Commonwealth’s high academic standards.” As a result, when we framed our initial problems of practice as a network, we focused our language on teachers and mentioned students relatively briefly.

### Original Gateway Network Problems of Practice

1. **Aligning teacher and classroom instruction both vertically and horizontally in grades 6-12 within and across schools so that all teachers are providing rigorous instruction and personalized learning opportunities that enable students to have access to college-level courses while in high school and graduate prepared for college and career.**
1. **Removing systemic barriers to the time and flexibility required to align instruction within schools and across schools, so that teachers have the time and opportunity required to form the communities of practice needed to provide rigorous and personalized instruction.**

These problems of practice were genuine and important, but in hindsight we see them as a good first step toward articulating a more student-centered goal, rather than an end in and of themselves. Thinking in terms of specific problems for student “users”—that is, centering students’ instructional experiences and outcomes in our thinking—would have pushed us to grapple with specific questions about what we hoped our work would accomplish for students, illuminating the why behind our focus on shifting teacher practice. For example, we might have pushed ourselves to consider:

- Which students specifically were not accessing and/or succeeding in advanced courses? Were there positive outliers among our network

schools serving these students better, and how could we leverage the power of the network to scale their successes?

- What measures would tell us how students were doing before they got to AP courses, in middle school and early high school grades? What ideas did we have about how to improve student outcomes on those measures, and how could we use disciplined inquiry to test these theories?

Moreover, such questions would also have forced us to think more specifically about what we wanted to accomplish as a network; they would have driven us toward a quantitative description of what improvement in our target areas would look like in terms of student outcomes. Such a shared target would, in turn, have increased opportunities to work collaboratively as a network to identify key hypotheses about improvements that would help us reach our improvement goals, and the strategies we would use to test those hypotheses network-wide.

The problems of practice were essential to providing a shared understanding of the aspects of instruction we were thinking about together as a network.

But as district teams began to identify strategies and tools to improve instructional alignment in one or two content areas, we lost opportunities to maintain a laser-like focus on students’ experiences and outcomes across the network as a whole. For example, even when teams in different districts and different content areas were working on similar strategies (such as student grouping and collaboration routines), they did not necessarily appreciate connections across content areas, and we struggled as a network to leverage our individual learnings to truly accelerate learning network-wide. While we convened as a cross-district network multiple times each year, participants



reported that they found the most value in within-district conversations and did not immediately see connections to work happening in other districts. Had we continually turned the conversation to what students were experiencing instructionally, the commonalities across content areas would likely have been clearer to all network members, increasing the perceived power of networked learning.

### Creating a Shared Student Outcome Goal: Changes for 2018-2019

Drawing on this learning, we have:

- Focused work in a single content area, making it simpler both to set a shared goal and for schools to see the relevance of other members' work for their own teachers and students.
- Engaged in a collaborative goal-setting process as a network, using state accountability data to ensure a consistent measure across all schools and focus all network members on a tangible measure of success.
- Built a network driver diagram, a tool for visually organizing work happening across the network, allowing members to see connections between their work and the overall network goal, as well as between their work and that of other network schools, at a glance.

### Learning 2: Build in time at the start of network development to collect and examine data on current practice that informs development of the shared network aim and instructional vision.

Bryk et al. (2015) emphasize that it is critical to “see the system that produces the current outcomes” (p. 14) in order to design changes that produce improved outcomes. We allocated significant time and effort to understand, from the perspective of district and school stakeholders, the system in which schools operated and local conditions that influenced their work. Three strategies were used to collect data on current practices in each district (see page 9).

These strategies were utilized during the first year of the project and informed the development of district-

and school-level improvement activities piloted at the end of year one. However, we did not engage teams—at either the cross-district or within-district level—in data-driven root cause analysis to formally unpack two critical questions: (1) Why aren't more students ready to access higher-level coursework? and (2) What does the instructional experience need to look like to get all students ready?

Such a root cause analysis, focused on student outcome and classroom observation data in addition to the data collected during SRAs, would provide a frame that increased our ability—and that of our schools—to truly “see the system,” testing more subjective impressions against objective measures and providing a better foundation for the development of change ideas and strategies that are genuinely robust enough to achieve the desired improvement. During conversations about their theories of action, districts repeatedly noted that their support systems were not as effective as desired or were variably successful, working well in some schools but not in others; rigorous root cause analysis would have helped us understand those shortfalls more precisely, and ensure that teams designed robust, high-leverage change ideas, which addressed true root causes, to test with the tools of improvement science.

Finally, including additional data and conducting root cause analysis would have facilitated setting a student outcome goal and ensured that it was a thoughtfully-designed goal grounded in a thorough understanding of students' and teachers' current levels of performance.

Given these learnings, we make the following recommendations:

- Take time at the start of network development



## Seeing the System: Three Strategies

Understand the theory of action	Develop concept maps	Conduct School Readiness Assessments (SRAs) <sup>9</sup>
<p>We met with each district's senior leadership to understand their theory of action and related systems of support used to improve teaching and learning. Each district did have a working theory of action, which typically included a variety of district-wide professional development, school-level coaching, and mechanisms through which the district would monitor and/or support schools. A common thread among districts was the distinction between their theory of action and what was actually occurring in schools. Across the board, districts noted that various components of their system were not as effective as desired, or that the system was working well in some schools but not in others.</p>	<p>We worked with each within-district team to develop a concept map depicting the core issues and challenges that schools and district staff perceived as directly impacting the vertical alignment of instruction in the content area the district identified as an initial focus. The concept maps prioritized the core issues that school leaders and teachers felt needed to be addressed to strengthen rigor and improve instructional coherence horizontally and vertically. District and school leaders then focused on the prioritized core issues to identify or develop change ideas that were subsequently tested through PDSA cycles.</p>	<p>We conducted full-day site visits at each school, focusing on school strengths and challenges, and provided schools with a comprehensive assessment of school-specific areas for improvement.</p>

to identify the quantitative data sources you will need and ensure all network members are committed to collecting and sharing such data.

- Engage in a rich data-collection process that includes appropriate qualitative data, such as interviews and focus groups, as well as necessary quantitative data, including student outcome and classroom observation data.
- Use root cause analysis to ensure that change ideas address real needs and are robust enough to achieve desired ends.<sup>10, 11</sup>

### **Learning 3: Network members must have a deep, shared understanding of high-quality instruction.**

Building on the first two learnings, we want to emphasize here the importance of a deep, shared understanding of high-quality instruction among all network members—at the district, school, and teacher level.

During the first two years of the Gateway Network project, districts implemented several change ideas intended to improve teachers' instructional practices. However, over the course of the project, it became clear to us that most districts did not have clear definitions of what high-quality instruction actually

looked like in practice; they also lacked tools that would allow them to measure the extent to which teachers were providing high-quality instruction. Some districts recognized the need to define high-quality instruction more clearly early on, and were able to use Network resources to provide specific training on instructional practices. With the benefit of hindsight, we think an important part of the network hub's role is to ensure such conversation and trainings happen not just on an ad hoc basis but network-wide, at the start of the project, to ground all members in a shared language and vision.

Connected to the need for a shared definition of high-quality instruction is the need for tools that make it possible to measure the extent to which teachers' instructional quality is improving over time. These tools must allow for easy aggregation and analysis of the data collected with them. For example, while some Gateway Network schools have observation tools that administrators use to look at rigor, they are primarily qualitative in nature, which makes synthesizing observational data challenging. In at least one case, teachers also noted that such a tool did not give them enough information about what observers were looking for—that is, the tool

did not advance the goal of creating a shared definition of high-quality instruction and, in fact, may have represented a step in the wrong direction, as teachers were frustrated with the feedback they received after the tool's use.

Ensuring that a network shares a deep understanding of what high-quality looks like makes it possible to measure the quality of instruction across the network, and thus to improve it. Using common tools that make data collection and analysis straightforward also makes it possible to collect cross-school data at the network level and makes it easier for network participants to visit one another's schools and ground conversations about what they see in shared expectations about what instruction should look like.

#### Building a Shared Vision of High-Quality Instruction: Changes for 2018-2019

Drawing on this learning, we have:

- Developed a walkthrough tool that focuses on what both teacher practice and student experience look like in high-quality classrooms.
- Shared this tool with all network members, including teachers, and used it to ground conversations about what we can expect to see—from teachers and for students—in classrooms where instructional practice is improving over time.
- Started to use the tool for walkthroughs across the Gateway Network, capturing consistent data from all Network schools and allowing us to look at instruction across all Network schools over time.

#### Learning 4: Leverage the expertise within your network—and recognize when you need external support.

One of the great values of a networked improvement community is that it allows members to tap into one another's expertise; NICs are collectives in which "each participant holds expertise that is valuable in

solving a given problem, but each also recognizes that he or she must join together with others to solve it" (Bryk et al., 2015, p. 17). Throughout the first two years of this project, however, we have learned additionally that success in accelerating improvement depends on sharing expertise within the network—and on bringing it in from outside the network as needed.

As we have described, the Gateway Network was conceived as being composed of two levels: within-district network teams, made up of small numbers of representatives from participating schools; and the cross-district network, which was in turn made up of the within-district teams. This structure was particularly helpful for facilitating sharing of expertise within districts, as district teams met relatively frequently (5-7 times per year), but we also created opportunities for districts working on similar strategies or facing similar challenges to share their learning and expertise at the cross-district network convenings. At the same time, both structures were also useful when external expertise was needed:

- **Within-District Networks:** Some districts that recognized they needed additional expertise used Network funds and time to bring in external supports. For example, one district identified a gap in instructional practice that was hampering teachers' ability to implement the change idea as identified; accordingly, they brought an expert in the field to the district for multiple trainings and continued to build their understanding of the tools he shared throughout the course of the year.
- **Cross-District Network:** The cross-district network was an important structure for providing high-quality, consistent training and technical assistance to all districts. For example, Mass

## Use the Expertise You Have—and Identify the Help You Need

	Internal Expertise	External Expertise
Within-District Networks	<ul style="list-style-type: none"> <li>• Use data to identify positive outliers within the team</li> <li>• Provide opportunities for leaders to share within their school, such as classroom visits, recording instruction for observation and discussion later, enabling common planning if it is not already scheduled, etc.</li> <li>• Connect high performers with teams in need of support across schools, using network resources to arrange cross-school visits and similar opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Find patterns across multiple schools in a district to identify areas where outside help is needed, such as consistently low scores on a specific element of a shared observation tool.</li> <li>• Use within-district network time to provide opportunities for network participants to get training they would not otherwise be able to access.</li> </ul>
Cross-District Network	<ul style="list-style-type: none"> <li>• Use full network meetings to highlight emerging strengths around the network, such as by encouraging teams to present on promising change ideas and implementation practices.</li> <li>• Provide time for teams working on similar challenges and/or drivers to connect during network meetings, whether in-person or virtual.</li> </ul>	<ul style="list-style-type: none"> <li>• Take advantage of having all network members together to bring in national resources, such as improvement science leaders or networks from further afield, who can provide professional development as the whole network develops new skills or attacks new problems.</li> </ul>

Insight used the network meetings to introduce the language and tools of improvement science to network members, to bring in staff from the Institute for Healthcare Improvement to provide professional development on the Model for Improvement and PDSA cycles, and to have speakers from networks in Florida and California share their experiences using improvement science with Gateway Network teams.

The first two years of the Gateway Network have underscored the importance of spending time early on in the life of the network—soon after goal-setting and root cause analysis—in understanding where the necessary internal expertise exists and where outside support is required. This means identifying positive outliers within the network and providing opportunities for those leaders to accelerate the learning of others and, equally important, quickly acknowledging where network members need more help than can be provided from within. The table above illustrates our current thinking about how hubs can do this successfully.

### **Learning 5: Ensure that all parties are clear on what participation in the network involves, including expectations and data collection efforts.**

Being part of an improvement network requires districts and schools to think differently about their work, and to create new structures to carry that work out. As an organization that takes a design-based approach to our work, Mass Insight was quick to try to customize our work in response to the multiple district contexts that teams brought to the Gateway Network. We soon learned, however, that these contexts significantly influenced not only the change ideas that each district developed, but also the extent to which teams engaged in—and were enabled to engage in—network activities. While we continue to believe in the value of a design-based approach that is responsive to context, we also recognize that there are minimum commitments that districts and schools must make in order to create a successful networked improvement community.

Becoming part of a NIC is a commitment on the part of a school or district team to improvement, but also

to the larger community it joins . We have learned that it is important that teams be willing to make at least the following commitments:

- Time for improvement teams to meet regularly to focus on network initiatives. While academic departments are natural improvement teams in the context of NICs, the average department has limited time that can genuinely be devoted to improvement work—such as the Plan, Study, and Adjust phases of the PDSA cycle. In some cases, a department may not meet frequently; in some of the Gateway Network schools, for example, vertical content teams meet just once a month and must address multiple student and non-instructional issues during that time. If a team is comprised of staff from multiple schools, or includes district administrators who are not usually present in a school, creating dedicated network team time is even more important.
- Freedom for improvement teams to identify and implement change ideas. One of the bedrock principles of improvement science is that teams must “Use disciplined inquiry to drive improvement” (Bryk et al., 2015, p. 16). This disciplined inquiry may involve making thoughtful changes to standard operating procedures, or using adaptive integration to make tools, programs, and processes work in specific contexts. For instance, an improvement team might develop a change idea that requires deviating from a district pacing guide in order to build students’ foundational skills while introducing grade-level material. Teams need the autonomy to be able to make these decisions, grounded in data and research on best practices, if they are expected to genuinely improve their practice and their students’ outcomes.
- Time for team members to participate in network events. Network meetings are critical components of a NIC; as we have discussed above, they provide time for network members to learn new skills, hear from external experts, and share their own expertise with peers. While networks should make every effort to minimize disruptions to instructional time, districts and schools that join a NIC must commit to making staff available for network events.
- Collection and sharing of relevant data. During the first two years of the Gateway Network, our efforts to collect network-wide data were hampered by legitimate district concerns about school-level overload. Most of our schools and districts were at some level of state identification that required mandatory participation in initiatives separate and apart from Network activities. For example, some districts declined to implement the Gateway Network teacher survey because they already administered different surveys required by the state. While the districts were happy to share their survey data with Mass Insight, having multiple surveys in use meant that we were not using a consistent measure to gather data about the impact of network activities. While schools and districts may be understandably reluctant to commit to a different or additional data collection tool—such as a survey, observation tool, or other measure—the importance of having useable data at the network level must be made clear to all potential participants from the beginning. Networks should work with district administrators to help reduce potential redundancies at the school level and ease the burden on school staff, and time needs to be built in to look carefully across tools to see what data is already being collected. At the same time, schools and districts also need to understand non-negotiable data collection requirements that the network may have.

We recommend codifying expectations in formal memoranda of agreement with each school-level network team and each participating district at the outset of network collaboration.

**Learning 6: Explicitly build teacher and school staff capacity to engage in the work of improvement science.**

Bryk et al. (2015) describe the importance of using disciplined inquiry to drive improvement. Midway through the first year of the Gateway Network project, Mass Insight formally adopted the Model for Improvement and the PDSA cycle (Langley et al., 2009) as our operating framework and inquiry cycle.<sup>12</sup> While our work to that point had been guided by the improvement principles articulated in Learning to Improve (Bryk et al., 2015), adopting the Model for Improvement and the PDSA cycle gave us access to tools and processes for testing change ideas more formally.

Mass Insight introduced the Model for Improvement questions and PDSA cycle structure during our final cross-district convening of the 2016-2017 school year. We conducted webinars during the summer of 2017 to provide more specifics and to introduce relevant tools, such as a PDSA cycle tracker template. During our first network convening of the 2017-2018 school year, IHI staff provided our district teams with more information and facilitated opportunities to practice using both the Model for Improvement and PDSA cycles.

During our work with the Gateway Network, we have repeatedly seen that improvement science and networked learning are new ways for teachers, school leaders, and district administrators to think about how they assess change ideas and instructional

practices. We learned that it requires significant training and shifts in mindsets at multiple levels within each district to operationalize these new ways of working. Additionally, it became clear that collecting data within the classroom during regular instruction (i.e., not just during observations, evaluative or not, by administrators) is not a standard practice, even among teachers who frequently review student performance data. Similarly, the habit of collecting more summative data and looking at it only infrequently—if at all—is clearly ingrained in many educational organizations. PDSA cycles are especially valuable because of their emphasis on collecting data regularly, looking at it frequently, and using it to make adjustments proactively rather than reactively. But while most participants reported that using PDSA cycles was professionally rewarding, we also heard many times that repeated training was important for network members to feel like they “got” how improvement science could work for them.

This was a particular challenge because of our network-within-a-network structure. Because we had only a few representatives from each school on the within-district network team, participants often reported it was challenging to scale deep understanding of PDSA cycles beyond these few people. While many schools involved all or nearly all of their targeted grade level/course teachers in implementing their change ideas, it became clear that most teachers who were not actively involved in either within- or cross-district network meetings did not clearly understand the distinction between the specific change idea being tested and the overall framework of the Model for Improvement *within which* that change idea was being tested through a PDSA cycle. For example, teachers at some schools referred to “PDSA problems,” conflating the content of a strategy with the tool being used to test whether

its use resulted in improved outcomes. When staff did understand this distinction, we saw increased enthusiasm for using PDSA cycles as a framework for testing and evaluating changes—including across multiple grades and/or content areas.

Importantly, buy-in was also reduced among teachers who did not participate in network meetings. These teachers often experienced the change ideas as yet another top-down initiative, extraneous to their “real work”—a new strategy they were asked to implement without context or input, and sometimes without a clear understanding of the improvement being aimed for via implementation. When staff had more understanding of the Model for Improvement and PDSA cycles, they felt ownership of the change ideas their teams generated and were more likely to engage in critical improvement activities, such as data collection and analysis. For participants to feel that they are collaboratively engaging in inquiry about their practice, rather than yet again having outsiders question their work, they must be given opportunities to understand the framework being used—and to participate in defining the problem and generating ideas to address it.

In short, we now know that more staff at each school must own the work of improvement and be explicitly onboarded to improvement science. While it can be helpful to have a vanguard of more experienced leaders at each network school, all staff being asked to engage in improvement science practices must understand the framework behind them. Relatedly, all staff who are being asked to engage in improvement work under the aegis of a network must know that this is what is happening because this way of working demands such changes in the way staff think about their roles and their power in the improvement process. Everyone who will be asked to participate in

improvement science should have the opportunity to build capacity to engage in this process.

### Building Staff Capacity to Use Improvement Science Methods: Changes for 2018-2019

Drawing on this learning, we have:

- Created school-based improvement teams, composed of administrators, instructional coaches, and *all* teachers who will engage in PDSA cycles and change idea testing.
- Provided onboarding to the Gateway Network and explicit training in improvement science methods for all participating teachers at the start of the year.
- Emphasized school teams' importance to demonstrate our respect for the professional capital<sup>13</sup> of all staff and increase the number of staff at each school who “own” Network improvement work.

### Learning 7: Engaging teachers in the discipline of improvement science supports meaningful collaboration and increases teachers' ownership of improvement efforts.

The idea that schools need to become learning organizations that adjust their practices in response to data is not new; such ideas and related vocabulary (e.g., “Professional Learning Community”) have permeated academic literature and professional development services. Too often, however, the power to make changes is centered with a few district administrators, while teachers and even school leaders have relatively little voice in how their district pursues improvement.

For example, consider the following scenario, which many educators will find familiar:

- A new initiative—a curriculum, strategy, or program—is adopted in direct response to a pressing issue identified through data analysis: low reading scores, for example, or excessive out-of-school suspensions.
- Leaders and teachers receive training on a new program purchased at the district level and are

expected to implement it, generally with support from school staff or ongoing district-provided professional development.

- Teachers are told they need to “implement with fidelity.”
- During the school year, some teachers are able to implement the strategy with success, while other teachers have less success.
- At the end of the school year, district leaders review systemwide data, often including teacher feedback on the program, to assess the impact of the initiative and develop a plan for the coming year, which might include additional professional development—or the adoption of a new strategy.

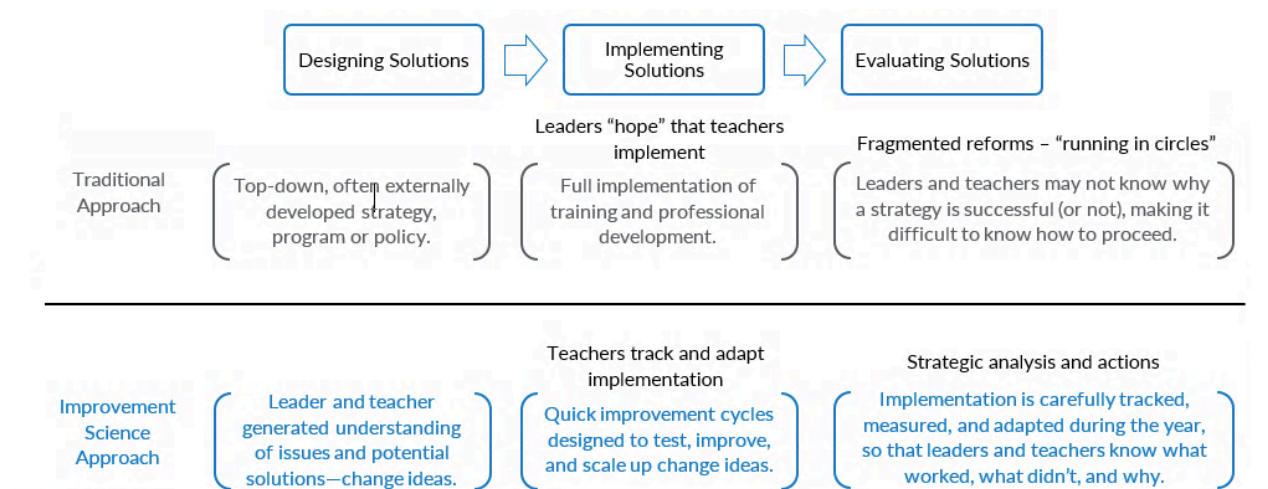
- As needed, teacher teams make shifts in implementation and to the program design itself to respond to real-time data; their learning and the shifts they are making in response are shared across schools during regular meetings for school leaders.
- The district identifies positive outliers through an ongoing use of school-level data, and leverages successes in some classrooms and schools to enhance training and supports for struggling teachers.
- Year-end evaluations focus on what it takes to achieve success with the program in the district’s specific context, and teacher voice is an important part of the conversation about next steps.

NICs, on the other hand, center the experience of teachers, coaches, and principals in conversations about how to do better for students. Consider this alternative approach, grounded in improvement science and networked learning:

- A new initiative—a curriculum, strategy, or program—is adopted in direct response to a pressing issue identified through data analysis.
- Throughout the implementation period, intensive testing of the initiative is carried out by teacher teams trained in improvement science that have dedicated time to meet and evaluate progress.

There are many advantages to the improvement science approach. Engaging in the discipline of improvement science increases collaboration within schools. In a survey we administered at the end of the 2017-2018 school year, teachers and instructional leaders noted that the focus on implementing the same change idea across multiple classrooms and the structured testing of change ideas helped them to norm instructional expectations as well as diagnose student needs, leading to

### Traditional vs. Improvement Science Approach to School Improvement





improved horizontal alignment of instruction within a content area. After the introduction of PDSA cycles, some teachers had opportunities to visit peers implementing the change idea and to collaboratively look at student work, leading to shifts in their own instruction. And instructional coaches at Network schools reported that using PDSA cycles changed how they supported teachers, leading to deeper and more structured conversations and teachers actively modifying instructional strategies (and then testing these modifications). As teachers more systematically collected and shared data on specific instructional practices and students' responses to them, they also increased their collective ability to think critically about which practices were working for which students on a daily basis .

Additionally, teachers participating in PDSA cycles also frequently received more support from coaches and lead/mentor teachers than they had previously, as instructional leaders were actively focused on supporting teachers in implementing change ideas and collecting data on their impact. In targeted content areas and grade levels, teacher observations increased; mentor teachers demonstrated the change idea in action; and instructional coaches collaborated with teachers, individually and in PLC groups, to develop lessons.

We repeatedly heard from Gateway Network teachers that improvement science was a valuable new way of thinking and that they were more likely to approach a new strategy or practice with an open mind in the lower-stakes setting of a PDSA cycle testing period than when simply mandated to use a new program by central office administrators. We also saw this excitement during school visits Mass Insight conducted in Spring 2018, when multiple teachers told us they felt more accountable to one

another for trying new strategies and tools. These teachers reported that they were more willing to try something new when they knew that they would be part of the conversation regarding the new strategy's effectiveness, during the Study and Adjust phases of the PDSA cycle, and that failures would be used not to evaluate them as professionals but rather to provide data for improvement that could drive adjustments in subsequent PDSA cycles. Both of these responses to the approach reflect teachers' enthusiasm about their growing sense that they could make important decisions about improvement. Notably, teachers' collective responsibility—their feeling of ownership of their students' success—improved among many teachers actively involved in PDSA cycles.

All of these changes support sustained implementation of improvement strategies and genuine shifts in teacher practice over time. Too many teachers have experienced too many top-down directives during their careers; often, the response is for veteran teachers to wait out district changes, rather than rushing to change their practice. But clearly many schools need to improve their students' outcomes, and thus even veteran teachers must be open to interrogating their practice and adopting more effective strategies. The Model for Improvement and PDSA cycles, which emphasize the voice, expertise, and professionalism of teachers, are promising approaches for re-engaging teachers in critical conversations about what students need and how schools can address those needs.

**Learning 8: Understand that creating a successful network involves identifying systemic barriers to collaboration within and across schools and taking the time to address such issues.**

The methods of improvement science require

that district administrators, leaders, teachers, and networks of schools have the time and resources to meet together, collaborate, and problem solve. However, many districts face systemic barriers to collaboration within and across schools, such as limitations on the use of common planning time, few professional development days, and varying bell schedules. Ensuring that schools have the conditions—the time, resources, and autonomy—needed to quickly implement change ideas and fully engage in all phases of the PDSA cycle is crucial, yet altering these conditions is often constrained by existing district policy and collective bargaining agreements. Fully acknowledging such systemic barriers and building in time to work through them is needed for networks to successfully help schools implement improvement science practices and engage in networked learning opportunities, as well as to support improvements that are sustained over time.

For instance, the use of PDSA cycles as an improvement tool requires focused teacher conversation about how to improve instruction and increase student achievement. Yet, as discussed in Learning 5, teachers often do not have enough time to meet together in the necessary teams; for example, middle school teachers may have significantly more time to meet with grade-level teams than vertical content teams. Moreover, teacher meeting time is often spent on important but non-instructional topics. Without dedicated time for teachers to meet in intentionally designed teams, it is nearly impossible for teachers to collaborate on improvement, identify and test out ideas together, reflect on their findings, and learn from each other. As noted above, Gateway Network members particularly valued within-district team time, noting that they generally had few, if any, opportunities

to spend time with colleagues from other schools in their districts focusing solely on instructional practice and planning. As we shift to a more school-based approach, we continue to look for ways to connect schools working on similar problems to one another, both within and across districts. Network hubs and participating schools and districts should work together to anticipate potential obstacles to full participation in network activities, and should think creatively about how to overcome such challenges.

#### Identifying and Addressing Systemic Barriers: Changes for 2018-2019

Drawing on this learning, we have:

- Reduced out-of-building time for Gateway Network participants by reducing the number of full-Network convenings from 3 to 2.
- Simultaneously increased opportunities for collaboration by introducing more virtual meetings, including bi-monthly videoconferences that allow participants to check in with one another without missing instructional time or other duties.
- Increased our efforts to connect schools to one another directly, emphasizing that Network members do not need to wait for formal Network events to learn from and with one another.

#### Learning 9: Strong school and district leadership is needed to successfully engage in improvement work.

At both the school and district level, leadership creates conditions that can either support or hinder network efforts. Leadership in a NIC context is about empowering teachers and coaches to test innovative ideas and engage with colleagues to accelerate their learning. As illustrated below, strong leadership in a network context refers to the degree to which district leaders create conditions that allow schools to engage in networked learning; similarly, at the school level, principals must cultivate school cultures that make it possible for coaches and

teachers to engage in the innovative experimentation that improvement science requires. (For example, a principal who encourages teachers to try new approaches and, if new ideas fail, focuses on what teachers learned from the failure and asks how they will use that learning to feed their next idea is building an improvement mindset; while there is urgency to do better, there is also room to test new approaches.) Creating conditions such as these requires sufficient positional authority. While leaders at the school and district level do not need to be experts in improvement science or networked learning before joining a network, they must be open to the NIC approach and willing to work with the hub to develop their own capacity to lead this improvement approach.

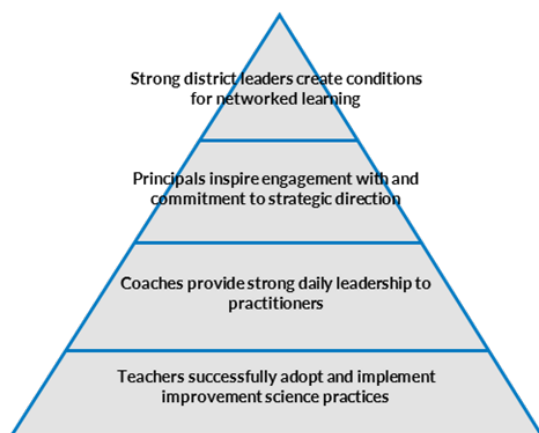
District leaders create the appropriate conditions for staff at NIC member schools by creating (or working with the network hub to create) structures to support networked learning, such as within-district meetings that bring together all schools participating, permission and substitute coverage for practitioners to attend network-wide events, and support at the district level for increased autonomies that may be required (such as giving schools in the

NIC permission to try different tools or instructional models than other schools). District leaders with strong positional authority are also more likely to be able to encourage the spread and scaling of successful practices across multiple schools within a district (including schools not formally part of a network) than district staff who lack the ability to set agendas at the school level.

When we started the Gateway Network project, each district assigned at least one district “point person” to oversee and participate in the work. However, the positional authority of these leaders varied: some had direct oversight of the schools and principals involved, while others had no authority relative to the participating schools. All district leaders effectively managed within-district networking activities, such as organizing meetings and managing logistics (professional development credit and/or pay for attendance, for example). However, when the district leaders lacked positional authority, they found it difficult to keep schools focused on Gateway Network work in the face of competing district priorities. Our experience highlights the importance of engaging principal supervisors in NICs; while other district leaders may have more authority over, for example, substitute budgets, principal supervisors can ensure that principals receive appropriate support as they lead this new way of working, and can keep an eye on the dangers of initiative overload.

At the school level, administrators and instructional coaches are key to building an environment that supports teachers’ engagement with improvement science and the work of the NIC. Principals set a vision at the school level; their focus on improvement projects can also heighten accountability for teachers on a daily basis, while coaches are key conveners of teachers actively testing change ideas. Ideally, a NIC

### The Network Leadership Pyramid



will have many principals and coaches who embody the kind of “lead from behind” approach that is so helpful in an improvement science context.<sup>14</sup> But hubs can also help leaders grow into this approach during their time in the network. The network hub can provide dedicated check-in time, and technical assistance that enables principals and coaches to provide daily support to teacher teams starting to engage in PDSA cycles, and opportunities to collaborate frequently with peers at other network schools. Given the new ways of thinking, particularly about data collection and analysis, that improvement science demands of its practitioners, these supports from the hub can lay the groundwork for schools—and especially teachers—to ultimately own the work of improvement.

In a NIC context, therefore, “strong” leadership is about building and supporting collective responsibility for improvement work that drives student success. Strong leaders do not need to know how to do everything themselves, but they should model an openness to data and the inquiry mindset required to successfully engage in PDSA cycles, building enthusiasm for the new and different work necessary to conduct effective tests of change ideas and build compelling evidence for conclusions about the value of those changes. In a network, strong leaders also support teacher collaboration as a critical component of improvement.

We must sound one cautionary note. During the Gateway Network project, several of our partner districts experienced shifts in executive leadership, which posed challenges to network activities in those districts. Midway through year 2 of the project, we learned that superintendents from two of the partner districts would be leaving their positions. We also learned that the Chief Academic Officer for a third

district, who was that district’s Gateway Network lead, was taking another position within the district and would no longer be involved with the project. In every case, these transitions slowed down work, even when incoming leaders were eager to engage in the Gateway Network. These experiences highlight the importance of Learning 5 (Ensure that all parties are clear on what participation in the network involves) *and* the importance of having strong leadership at all levels within a district. While we believe schools are the unit of change, as described in Learning 6, we also recognize that individual schools exist within the contexts of their districts—contexts that can help or hinder participation dramatically. Given the realities of school district administration today, network hubs must anticipate and plan for changes in district leadership in order to keep work moving forward at the school level.

**Learning 10: Networks need to develop clear measures and indicators that help participants see the connections between inputs and outcomes at multiple levels.**

As we have discussed earlier, the improvement science approach to school improvement differs from the traditional school improvement model in several significant ways: teacher understanding of problems and potential solutions is central to improvement efforts, teachers conduct rapid testing cycles at the school level to track and adapt implementation in real-time, and decisions are made as data becomes available. We believe that these are all good changes; however, over the past two years of working with the Gateway Network schools, it has become clear to us how much of a shift an improvement science approach requires in how teachers and coaches collect and work with data. Most notably, teachers and coaches learned that they needed to think differently about what we meant by “data” and what

collecting and using that data on a daily basis could look like. As a result, we have learned how important it is to spend time developing clear measures and indicators that capture implementation and impact at multiple levels: classroom, school, and network.

Classroom-level data captures information about the implementation and *immediate* impact of change ideas. For example, if teachers are testing whether teaching students a specific annotation strategy for word problems will increase the number of students who attempt to solve word problems independently and who do so successfully, they need a data collection plan that will give them that information. Similarly, if teachers are interested in whether a new instructional strategy is increasing students' growth mindset about math, they need to design practical measures that let them quickly assess students' mindsets. In both cases, teachers need information about both implementation (e.g., Was the change idea implemented as planned?) and impact (e.g., Do more students in fact successfully solve word problems independently using the annotation strategy?).

We have learned that we need to build teams' capacity to think through the lens of the Model for Improvement and its three questions (What are we trying to accomplish? How will we know that a change is an improvement? What change can we make that will result in improvement?) as they approach data collection and analysis. In a NIC, "data" refers to lagging indicators (such as improving student performance on an annual state exam) but also, importantly, indicators about a specific change idea in a relatively brief PDSA cycle. Ultimately, with support from the network hub as needed, teams must be able to:

- Make concrete predictions about the specific,

immediate improvements they believe will result from implementing a given change idea; and

- Design realistic data collection plans that allow teachers and coaches to collect the data they need to evaluate the accuracy of their predictions *without unduly encroaching on instructional time*.

### Developing Better Input Measures: Changes for 2018-2019

Drawing on this learning, we have:

- Redesigned PDSA templates to make developing robust change ideas, predictions/expected results, and data plans more user-friendly on a daily basis for practitioners.
- Created a PDSA handbook that provides step-by-step guidance about how to collect and use classroom-level data to make decisions, making it clearer for teachers and coaches how data from a PDSA cycle can be used to make better-informed decisions about which change ideas to adopt, adapt, or abandon.

### Developing Better Outcome Measures: Changes for 2018-2019

Drawing on this learning, we have:

- Emphasized the importance of measuring the immediate impact of change ideas during team onboarding and training sessions, focusing on developing realistic, easy-to-implement measures.
- Begun to identify a set of common leading indicators based on extant data sources to assess whether students are making necessary progress—and to identify promising strategies to scale across schools (and ineffective strategies that can be discontinued).
- Set a shared student outcome goal, based on the Massachusetts state test, which is a lagging indicator that captures the big-picture improvement we are aiming for together, and discussed with Network members the importance of keeping the goal in mind as they identify change ideas and design PDSA cycles.

Once this data is collected, practitioners also need to be able to:

- Aggregate data across classrooms to see larger trends and identify positive outliers, so teams can quickly identify successful implementation strategies;
- Rigorously evaluate whether a change idea resulted in the expected improvement;
- Assess the accuracy of the predictions they made and explore any unexpected deviations from those predictions; and
- Make concrete decisions about next steps, such as whether to adopt, adapt, or abandon a change idea.

We are developing protocols to help teams successfully use common planning time to do this work—that is, to execute the Study and Adjust phases of the PDSA cycle—but also know that we need to support teams as they work through these phases for the first time, given the different mindset improvement science requires teams to use as they evaluate their work and their students' performance.

Finally, we are focusing on increasing teams' use of leading indicators throughout the year. Having set a shared goal across the Gateway Network, we are now working to help teams identify leading indicators that correlate to the goal, are culled from extant data, and ultimately can be used network-wide. For networks starting from the ground up, we recommend identifying a set of shared leading indicators earlier in the life of the network linked to the goal, root cause analysis, and change ideas. Generally, this kind of leading indicator might include common assessments, interim assessments, students' quarterly grades, attendance and/or discipline data, and so on.

Mass Insight has also developed measures that will allow us to evaluate our work as network hub, specifically focusing on the implementation of improvement science practices and on the spread of learning and promising practices across the Gateway Network. These measures will help us identify our own successes and remaining challenges, identify positive outliers among our school teams who can provide internal expertise to other teams, and target the right supports to each Network team.

### **Conclusion**

As we hope has become clear, the networked improvement community approach has great promise for practitioners seeking to spur real, sustainable school improvement; it is also an approach that requires time to lay strong foundations on which to build. Schools and districts are not currently set up to make networking easy; network conveners must confront and overcome an array of logistical hurdles just to get multiple schools in the same room at the same time. Additionally, improvement science requires new ways of thinking, working, and reflecting on practice for educators at all levels, from classroom teachers to superintendents. Yet there are tremendous potential benefits, which we have seen emerging over the course of our ongoing work with the Gateway Network. Some of the most noteworthy strengths of this approach include:

- A strong focus on teacher practice in the service of improving students' educational experiences and outcomes.
- Elimination of artificial barriers that often prevent sharing of important learning within and across schools.
- Increased time for teachers and school leaders to dedicate to rigorous inquiry about the efficacy of their work.
- Opportunities for teachers to be genuinely

engaged in, and have ownership of, improvement efforts in ways that respect their professionalism, expertise, and dedication to their students.

We at Mass Insight continue to embrace opportunities to learn from our experiences serving as the hub of the Gateway to College Success Network. Together with our district partners, we are excited about the dividends that can result from the investments we have made to date in learning and growing together in the Gateway Network—for school leaders, for teachers, and ultimately and most importantly for students.

### Endnotes

<sup>1</sup> The Carnegie Foundation for the Advancement of Teaching adopted the term “networked improvement community,” which originated with computer engineers, for use in educational settings. For more detail about the origins of NICs and Carnegie’s use of the term in education contexts, see *Learning to Improve: How America’s Schools Can Get Better at Getting Better* (Bryk et al., 2015).

<sup>2</sup> In fact, NICs offer a way for a group of practitioners in any field to work together to solve problems. While this brief is focused on how a NIC, and particularly the improvement science approach, is useful for educators thinking about improving instruction, within education NICs could also focus on other areas, such as attendance, discipline, and operations. While some of the learnings we present here are specific to instructionally-focused NICs, others are more broadly applicable to anyone interested in this approach to improvement.

<sup>3</sup> For information about our AP STEM & English program, go to <http://www.massinsight.org/ourwork/advanced-academics/>.

<sup>4</sup> Funding for the Gateway to College Success Network was provided by the Massachusetts Teaching and Learning Network.

<sup>5</sup> Throughout this document, we use the terms “district,” “district team,” and “team” to refer to the within-district networks formed under the auspices of the Gateway to College Success Network project, which included both district leaders and representatives (principals, coaches, and teachers) from each participating school.

<sup>6</sup> The network hub is a key component of an NIC. Among its critical tasks, the hub provides expertise on improvement science and develops improvement science capacity in network members, provides other technical support as needed (particularly around data), and supports communication structures that allow network members to accelerate improvement by learning from one another. (See Bryk et al., 2015, pp. 157-159).

<sup>7</sup> “PDSA” is commonly defined Plan-Do-Study-Act. We use the phrasing Plan-Do-Study-Adjust in the Gateway Network because our practitioners found it a helpful reminder of the work that needs to occur during the relevant phase of the PDSA cycle, and clarifies the distinction between “Do” and “Act” in the traditional acronym. “Act” and “Adjust” are, however, interchangeable terms as we use “Adjust” in the Gateway Network.

<sup>8</sup> Adapted from the Institute for Healthcare Improvement and *The Improvement Guide* (Langley et al., 2009).

<sup>9</sup> Mass Insight regularly conducts School Readiness Assessments (SRAs) during our School Improvement engagements. For these visits, we modified our standard SRA to more specifically focus on the issues of specific interest in the Gateway Network context. For more information about SRAs, see [www.massinsight.org/ourwork/school-improvement](http://www.massinsight.org/ourwork/school-improvement).

<sup>10</sup> Related to this is an emerging learning: we have come to believe that it also makes sense for networks to work together to identify a limited number of foci for improvement and specific change ideas, addressing the collectively identified root causes. During the Gateway Network project’s first years, we found that the testing of a wide variety of change ideas across teams, ranging



from specific evidence-based instructional strategies to broader initiatives like more effective use of common planning time, made it a challenge to compare similar data or to use standard data collection measures across sites (see Learning 10). We believe it is important for schools to have the freedom to focus on change ideas that matter to them, but we also increasingly believe that there is power in having schools identify these change ideas during larger network meetings, rather than in isolation. This allows network members (and the hub) to see shared challenges, as well as identify positive outliers, more quickly; identify collaborators within the network effectively; and co-create strong, practical data collection plans that capture the key leading indicators for a given focus area.

<sup>11</sup> Successful root cause analysis requires the availability of both student outcome data and classroom observation data. That is, conductors of root cause analysis must be able to see not just the outcomes of a given system, but the inputs that lead to those outcomes; knowing what is actually happening in classrooms is an essential predicate to determining where a change could be valuable and what data must be collected to evaluate whether that change is genuinely an improvement. In cases where observational data is not readily available, we believe that the network hub should prioritize collecting such data prior to diving into improvement planning.

<sup>12</sup> See IHI's website for additional information about the Model for Improvement and descriptions of the IHI Quality Improvement Toolkit. While Mass Insight has adapted IHI materials to tailor them for an educational audience, the IHI materials are an outstanding starting point for those interested in deepening their understanding of improvement science.

<sup>13</sup> See Hargreaves & Fullan (2012).

<sup>14</sup> Mirroring the longstanding findings of research on leadership and school improvement (Leithwood et al., 2017), survey data collected during both years of the

project demonstrated the positive correlation between teachers' perceptions of principal effectiveness and a school's organizational capacity to successfully engage in the work of the Gateway Network.

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At Mass Insight, in addition to the Gateway to College Success Network project, Nora has worked with multiple districts on central office reorganization to better support schools; performance management initiatives; and school improvement planning, implementation, and monitoring systems. In over 15 years of working in education, she has held multiple roles in public, charter, and private schools and has worked as a district administrator in a public district.

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