System Leadership for Continuous Improvement: The Role of District-Level Leaders in Creating the Conditions for System-Wide Improvement

Christina J. Dixon¹ & David Eddy-Spicer²

¹Carnegie Foundation for the Advancement of Teaching
²University of Virginia, Curry School of Education

Address for correspondence:
Christina J. Dixon, Associate, Networked Improvement Science
Carnegie Foundation for the Advancement of Teaching
51 Vista Lane, Stanford, CA, 94305.
Email: cd3dr@virginia.edu
Phone: 650-566-5168
Abstract

Educational researchers and practitioners are increasingly interested in continuous improvement as a systemic approach to improving student outcomes at scale. System leadership is among the most crucial factors in conditioning the uptake and integration of continuous improvement methods across a local educational authority or school district. Scant research exists, however, to shed light on the role of system leaders in creating district-wide conditions for continuous improvement. This chapter examines literature at the intersection of the fields of quality improvement, education, and leadership to synthesize current research-based knowledge about leadership behaviors that create the conditions for systemic continuous improvement in school districts. We develop an initial conceptual framework and then draw on relevant case studies and literature reviews, using an adaptation of the systematic review method of framework-based synthesis. Our review highlights how successful leaders of continuous improvement think, what they do, and where they focus their efforts to address complex, systemic challenges. The chapter concludes with a discussion of key themes, an elaboration of the initial conceptual framework, and proposed questions for research on leadership at the district level for systemic continuous improvement.

[183 words]

Keywords: continuous improvement, district level leadership, quality improvement, system leadership
In recent years, a small number of pioneering school districts has embraced continuous improvement as the fulcrum for improving student outcomes across their systems (David & Talbert, 2013; Park, Hironaka, Carver, & Nordstrum, 2013). Education researchers have likewise begun to recognize the promise of targeting the school district in fostering meaningful system-wide improvement in education (e.g., Daly & Finnigan, 2016; Honig, 2013). Both approaches restore the district or local educational authority to a primacy that has been embattled over the past two decades of market-oriented reforms in educational policy (Honig, 2008).

This renewed focus on system-wide improvement has been tightly linked to an emerging concern with system leadership (Hopkins et al., 2015), and the recognition of leaders’ centrality in change efforts (Smylie, 2016). The attention to leadership of improvement features in the language of the Professional Standards for Educational Leaders (PSEL) (National Policy Board for Educational Administration, 2015). One of the standards highlights that practicing continuous improvement is an essential part of how educators must develop the field to “promote each student’s academic success and well-being” (p.18), and charges education leaders with the professional responsibility to aim improvement efforts squarely at success for all students. LeMahieu et al., (2017) also highlight the importance of leaders’ efforts in enabling effective and sustainable improvement work to occur, explaining,

[W]hen a problem occurs in the system (e.g., poor student outcomes), leadership has the role and responsibility to investigate systems-based causes. This involves trying to pinpoint the interactions among structures, work processes and norms that are producing the current outcomes. (p. 15)
The above characterization of system leadership contrasts starkly with traditional hierarchical bureaucracy and leadership through top-down mandates. Through the lens of continuous improvement, problems lie in largely tacit processes, persisting due to systemic causes. In a complex system like education, effectively addressing problems requires work within and across organizational levels. It further places primacy on process improvement and on capability development through collaborative problem solving, rather than hinging solely on leadership decisions to implement the right solution or an immediate fix. Leaders must facilitate and lead the critical examination of their systems in ways that encourage learning and continuous improvement to occur system-wide. Little definitive guidance exists, however, about how education leaders can effectively enact such systems thinking in practice.

This chapter seeks to contribute to the education field’s understanding of how district-level leaders can best further district-wide continuous improvement efforts. We synthesize current research-based knowledge about leadership behaviors that create the conditions for successful continuous improvement. We are not concerned with bodies of research about effective education leadership practices in general or sources drawn primarily from school- or classroom-level contexts. Rather, our review emphasizes the role of superintendents and their leadership teams as the system-level leaders of school district improvement.

Available literature in education is limited. We draw on relevant findings regarding the effective leadership of quality improvement in multiple sectors along with an emerging research base around district-level improvement in education. Other industries have a more robust history of continuous improvement and have created bodies of guidance for leaders (e.g. Spear, 2009; Swensen, Pugh, McMullan, & Kabcenell, 2013). Our goal is to harvest relevant systems
leadership guidance from other sectors and translate it for the leadership of continuous improvement in education.

**Continuous Improvement**

The rapid growth of improvement efforts across multiple fields in recent years has led to wide variation in how the terms *quality improvement* and *continuous improvement* are currently understood and used across contexts. We use the definition articulated by Park et al. (2013) and subsequently elaborated by O’Day and Smith (2016) as described below. This definition offers practical criteria for distinguishing between systematic quality improvement approaches and other types of improvement due to its emphasis on understanding systems, using data strategically and employing a specific improvement methodology.

Based on their comprehensive review of relevant literature and change efforts in multiple sectors, Park et al., (2013) identified five core characteristics of quality improvement, subsequently characterized by O’Day and Smith (2016) as:

1. focused on system outcomes for a defined population of beneficiaries –*and* on the processes that lead to these results;
2. using variation in performance (including “failure”) as opportunities for learning and improvement;
3. taking a system perspective, with the understanding that systems are designed to get the results they produce, so if you want to change the results, you have to change the system;
4. evidence-based, including measurement of not only outcomes but processes (and resources); and
5. involving a specific and coherent methodology and processes (e.g., PDSA (Plan-Do-Study-Act) cycles, “Six Sigma,” and “Lean”). (p. 315)

Continuous improvement, as defined here, consists of embedding quality improvement into the everyday work of individuals in a system (Park et al., 2013), with a focus on system-wide outcomes.

**Initial Framework and Methods**

Our approach to rigorous review in this chapter is an adaptation of framework-based synthesis (Dixon-Woods, 2011). We have selected a framework developed by the Institute for Healthcare Improvement (IHI), a respected leader of quality improvement in healthcare. Building on decades of research and practice, IHI’s “Three Interdependent Dimensions of High-Impact Leadership in Health Care” (Swenson et al., 2013, p. 6) describes how leaders can best focus their efforts to achieve what IHI terms “Triple Aim” results: improve both the experience and outcomes of care while reducing cost. Swensen et al., (2013) offer three interdependent dimensions of leadership: the *mental models* that condition leaders’ thinking around challenges and solutions; the *behaviors* that shape what leaders do to make a difference; and the places that leaders *focus* improvement efforts (p. 6).

While the detailed content offered within this framework is particular to healthcare and may therefore not apply to education leaders, the overarching categories of leadership *mental models, behaviors* and *focus* appeal for two reasons. First, they organize IHI’s collective learning from experience and research as the organization has engaged healthcare leaders in systemic, ongoing change (Swensen et al., 2013, p. 5). Second, IHI’s thought leadership has been a primary source for scholars and practitioners seeking to practice quality improvement in education (Bryk et al., 2015). Consequently, IHI’s thinking about leadership for improvement is likely to have utility for educators seeking to lead continuous improvement in their districts.
Findings: Overview of Sources

Research concerning school districts intentionally engaging in continuous improvement is in its infancy, and primarily consists of individual or multiple case studies. Early contributions to the field include Elmore and Burney’s (1998) thorough description of efforts in New York’s District #2 that raised overall student performance and began to close the achievement gap in literacy, and McLaughlin and Talbert’s (2003) four-year longitudinal study of how three California districts succeeded in closing the achievement gap faster than comparison districts. More recently, Park et al.’s (2013) study offers detailed, descriptive cases of school districts in Menomonee Falls, Wisconsin and Montgomery County, Maryland. Both districts made early attempts at adopting continuous improvement methods district-wide, and both have achieved measurable improvement in instruction and operations. Standing out for its thorough methods, David and Talbert’s (2013) research describes Sanger Unified School District’s approach to significantly outpacing California’s rate of improvement on the Academic Performance Index and in increasing graduation rates among a student population that includes 73% low income and 84% minorities.

We also reviewed selected studies concerning the ways district-level leaders act to accelerate improvement, regardless of improvement approach. These sources are not specifically focused on leadership for continuous improvement in education; nonetheless their findings may have relevance for education leaders seeking to build a solid foundation for such work. The strongest of these studies focus deeply on multiple cases (Honig, 2013; Snipes, Doolittle & Herlihy, 2002; Togneri & Anderson, 2003). In particular, Snipes, Doolittle and Herlihy’s (2002) work stands out for its comparison of practices in improving and non-improving districts as opposed to relying on the more common outlier study design. Comprehensive literature reviews that include treatment of district leadership to improve student learning (Leithwood et al., 2004).
the role of district central offices in improving instruction and student achievement (Mac Iver & Farley, 2003), and leadership for educational change (Schwahn & Spady, 2001) are also sources for this review.

The sources cited in healthcare and industry commonly draw on both research and practice to distill leadership lessons that deliver results. Notably, in addition to IHI’s “High Impact Leadership” (Swensen et al., 2013, p.6) framework that serves as the conceptual framework for this review, Steven Spear’s *Chasing the Rabbit* (2009) mines multiple case studies of organizations across a wide variety of industries to distill commonalities that enable them to outpace their competitors in improving their ability to deliver results for their customers. Similarly, Toussaint and Ehrlich (2017) cite research on leadership for improvement as well as their learning from working with 40 healthcare CEOs to successfully improve system performance. This review also includes works published by organizations that distill leadership lessons from improvement literature and the practice of organizations that show remarkable results in their field, such as the Shingo Institute (Shingo, 2016).

In healthcare and other industries, the breadth and depth of research supporting our synthesis is sizeable and draws on decades of improvement work. Research in education, in contrast, is limited by the size of the research base and the design of available studies. Relatively few case studies are available, and of those only a very few examine more than one district. All focus on outlier districts that have achieved notable results, using a retrospective design to document progress. Furthermore, none focuses exclusively on the role of top district leaders and how their actions may create conditions for continuous improvement of student outcomes. For these reasons, the available research offers some suggestive evidence, but does not substantiate
any cause and effect relationships between district conditions or leader behaviors and district-wide success.

The state of the research in the field of continuous improvement in education underscores the importance of examining related sources across sectors. Where findings from multiple studies and disciplines identify common effective leadership actions and characteristics, their strength increases with the number of cases that demonstrate a common result. Additionally, the duration and scale of the efforts outside of education make a strong case for the validity of identified leadership actions and characteristics in a given sector, and offer promising starting points for exploring the nature of leadership for improvement in education.

**Findings: Thematic Synthesis**

The following thematic synthesis of findings from relevant sources across sectors is organized according to IHI’s “High-Impact Leadership” (Swenson et al., 2013, p.6) framework, and pinpoints where the literatures converge and conflict to describe the current state of knowledge regarding district-level leadership for continuous improvement in education. Findings are grouped by theme within each of IHI’s three interdependent dimensions of leadership: “how leaders think about challenges and solutions” (*mental models*), “what leaders do to make a difference” (*behaviors*), and “where leaders need to focus efforts” (*focus*) (Swensen et al., 2013, p. 4).

**How leaders think about challenges and solutions.**

While much of the literature reviewed concentrated on leader actions, a significant subset enumerated mental models conducive to effective leadership of quality improvement. Literature from healthcare, industry and education all elaborated on the common themes that leaders must
value learning, think systemically, respect every individual and embrace personal responsibility for their organization and its performance.

**Value learning.** From the early days of quality improvement’s application in healthcare, the importance of learning has been emphasized for all, with a special role for leadership. In *A Primer on Leading the Improvement of Systems*, IHI co-founder Don Berwick asserted, “the effective leader must understand that the road to improvement passes through change and that one efficient way to change is to learn from the actions we ourselves take” (1996, p. 312). Steven Spear (2009) echoes that view, concluding that leaders of continuously improving organizations must adopt the role of “Learner in Chief” (p. 294), modeling the learning mindset that must be cultivated in staff across the organization. Further explicating what it means to value learning, Toussaint and Ehrlich (2017) emphasize the importance for leaders to recognize that they do not have all the answers, to adopt a genuine willingness to change, and to model humility and curiosity in their interactions with others. These mindsets are prerequisites for leadership behaviors that support an organizational culture of improvement.

While not specifically focused on the leader’s role, Lucas and Nacer’s (2015) more recent review drawing primarily on psychological literature related to healthcare improvement identifies learning as one of “five core improvement habits” (p. 8). This research reinforces the importance of ensuring that the ability to develop this habit is embedded in daily work, which organizational leaders are uniquely positioned to do.

In education, Park et al.’s (2013) offer a rare multiple case study of continuously improving districts that supports the need for leaders to value their own learning. Among the cross-cutting themes identified in their analysis was that “leaders of continuous improvement bring a learning mindset to the work” (p. 23).
Think systemically. Playing a role in industry similar to that of IHI in healthcare, the Shingo Institute has synthesized the thought leadership of quality experts ranging from Ford, Juran, Deming and Ohno to Senge, Covey and Womack into a model for operational excellence (Shingo, 2016). Among the principles enumerated in this model is “think systemically,” which the Shingo Institute defines as “understanding the relationships and interconnectedness within and between systems” (Shingo, 2016, p. 42).

Thinking systemically has also been recognized as important by improvers in the field of education (Shaked & Schechter, 2017). The authors of the PSEL standards included “adopt(ing) a systems perspective” as a key action of effective educators seeking to fulfill their school improvement standard (National Policy Board for Educational Administration, p. 18). Scholars at the Carnegie Foundation for the Advancement of Teaching have identified “seeing the system” as an essential principle of quality improvement (Bryk et al., 2015). Furthermore, they have noted that within continuous improvement organizations, problems of practice are understood as products of systems (Bryk et al., 2015) and that leaders have the responsibility to try to understand what causes their systems to produce their current results (LeMahieu et al., 2017). From a practical perspective, the case study of Montgomery County School District’s continuous improvement efforts specifically calls out Superintendent Weast’s insistence on “looking at the system as a whole” (Park et al., 2013, p.15) as an important success factor. Furthermore, all three organizations studied by Park et al. insisted on adopting a “systems-thinking approach” (2013, p. 23) to their work that led them to recognize previously unnoticed interdependencies of key organizational processes. Other case studies of successful continuously improving districts similarly highlight the strategic importance of viewing the
system as the unit of change, and ensuring that local improvements contribute to overall district health (Bisby et al., 2009; David & Talbert, 2013; Kirp, 2013; McLaughlin & Talbert, 2003).

**Respect every individual.** The Shingo Institute (2016) recognizes valuing every individual and supporting them in fulfilling their potential as another key principal of operational excellence, and counsels leaders to exercise humility and trust others to make good decisions. IHI also makes the assertion, based on extensive review of the quality improvement literature and practitioner expertise, that leaders must embrace the idea that everyone in their organization is an improver (Swensen et al., 2013). Similarly, Toussaint and Ehrlich (2017) caution that leaders must embrace the reality that their organization’s greatest asset is the person on the front line.

Schwahn and Spady (2001) go further to offer an articulation of the leader beliefs that support this value in their book, *Total Leaders*. This extensive review and synthesis of literature related to quality improvement and productive, sustained change in education finds that effective leaders believe that “a tremendous amount of power lies within each person and that their role is to create work environments that let that power and capability emerge” (Schwahn & Spady, 2001, p. 20). Similarly, Sanger Unified School District in California called out respect for people, starting with modelling by district-level leadership, as an essential element of their culture supporting continuous improvement (David & Talbert, 2013). Taken together, these sources point to the need for effective leaders of improvement to respect every person and value their contributions and potential to grow.

**Embrace personal responsibility.** The theme of leadership responsibility recurs throughout the literature (Berwick, 1996; Deming, 2000; LeMahieu et al., 2017; Schwahn & Spady, 2001; Shingo, 2016; Spear, 2009). Through the lens of continuous improvement, system
leaders inhabit a role that offers a unique view across organizational siloes, along with the power to effect changes in the system as needed to accelerate progress. With that positioning, many argue, comes the responsibility to act intentionally to support the improvement efforts of people within the system. As Bryk asserted in his keynote delivered at the Carnegie Foundation’s 2017 Summit on Improvement in Education, “we should be haunted by the predictable failure of our systems” (Bryk, 2017, p. 10). Further supporting this view, Togneri and Anderson (2003) found that superintendents of rapidly improving districts accepted responsibility for their district’s poor performance. Willingness to courageously acknowledge poor performance and question current practices appeared critical to superintendents’ efforts to build will for change.

What leaders do to make a difference.

Across sectors, the literature examining approaches to leading quality improvement efforts is filled with recommended actions for leaders. This section of the review identifies the strongest, common themes regarding effective leader behaviors for improvement that emerge from both within and outside the field of education.

Set a vision, purpose and strategy focused on results for students. The literature regarding leadership for quality improvement across sectors consistently identifies setting and aligning the organization around a clear direction as an essential role of leaders (Berwick, 1996; Lunenberg, 2010; Park et al., 2013; Schwahn & Spady, 2001; Shingo, 2016; Snipes et al., 2002; Spear, 2009; Swensen, 2013; Togneri & Anderson, 2003). Furthermore, it is the most consistent finding across the education literature regarding what leaders do to support continuous improvement (Bisby et al., 2009; David & Talbert, 2013; Kirp, 2013; McLaughlin & Talbert, 2003; Park et al., 2013). In keeping with quality improvement leader W. Edwards Deming’s counsel to “create constancy of purpose” (2000, p. 23), leaders are instructed to establish a clear
and compelling aim and purpose (Berwick, 1996; Schwahn & Spady, 2001; Shingo, 2016), maintain “relentless focus” (Swensen et al., 2013, p. 86) and build will around a shared vision (Schwahn & Spady, 2001; Swensen et al., 2013). This includes aligning the organizational design and providing the conditions to support the achievement of that vision (Spear, 2009; Swensen et al., 2013).

The education literature further specifies the essential elements of a vision to drive continuous improvement in schools and districts. As previously mentioned, the Professional Standards for Education Leaders (National Policy Board for Educational Administration, 2015) stipulate that the goal of continuous improvement is to “promote each student’s academic success and well-being” (p. 18), arguing that in education, the compelling purpose worthy of relentless focus across the field is to drive better outcomes for every child. Aligned with this standard, all of the cases studies of continuously improving districts identified the need for the superintendent to shepherd the establishment of a common vision and strategy that includes a long-term commitment to continuous improvement focused on improving student learning (Bisby et al., 2009; David & Talbert, 2013; Kirp, 2013; McLaughlin & Talbert, 2003; Park et al., 2013). According to many of these studies, goals must be unambiguous, and district leaders have the responsibility to ensure that they carefully choose a small number of well-integrated priorities and strategies that form a cohesive system for achieving those goals (Bisby et al., 2009; David & Talbert, 2013; Kirp, 2013).

**Develop capability.** The leadership behavior that figures most prominently is to develop the core capabilities of improvement and the skills to lead the development of improvement capabilities in others (e.g. David & Talbert, 2013; Honig, 2013; Leithwood, 2010; McLaughlin & Talbert, 2003, National Policy Board, 2015; Park et al., 2013; Spear, 2009; Swensen et al.,...
2013). Improvement leaders have the responsibility to both directly support the growth and learning of their people, and to establish “the cascade of capability development throughout the organization” (Shingo, 2016, p. 38). Spear (2009) describes how developing individual capability across an organization yields, “organizational capacity to be self-correcting, self-improving, and self-innovating” (p. 264).

Those promoting and engaged in continuous improvement in the field of education confirm this emphasis. PSEL standards (National Policy Board for Educational Administration, 2015) describe effective leaders as those who develop skills and capability, and promote their staff’s leadership of improvement. The continuously improving district case studies similarly emphasize the need for district leaders to focus heavily on building capability for themselves and their school level staff, or as David and Talbert (2013) describe it, to “shift to leadership for learning” (p. 23). They must learn to grow principals as instructional leaders and improvers, and in turn, principals must learn to grow the capabilities of teachers (David & Talbert, 2013).

In the education literature, the focus on developing individual capability in service of building organizational capacity extends beyond the superintendent to the central office. According to multiple case studies, central offices need to engage in improving their own work to become capable of modeling the inquiry and risk-taking behavior needed for the rapid learning that continuous improvement requires (Agullard & Goughhour 2006; David & Talbert, 2013; Kirp, 2013; McLaughlin & Talbert, 2003; Park et al., 2013). Perhaps most strikingly, Honig’s 2013 study of effective central office practices for helping schools to dramatically improve student learning outcomes identified the need for “superintendent and other central office leadership that will help staff continuously build their capacity for better performance” (p. 1). In her extensive observations of three school systems engaged in such transformation, Honig
recognized patterns in leader behavior that included hands-on coaching and teaching of staff toward continuously improving their work to meet new system demands. The experiences of the districts studied suggest that leaders must not only provide for, but actively lead the development of their people for continuous improvement to flourish.

Create a culture of improvement. The notion that leaders have primary responsibility for creating an organizational culture that supports improvement figures prominently in improvement literature from healthcare and industry (Kaplan, Provost, Froehle, & Margolis, 2012; Shingo, 2016; Swensen et al., 2013), as well as in the majority of case studies of continuously improving districts (David & Talbert, 2013; Elmore & Burney, 1998; Kirp, 2013). Shingo’s (2016) framework identifies driving and managing culture as a lever for top leaders in driving improvement-aligned behaviors in their staff. Likewise, the Model for Understanding Success in Quality (MUSIQ) in healthcare (Kaplan et al., 2012) calls out creating a culture (values, norms and beliefs) that supports staff in pursuing quality improvement as a key factor in successful improvement efforts. Guidance for how leaders can act to create such a culture includes noticing and calling attention to specific behaviors they observe that are close to the ideal (Shingo, 2016), communicating and modeling desired behaviors (Swensen et al., 2013), ensuring transparency (Swensen et al., 2013), practicing reflection (Berwick, 1996), asking effective, open-ended questions (Toussaint & Ehrlich, 2017), engaging in active listening (Swensen et al., 2013), and showing a willingness to change upon learning something new (Shingo, 2016).

In the field of education, the literature concerning continuously improving school districts repeatedly identifies the need for the central office to nurture a district-wide culture supportive of such improvement (David & Talbert, 2013; Elmore & Burney, 1998; Kirp, 2013), although the
features of this culture deemed most important vary significantly across districts. Sanger emphasizes positive relationships, respect for people, collaboration and shared responsibility, and “reciprocal accountability” that honors professionalism and is supportive rather than punitive (David & Talbert, 2013, p. 27). Others note the importance of cultivating trust (Agullard & Goughhour, 2006; Kirp, 2013; McLaughlin & Talbert, 2003), the need for transparency (Elmore & Burney, 1998) and open communication (Agullard & Goughhour, 2006).

**Span boundaries.** The leadership function referred to as “boundary spanning responsibility” (Lunenberg, 2010 and Spear, 2009) is defined by Spear as being “system-oriented – responsible for the design and operation of processes at levels of aggregation for which others have insufficient perspective and authority” (p. 263). Swensen et al. (2013) call this responsibility “boundarilessness” (p. 4) while recommending that leaders “model and encourage team work and systems thinking” (p. 5).

The literature highlights two ways that leaders can practice boundary spanning behavior. The first is to set a vision for changing the system, rather than merely making change within it (Berwick, 1996; Honig, 2013; Lunenberg, 2010). Berwick (1996) asserts that leaders must challenge the status quo and advocate for a clear alternative to the current system. In practice, Honig’s (2013) observations of successfully transforming central offices led her to conclude that effective leadership “sets a vision for ambitious, performance oriented change that moves beyond tinkering to true transformation” (p. 9). Second, leaders must both breakdown silos and build others’ capability to work across them to solve problems (Honig, 2013; Park et al., 2013). Due to districts’ organizational complexity, many entrenched problems lie at the intersection of traditional departments and organizational levels. Therefore, all staff must learn to
collaboratively redesign processes to achieve desired outcomes rather than conform to custom. Leaders must model and drive this learning to enable continuous improvement to take hold.

**Where leaders need to focus efforts.**

In regard to the question of where leaders can best direct their attention and energy in order to accelerate improvement, the literature suggests the importance of leaders creating organizational conditions supportive of continuous improvement. Within this area of focus, promoting organizational alignment and creating an effective improvement infrastructure are two key areas needing targeted leader attention.

**Promote organizational alignment.** Perhaps the simplest description of this focal issue comes from the Shingo Institute, which asserts that leaders ensure “that the systems are designed so that it is easier to do the right thing than the wrong thing” (2016, p. 40). This statement implies a recognition that often work systems are not built to encourage desired behavior, and that it is the responsibility of leadership to fix this problem where it exists.

The education literature offers significant evidence of the importance of aligning district infrastructure and ensuring coherence across all elements of the instructional core for successful continuous improvement (e.g. O’Day & Smith, 2016; Snipes et al., 2002; SREB 2010; Togneri & Anderson, 2003). Honig’s (2013) study of three successfully transforming districts offers an example of how this can be done, suggesting “transformation should involve…developing and aligning performance-oriented central office services to support district-wide instructional improvement” (p. 1). As these and other continuously improving districts have learned, district offices must do the hard, ongoing work needed to engage staff across the district in aligning all structures, programs and processes with the district vision and goals, and to integrate new initiatives into the existing strategy in ways that maintain its coherence (Bisby et al., 2009; David
& Talbert, 2013; Honig, 2013; Kirp, 2013; McLaughlin & Talbert, 2003; O’Day & Smith, 2016; Park et al., 2013). As Childress, Elmore & Grossman (2006) observed based on their intensive engagement with 15 improving districts across the United States, “success depends on the degree to which the strategy is implemented consistently across an entire system over several years. Doing this requires the creation of an organization whose culture, systems and structures, resources, and stakeholder relationships support the strategy” (Creating a Coherent Organization, para. 12).

One notable aspect of alignment particular to school districts concerns the role of school boards. Although school boards are absent from the many case studies of continuously improving districts, those that do mention them make a case for the importance of solid board support to the success of a district’s continuous improvement efforts. Superintendents in both Montgomery and Menomonee Falls stressed the importance of aligning with the board around a common vision and goals (Park et al., 2013), and Sanger’s district leaders described purposeful efforts to nurture strong relationships with school board members and maintain their solid, sustained support for continuous improvement (David & Talbert, 2013). Reinforcing these leader perceptions, McLaughlin and Talbert’s (2003) evidence from surveys and interviews showed that district administrator ratings of school board support for the reform efforts were the only context variable studied that proved to be a significant predictor of whether the district succeeded in developing the central office as a learning organization and providing instructional support to schools.

**Create an effective improvement infrastructure.** The literature reviewed offers multiple examples of how leaders can build organizational systems and processes to support improvement. High level recommendations include “integrate improvement work into daily
work at all levels” (Swensen et al., 2013, p. 23) and creating and using feedback loops to improve performance (Schwahn & Spady, 2001). More concrete recommendations common in the literature involve establishing disciplined improvement methods, supporting the effective use of data, and developing leaders from within the district.

**Disciplined improvement methods.** While their specific methodologies differed, the district leaders studied established disciplined improvement processes to embed quality principles into the way work was done system-wide. These districts developed their staff’s capability to use a shared improvement approach, whether they conducted improvement cycles (Elmore & Burney, 1998; Park et al., 2013) or Cycles of Inquiry (McLaughlin & Talbert, 2003), formed improvement-focused Professional Learning Communities (David & Talbert, 2013), or adopted the Plan-Do-Check-Act (PDCA) cycle, Six Sigma or Lean (Bisby et al., 2009; Park et al., 2013).

**Effective use of data.** Key to this approach is that “decisions must be grounded in evidence” (David & Talbert, 2013, p. 8), a requirement that needs to be supported by a robust and aligned, district-level measurement and data analysis infrastructure (Agullard & Goughhour 2006; Kirp, 2013; McLaughlin & Talbert, 2003; Park et al., 2013). Leaders need to ensure that appropriate data systems (National Policy Board, 2015) and professional development prepare and support district personnel at all levels in making data-driven decisions (Mac Iver & Farley, 2003; Snipes et al., 2002; Togneri & Anderson, 2003). Specific recommended uses of data for improvement include using data to monitor progress toward goals (Park et al., 2013; Waters & Marzano, 2006); planning, organizational learning and accountability (Leithwood, 2010); and shifting the focus of evaluation to promote improvement (Park et al., 2013). This last point may represent the greatest departure from the status quo of data use in most school districts. It
requires a change in focus from accountability to learning, and an emphasis on formative and process-level data as an essential complement to the more common use of summative outcomes data.

**Developing leaders from within.** One other key role of district leaders prominent in the experience of a couple of improving districts was the need for them to create intentional pipelines to grow new leaders from within. Recognizing that having the experience of doing continuous improvement is important to learning how to lead it effectively, Sanger integrated a focus on leadership development into its strategy from the beginning (David & Talbert, 2013). New York’s District #2 also had an intentional plan to develop leaders internally, and when it failed to produce improvement savvy leaders at the rate needed by the district, Elmore and Burney (1998) called out that shortcoming as a specific threat to the long term sustainability of the district’s continuous improvement efforts.

**A Revised Framework**

The thematic synthesis enables us to elaborate our initial framework. The revised framework shown in Figure 1 below should be read from bottom to top, with each layer building on the foundation laid by the one preceding it.

[Figure 1 here.]

The above expanded framework represents an initial model of how education leaders initiate and sustain continuous improvement across their districts and offers a starting place for further inquiry. According to this hypothesis, leader mental models set a foundation upon which system-wide continuous improvement can be built, motivating and enabling leaders to act in ways that are conducive to the effective leadership of continuous improvement efforts. In turn, specific leader behaviors, when aligned with the right mental models, can create fertile ground.
for improvement to take root. Further, the most successful district-level leaders focus their efforts on high leverage organizational challenges that they are uniquely positioned to address. Together, these mental models, behaviors and areas of focus enable such leaders to create the conditions for continuous improvement to become embedded in everyone’s work, every day, district-wide. Doing work in this way then produces sustained progress in improving student outcomes and the system that produces them.

**Conclusion**

The literatures within and outside of education generally converge around common themes related to the nature of leadership for continuous improvement. This convergence suggests that literature from outside of education may bear important messages for our understanding of system leadership in education. That said, the evidence in education is very limited, and additional field research is needed to focus specifically on understanding the practice of leadership of continuous improvement district-wide. This synthesis of the literature highlights several compelling questions for further study, including: What are the mental models and moves of leaders who successfully initiate district-wide continuous improvement? How do effective leaders prioritize their actions? What do they do to overcome common barriers?

Continuous improvement and systems thinking have both been identified as promising approaches for educators seeking to address complex, systemic challenges and sustainably improve student outcomes (O’Day & Smith, 2016; Shaked & Schechter, 2017). The findings of this inquiry suggest that systems thinking is an essential component of district-level leadership of continuous improvement, and that continuous improvement may provide an approach for leaders seeking to enact systems thinking and reap rewards district-wide. Therefore, there is likely benefit in investigating the nature of the intersection between systems thinking and continuous improvement and its practical implications for the field. How can efforts to practice systems...
thinking and continuous improvement at the district level inform each other? In what ways could such efforts be integrated to accelerate the achievement of student outcomes system-wide?

The contributions of this work need not be limited to the field of education, but may add to the fields of systems thinking and continuous improvement more broadly. Future inquiry could also include investigating the questions of whether and how the special attributes of education systems could enable the field of education to expand or elaborate on what is known about leadership of continuous improvement within complex systems. We have much to gain—and much to learn—from the rich theoretical, empirical, and practical wisdom offered through the enactment of systems thinking in the leadership of system-wide continuous improvement in education.
References


Working copy. Do not distribute without authors’ permission.


Working copy. Do not distribute without authors’ permission.


Framework-based synthesis is a form of theory-driven review, which Gough, Sandy and Thomas (2012) characterizes as ‘configurative’ approaches that are most useful for elaborating and testing patterns drawn from a widely varied body of literature. Framework synthesis begins with the identification of an initial theory that enables the reviewer to identify themes a priori, and then through the process of review, to test the initial framework against the literature.
Sustained, accelerating improvement toward district-wide goals for improving student outcomes

Continuous improvement embedded in daily work district-wide

Where Leaders Need to Focus Efforts
- Promote Organizational Alignment
- Create an Effective Improvement Infrastructure

What Leaders Do to Make a Difference
- Set a Vision, Purpose and Strategy Focused on Results for Students
- Create a Culture of Improvement
- Span Boundaries
- Develop Capability

How Leaders Think about Challenges and Solutions
- Value Learning
- Respect Every Individual
- Think Systemically
- Embrace Personal Responsibility

Figure 1. Revised Framework for District-Level Leadership of Continuous Improvement. Adapted from Executive Leadership for Continuous Improvement in K-12 Public School Districts: A Comparative Case Study (Unpublished Capstone Proposal), by Christina J. Dixon, 2017, University of Virginia, Charlottesville, VA.