

Initiating a Network's Renewal: Charting the Development of Reading Recovery's Networked Improvement Community

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Editor's Note: This is the second in a series of articles published in this journal about Reading Recovery and improvement science. See Forbes, S., Askew, B., Flight, J., & Embry, J. (2019).

Colleagues from Reading Recovery® convened in Columbus, OH, to initiate a networked improvement community (NIC) in summer 2019. This group sought to use principles of networked improvement science (Bryk, Grunow, Gomez, & LeMahieu, 2015) to identify problems of practice and develop promising but small-scale changes that would strengthen the work of Reading Recovery teachers, teacher leaders, and trainers. The group was motivated to engage in this process to identify the most impactful teaching strategies to support the needs of struggling first-grade readers and to do so without fundamentally altering the trademarked one-to-one instructional model that has come to define Reading Recovery. The group's work was informed by Clay's perspective that effective teaching requires teachers to work in response to the needs of the learner and "make effective decisions, moment by moment, on the evidence of the child's responses during the individual teaching sessions" (Clay, 1994, p. 124). Indeed, the group agreed to maintain a state of perpetual inquiry and to make calculated adjustments in response to evidence. These principles are foundational to Reading Recovery and align with the key tenets of improvement science.

In this article, we describe the initial efforts to launch the Reading Recovery NIC, with a particular focus on the establishment and formalization of a network *hub*, an entity designed to carry out and, over time, coordinate continuous improvement efforts as capacity for this work grows. The NIC and its Hub will use the principles of improvement science as a basis for improving practices within Reading Recovery.

Improvement Science and Networked Improvement Communities

Broadly, improvement science involves the systematic application of small-scale tests carried out within the context of rapid Plan-Do-Study-Act (PDSA) cycles (Bryk et al., 2015). These cycles are designed to test small, measurable changes that are often embedded within the context of existing processes, tools, or practices. The improvement science process helps organizations to identify problems deemed important to frontline users (i.e., Reading Recovery teachers), and situates improvement activities within a specific system, seeking to minimize variation in implementation—and thus outcomes—through iterative tests of change.

A NIC is an intentionally designed entity that adopts, as its primary focus, a common problem of practice. NICs facilitate social learning for network participants as well as support the coordination of improvement activities relative to a specific and widely shared aim (Bryk, Gomez, & Grunow, 2011). Four characteristics distinguish these communities from other organizational structures (LeMahieu, Grunow, Baker, Nordstrum, & Gomez, 2017). According to LeMahieu and colleagues, a NIC

- focuses on a specific shared aim that articulates what members hope to accomplish and why.
- adopts a systems perspective that situates problems related to the aim in their full complexity. NIC actions reflect a shared theory of improvement that defines the change ideas to be introduced and how they contribute to the achievement of the aim.
- introduces and examines change ideas in a disciplined manner through PDSA cycles.
- works in a coordinated manner and documents the work, gathering evidence to illuminate the conditions under which changes ideas are effective.

Given the diffuse nature of a NIC, a Hub charged with coordinating improvement activities is paramount. The Hub's coordination includes building processes that guide improvement efforts as well as monitoring improvement activities launched throughout the broader community. A robust analytics infrastructure is critical to this work. In broad strokes, the network Hub serves as a source of technical guidance and collaboration (Bryk et al., 2015) and it does not function like a traditionally conceived governing body. Often the Hub's work begins by helping members of the network articulate a problem of practice that can be addressed through the subsequent development of PDSA cycles. Importantly, the initiation of a NIC and development of a Hub is not a linear process (Russell, Bryk, Dolle, Gomez, LeMahieu, & Grunow, 2017). Rather, it often occurs in response to a specific challenge that emanates from within a particular organization.

NIC Initiation Within the Reading Recovery Network

We joined the Reading Recovery Hub as a consulting team in August 2019, following a request from Dr. Billie Askew, founding executive sponsor, and Dr. Salli Forbes, founding director. The request indicated the need to provide technical assistance and coaching support in four key areas:

1. Assist the Hub in formalizing a new organizational identity and establish norms that would invite collaboration and problem solving.
2. Assist in narrowing the problem(s) the Hub would begin solving.
3. Assist in developing administrative processes and procedures to guide the solicitation and development of PDSA cycles outside the Hub's immediate scope of influence.
4. Formulate a long-range work plan that defined both what the NIC would accomplish in the next 2 or 3 years to support codifying funding and capacity requirements, as well as set an agenda for the slow scaling of improvement activities.

This article stems from our reflections on the initial development of the Hub—the first step towards NIC initiation—which occurred from August 2019 to January 2020. This description is situated and partial as the Hub's work is still underway. In this article, we discuss the development of norms; the process of identifying a shared prob-

lem of practice; developing a theory of improvement; and learning the process of improvement science. We close with a reflection on the Hub's work to date and lay out important next steps to move this work forward.

Importantly, the Hub's current work builds on prior efforts to identify important problems which began in 2017, with support from the network of university training centers and trainers. Through conversations facilitated by Carnegie Foundation for the Advancement of Teaching, 49 Reading Recovery colleagues from a variety of institutional contexts focused on two challenges: (a) variation in student outcomes and (b) growing and sustaining our work (Forbes et al., 2019). These challenges have animated much of the network's discussion about improvement and serve as the basis for the Hub's ongoing work. The Hub has continued elements of this conversation throughout the 2019–2020 academic year.

Development of norms

A critical first step in the Hub's initiation involved developing social norms that nurtured positive and trusting relationships which could then facilitate collective learning (Bryk, Gomez, & Grunow, 2011). In a network setting, social norms serve as the bedrock of the entire community, define its collective identity, and establish 'rules of road' that make it a distinct social space focused on improvement activities. From the outset, members of the Hub expressed a strong desire to work in a cohesive manner. Thus, during the first PDSA clinic held in Columbus, OH, we helped the Hub define norms (see Table 1) that would nurture individual and group behaviors necessary for sustained conversations about improvement. We have revisited these norms at the beginning of every meeting since. These norms outline individual and group commitments to ways of interacting and recognize that—above all else—the Hub's work focuses on the needs of children served by Reading Recovery. By January, members of the Hub reported notable differences in their culture that invited new ways of working and collaborating because of the establishment of these norms. Indeed, as one member remarked, "When we come into this space, we leave our roles at the door and focus on the work." Over time, Hub members have become increasingly comfortable challenging each other's assumptions about the possible causes of network-related problems as well as assumptions behind potential change ideas. These exchanges have fueled renewed understanding about the purpose of Reading Recovery practices and the intent of standard operating processes.

Table 1. North American Reading Recovery Improvement Science Hub Norms

I commit to ...	We commit to ...	Above all else ...
<ul style="list-style-type: none"> • Listening • Having a positive attitude • Remaining focused on the mission • Seeking clarity • Taking risks • Negotiating • Being prepared and participating fully • Assuming positive intent 	<ul style="list-style-type: none"> • Confidentiality • Working from trust • Seeking clarity • Valuing honesty and transparency • Seeking resolution • Valuing differences in roles • Accountability for ourselves and our work 	<ul style="list-style-type: none"> • We aspire to keep the focus on the children

In addition, members of the Hub defined a set of *non-negotiables*, which may be of particular interest to the readers of this journal. Non-negotiables are attributes of Reading Recovery that are so ingrained in its institutional identity that Hub members felt that changes in these areas would fundamentally alter the nature of the program. These non-negotiables, which now guide all conversations about change ideas, include

- a commitment that Reading Recovery will remain a one-to-one reading intervention designed to serve the lowest-performing students in first grade;
- a strong conviction to maintain Reading Recovery’s unique identity and honor its theoretical and empirical basis; and
- a commitment to working with a perpetual state of inquiry, a reference to Marie Clay’s (2015) own epistemological perspective.

Defining these non-negotiables has enabled the Hub to engage in initial discussions about the challenges facing the broader network and change ideas that might respond to them. More importantly, these non-negotiables have helped to relieve a sense of anxiety about how far changes might go in reshaping features of the landmark program.

Formalizing the Hub within the Reading Recovery network

Early work of the Hub also included the development of an operating charter that articulated the Hub’s relationship to four central entities in the Reading Recovery network:

1. North American Trainers Group (NATG)
2. Reading Recovery Council of North America (RRCNA)

3. Canadian Institute of Reading Recovery (CIRR)
4. Project Advisory Board at The Ohio State University (OSU)

The concept of a charter is widely discussed in improvement research as an important precursor for sustained improvement activities (Langley et al., 2009). In the case of the Reading Recovery network, the operating charter positions the Hub within the broader Reading Recovery network that has the autonomy to engage in improvement work. This autonomy is important as improvement cycles occur quickly and the process will not function if delayed by hierarchical organizational arrangements. The operating charter also specifies the conditions within which the Hub can undertake these activities relative to the network’s existing governance arrangements. Though the operating charter grants the Hub autonomy to explore possible change ideas, NATG retains authority to formally approve and adopt changes in Reading Recovery practices, policies, or training developed by the Hub.

Clarifying the focus of improvement

A NIC rests on the clear articulation of a shared improvement problem understood by all members so that they can engage in solving the problem. Thus, throughout the fall of 2019, members of the Hub worked to articulate a clear and widely shared improvement problem as reflected in a fishbone diagram, which is an improvement science tool used to help identify root causes. This, in turn, supported the development of an aim statement and corresponding theory of improvement as reflected in a driver diagram, which collectively identifies specific points of leverage and possible change ideas. Importantly, initial discussions developed through the Phase 1 work with Carnegie (Forbes et al., 2019) led to a new understanding that school boards, superintendents, and others had conflated

varied results with ineffective performance. Members of Phase 1 determined that the decline in Reading Recovery implementations was partly the product of these varied results. In these discussions members defined *results* broadly to include both the number of students being discontinued as well as other markers tracking Reading Recovery's growth.

Through successive conversations, the Hub increasingly focused on instructional strength as an important explanatory factor in both fishbone problems identified (variation in results, and growing and sustaining our work). Indeed, prior evaluation research (May, Sirinides, Gray, & Goldsworthy, 2016), pointed to variable instructional strength as a predictor of student outcomes in Reading Recovery, concluding that stronger and more intentional instruction resulted in students being discontinued from the program at higher rates. Members of the Hub determined that it was the ability to identify patterns in a child's reading and writing behavior that ultimately explained the teacher's success or difficulty. Instructional strength was thus predicated on the teacher's ability to describe and make inferences about the child's literacy processing system as represented by these patterns and respond to this system in their instruction. This definition of instructional strength is important for two reasons. First, it specifies teachers and teacher leaders as frontline users and indicates that improvement challenges will likely involve making changes in key aspects of their work. Second, it defines an area within which the Reading Recovery network can take direct action to solve the problem without redefining the children for whom Reading Recovery is designed or removing children from the intervention while in progress.

Learning the process of improvement

While the charter defined the Hub's scope of influence and clarity about the problem provided greater direction for the Hub's scope of work, Hub members required further opportunities to learn the improvement science process. Thus, through a series of face-to-face PDSA clinics held in Columbus, OH, members of the Hub have continued to engage in sustained professional learning about the improvement science process as well as the tools used to complete different parts of the process. Through these meetings, members worked to develop skills ranging from problem identification to the use of practical measurement. These skills are critical to the successful implementation of improvement science and reflect one of our

core assumptions about how to effectively initiate a NIC. These assumptions include that members of the network, particularly those in Hub roles must

- possess a well-defined understanding of the structured inquiry process *before* initiating PDSA cycles throughout the larger NIC;
- act as guides for the larger improvement process and thus must be prepared to lead, coach, and support this process on several levels;
- know how to help others identify a problem of practice, complete a fishbone diagram, articulate a clear aim statement, develop a driver diagram to articulate a compelling theory of improvement; and
- design effective PDSA cycles using appropriately specified practical measures.

Members of the Hub have learned that the improvement science process is complex and requires a significant commitment of time and analytic skill. Foremost, the process begins with a clearly articulated problem of practice that is relevant to users and engaging to the individuals who will carry out the improvement work.

Determining a theory of improvement

The Hub determined that variation in instructional practices likely predict how well Reading Recovery teachers support students and thus help them recover a normal reading trajectory. To unpack this problem, members conducted a root cause analysis (RCA). This analysis allowed members to identify all of the potential causes for a particular problem that they could respond to without engaging other entities within the network. In addition to the completion and review of a fishbone diagram, RCA requires the development of a theory of improvement. One of the primary reasons that interventions or changes introduced in an organization often fail is that users do not fully consider the origin or structure of the problem. Improvement science seeks to overcome this challenge by investing considerable time defining the problem in a clear and actionable way. This has been a key learning for the Hub members during their work this year.

Members of the Hub defined a tentative theory of improvement corresponding with their understanding of the problem. This theory explains the relationship between the aim specified by the Hub and the specific change ideas that they intend to test. In response to this theory of improvement, members articulated a series of

dict whether a change idea is being implemented in an appropriate or timely manner. It can be assumed that a positive change in a practical measure will lead to a positive change in outcome measures. Hub members have thus begun to realize that achieving a stated outcome in Reading Recovery ultimately requires focused attention on mediating factors and practical measures that have typically not been examined systematically.

One of the most important learnings for the Hub has been its recognition that the frequency and repetition of patterns in teacher practice is likely an important measure for consideration. Data for these measures did not exist before the Hub began its work. Thus, members started their improvement effort by developing a rubric to gather baseline information. As one example, the rubric measured to what extent the teachers referenced aspects of literacy processing theory in their summaries of the day's lesson on running records. This information provided Hub members with an opportunity to learn about and reflect on practices. More importantly, it enabled them to understand how variation in these practices was likely contributing to different outcomes. Hub members are now iterating this change idea through successive PDSA cycles to gather more information with which to inform the development of future change ideas. As Park and Takahashi (2013) note, a PDSA cycle can focus on specific changes to practice, processes or tools, or frameworks that organize knowledge. In the Hub's case, there is evidence that they are working across these areas through their initial PDSAs.

Taking Stock of the Experience to Date

Looking at the Hub's experience to date, several findings appear to be significant. First, much like any newcomer to improvement science, members of the Hub initially struggled to identify the challenges facing the Reading Recovery system and their causes. Hub members' initial perspectives were wrapped in understandings of individual roles (e.g., teacher, teacher leader, and trainer) instead of the Reading Recovery practices that defined work between teachers and students. Breaking free from this perspective has enabled members to see the work of the network in new ways and to envision possibilities for small-scale changes that can be introduced. Indeed, this learning reflects the shift toward user- and problem-centered thinking that is central to the work of improvement

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science. This means considering the work of teachers as the basis for the Reading Recovery enterprise and scaling up to include supports provided by teacher leaders and trainers.

Second, through the improvement process, Hub members have developed a shared understanding of the Reading Recovery processes related to the problem they are trying to solve. This clarity has allowed members to understand sources of variation that had previously perplexed and often obscured the 'real' causes of the problem. Interestingly, none of the problems identified by the Hub have, as of yet, required making fundamental changes to the Reading Recovery program model. Instead, members of the Hub have focused on changes that eliminate sources of potential variation in work processes which are used by Reading Recovery teachers, teacher leaders, and trainers.

Third, learning how a PDSA should be structured requires understanding the distinction between traditional experimental research and improvement research. In experimental research the aim is to determine whether an intervention works under generic conditions. This allows the researcher to claim with confidence that an intervention truly contributed to the observed outcome. In improvement research, variation is the problem that we seek to address in order to achieve coherence in practices that contribute to the aim. Understanding this distinction is essential for a well-designed and executed PDSA cycle and yet is an opaque aspect of improvement work.

Moving Forward

The process of designing and launching their own PDSA cycles has created a sense of momentum for members of the Hub. This momentum reflects not only their hard work throughout the first half of the academic year but also the deepening relationships and respect that are vital for social learning. As the work progresses, members are now considering how to formalize improvement activities so that they are accessible to the entire Reading Recovery network. This reflects a recognition that users who are new to improvement science will require both an orientation to the process and access to tools, resources, and other guidance that help the network carry out this work.

In response, the Hub has started developing infrastructure to support other colleagues who will become part of the NIC. Part of this infrastructure includes extensive use of cloud-based technology and routine use of a social learning platform called Slack, that integrates email and file sharing into a single communication stream. This commitment to readily accessible web-based tools reflects the Hub's desire to facilitate real-time communication that will link participating groups across the diverse Reading Recovery network.

Beyond infrastructure, the Hub has also begun developing standard operating procedures related to membership and future growth. These procedures include membership selection and onboarding, communication strategies with external and internal constituencies, as well as protocols for meetings in both face-to-face and virtual formats. While these may seem like relatively simplistic tasks, they are important for a growing NIC. Adding new members, in particular, represents one of the most important priorities for the Hub. Social relationships are central to network learning and the spread of innovations (Pittaway, Robertson, Munir, Denyer, & Neely, 2004). Further, new members address capacity constraints which could limit how quickly the Hub is able to define, execute, and learn from improvement cycles. Not surprisingly, members have taken considerable care in determining how to bring new members into the Hub as well as the process they would use to make these decisions. They determined that the best approach to member selection was to ask: What capacity does the Hub need to undertake its improvement work? This moved the conversation away from the belief that the Hub needs to be a representative body toward one that acknowledges that the Hub and the larger NIC exist

to respond to a particular problem. The most recent solicitation for new members produced more than 20 applications using a modified process.

Onboarding members and preparing them for improvement work requires determining the information that new members will need to ensure that they are fully informed about the Hub's culture and work. Initially the Hub decided to initiate the onboarding process through a 30-minute welcome session where the current co-directors, Jennifer Flight and Amy Smith, share the norms of the Hub, speak to the culture that Hub members work in, and apprise the new members about steps they can take to become familiar with the Hub's current improvement work. Central to this process is a request that new members read *Learning to Improve* (Bryk et al., 2015) as well as become familiar with the improvement designs described in *The Improvement Guide* (Langley et al., 2009). This process is currently being examined and enhanced through a PDSA cycle.

Scaling the Hub for Reading Recovery's Renewal

With an infrastructure and work processes in place, the Hub will be ready for its next chapter which will involve scaling to engage others within the Reading Recovery network. Scaling represents an important developmental stage for the Hub and is likely the one with the greatest potential to shift the Reading Recovery network's current trajectory. Preliminary conversations among Hub members have begun to envision this stage. First, and most importantly, the core group of committed Hub members will remain. In addition to leading PDSA cycles, members also plan to work in collaboration with other elements of the network to facilitate PDSAs that are aligned with the Hub's network-level goals. These new PDSAs will be housed in smaller, user-focused teams and centered on identifying and solving specific problems which may be related to working with students, initial or ongoing training, and addressing concerns of district leaders and/or other constituencies beyond the network.

The Hub will also need to consider how best to interface with existing governing bodies so that promising ideas are approved for formal adoption. The charter allows the Hub to conduct improvement cycles, however, to make these changes part of Reading Recovery's standard operating processes, the Hub needs a mechanism to relay infor-

mation about successful change ideas to NATG. This will likely require negotiating a shared understanding of indicators of improvement (i.e., how do we know that a change is more than promising). A timeline for formal adoption will also be important. Most importantly, the engagement of NATG will support testing on a large scale allowing for a rigorous examination of promising changes.

Finally, in addition to formal communications to Reading Recovery governing boards, the Hub will need to engage in two-way communication with the larger Reading Recovery network and external constituencies. Already the Hub has drafted a communication plan and has begun informal communication through an independent Twitter account (@RRNA_HUB). In addition, there is a commitment to regularly connect with outlets recognized in the Reading Recovery network, including routine publication in this journal. The Hub now needs to determine how to solicit ideas from members of the Reading Recovery network to enable the Hub to learn from the network. It is critical that conversations about improvement challenges are informed by real-time, front-line perspectives.

Ultimately, this has been a period of significant progress for the Hub. The members have taken important steps toward the establishment of an NIC that serves the needs of the Reading Recovery network and supports expanded use of improvement science as a common approach to improvement. They have done this work in a way that engenders a collegial, problem-focused, solution-driven way of working. Most importantly, they have undertaken this effort with a commitment to igniting Reading Recovery's long-term renewal and engaging its members in a perpetual state of inquiry that, above all else, keeps the focus of its improvement work on the needs of the first-grade students that the program serves.

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