THE NATIONAL CENTER ON SCALING UP EFFECTIVE SCHOOLS

Educational Innovation and Problems of Improvement:

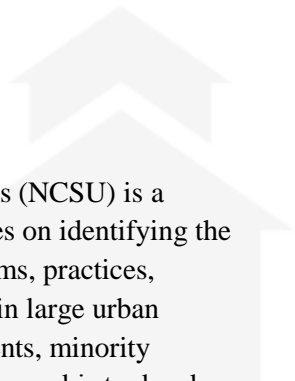## Aligning Politics, Policies, and Practice

Donald J. Peurach

VANDERBILT
PEABODY COLLEGE

EDC Learning transforms lives.

FLORIDA STATE UNIVERSITY 1851

Georgia State University

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Donald J. Peurach
University of Michigan

Author Note

Donald J. Peurach, School of Education, University of Michigan.

Address all correspondence to: Donald J. Peurach, PhD, School of Education, University of Michigan, 610 E. University, Ann Arbor, MI, 48109. Phone: 734-763-9497. E-mail: dpeurach@umich.edu. Dr. Peurach is an Associate Professor of Educational Policy, Leadership, and Innovation. His research examines the production, use, and management of knowledge in the context of large-scale, network-based educational improvement initiatives.

ABSTRACT

The purpose of this white paper is to critically examine continuous improvement as central to the practice of educational innovation, focusing specifically on innovating organizations that develop and field large-scale, network-based, systemic improvement initiatives. The analysis frames the continuous improvement of such enterprises as spanning three domains: program improvement, network improvement, and executive improvement. Drawing on formal research and personal experience, the primary argument is that, while the politics and policies of educational innovation interact to drive a need for continuous improvement, they are not developed and coordinated in ways that support continuous improvement as integral to the practice of educational innovation. Prospects for success could be increased with a positive co-alignment of the politics, policies, and practice of educational innovation.

Keywords: innovation, innovation policy, continuous improvement, networks.

Type of article: Review/essay.

Educational Innovation and Problems of Improvement:

Aligning Politics, Policies, and Practice

The past five years have seen a groundswell of enthusiasm for continuous improvement as integral to the practice of educational innovation. This enthusiasm has roots in increasing recognition of complexity and uncertainty endemic to the work of developing and fielding large-scale innovations that address enduring educational problems, needs, and opportunities.

The purpose of this white paper is to critically examine continuous improvement as central to the practice of educational innovation, with two aims: identifying problems that could complicate efforts to take up the call for continuous improvement; and motivating discussion about working proactively to address those problems. I do so by reflecting on recent research on large-scale educational innovation, as well as on my experiences as a researcher, participant-observer, and advisor in a diverse array of large-scale innovation enterprises.

The analysis is structured in four parts.[1] I begin by conceptualizing the "practice of educational innovation" as shaped by the contemporary political and policy context, and I continue by framing categories of continuous improvement that follow. I then identify and examine challenges to incorporating continuous improvement into the practice of educational innovation. I conclude by raising questions about the possibilities of addressing these challenges by aligning the politics, policies, and practice of educational innovation.

The Practice of Educational Innovation

Consider the practice of educational innovation as the work of developing and fielding ideas, strategies, and programs (i.e., innovations) intended to effect fundamental changes in

---

[1] For additional perspective, this analysis can be read in combination with Bryk, Gomez, Grunow, and LeMahieu (2015), Dolle, Gomez, Russell, and Bryk (2013), Donovan, Snow, and Daro (2013), Scherrer, Israel, and Resnick (2013), and Sabelli and Dede (2013), all of whom attend to issues of infrastructure development that parallel and complement issues raised in this analysis. It is precisely this pattern of attention to infrastructure development across researchers and sources that warrants broader conversation in educational policy and reform communities.

established practices, capabilities, knowledge, and norms in schools (Peurach, 2015). Thus

defined, the practice of educational innovation focuses on effecting transformational changes in

the activities, understandings, and values of teachers and school leaders, and on developing the

designs, practical knowledge, and implementation supports needed to do so.

The practice of educational innovation includes locally-directed improvement initiatives

in schools and districts, with the aim of addressing local needs and problems and with no

ambitions for taking them any farther. However, over the past 25 years, consistent themes

running through education politics and policy have interacted to drive the emergence of new

types of innovating organization with capabilities to establish and manage large-scale networks

that engage schools and districts in developing and using systemic, multi-component

improvement programs (Peurach, 2015). These themes include a focus on schools as the unit of

improvement and accountability, on systemic (rather than targeted) interventions, and on scale

and sustainability in educational innovation.[2]

Some of these innovating organizations operate within the K-12 governance structure;

many others operate beyond. Often couched in the language of "turnaround," all operate amidst

resources and incentives that direct their efforts toward improving educational opportunities and

outcomes for students historically underserved by US public schools, either by improving

existing schools or opening new ones.

---

[2] For example, policy activity in which these themes run thick include: the National Science Foundation Statewide
Systemic Initiative, launched in 1991; the New American Schools initiative, launched in 1991; the Goals 2000 --
Educate America Act of 1994; the Improving America's Schools Act of 1995; the Obey-Porter Comprehensive
School Reform Demonstration Act of 1997; the NewSchools Venture Fund, launched in 1998; the Reading
Excellence Act of 1999; the No Child Left Behind Act of 2001; the federal Race to the Top program, launched in
2009; the federal Investing in Innovation program, launched in 2010; and the federal Charter School Grant Program
competition, launched in 2010. This policy activity has been complemented with philanthropic activity through
which these themes also run, including large-scale grant programs by the Bill and Melinda Gates Foundation and the
Walton Family Foundation (among others).

These innovating organizations are increasingly held accountable for doing just that. Specifically, both federal and private competitive grants programs increasingly press them to incorporate rigorous evaluations that meet the evidence standards of the Institute of Education Science's What Works Clearinghouse, with the aim of generating scientific knowledge of what works to improve student outcomes at scale. Rigorous evidence of positive, replicable program impact then becomes a key resource for securing additional funding and recruiting new schools.

One consequence of this focus on accountability, evidence, and impact is that the vast majority of research on these large-scale, network-based enterprises has focused primarily on program implementation and effects. Even so, a small (and growing) body of research examines the practice -- the day-to-day work -- of innovating organizations both in establishing these networks and in developing and fielding systemic, practice-focused educational innovations.[3]

One clear theme that emerges from this research is that the work of these innovating organizations is complicated, and requires capabilities for development, recruiting, implementation support, evaluation, business systems development, logistics (conference planning, travel, publication), and executive management (Glennan et al., 2004; Peurach, 2011).

Another clear theme is that organizing, coordinating, and managing this work in ways that quickly yield positive program impact is fraught with complex and intractable problems and puzzles (e.g., Cohen et. al, 2014; McDonald et. al, 2009; Peurach, 2011; Peurach, 2015). The roots of these problems and puzzles are deeply anchored in interdependencies among:

- Underperforming and newly-created schools as contexts for reform.
- The complex, multi-component programs needed to serve them.
- Emerging and still-developing innovating organizations.
- Funders that prioritize educational needs and problems, establish time constraints on the work, and define administrative requirements.

---

[3] See, for example: Berends, Bodilly, & Kirby, 2002; Cohen, Peurach, Glazer, Gates, & Goldin, 2014; Datnow, Hubbard, & Mehan, 2002; Farrell, 2015; Farrell, Wohlstetter, & Smith, 2012; Marsh, Hamilton, & Gill, 2008; McDonald, Klein, & Riordan, 2009; National Charter School Research Project, 2007; Peurach, 2011.

- Evaluators that establish parameters for recruiting schools, for the scope of allowable adaptation in the course of a rigorous evaluation, and for the categories and quality of evidence that innovators and their schools must generate.
- Fragmented, turbulent environments that constantly redefine the parameters of school improvement and the metrics of success.

In contrast to "turnaround," researchers have begun to frame the full scope of these efforts in terms of "infrastructure building."[4] While the metaphor of "turnaround" conveys possibilities for an immediate pivot in performance, the metaphor of "infrastructure building" conveys an image of long-term nation-building and societal development better measured in decades than in years (Peurach & Neumerski, 2015).

Indeed, developing large-scale networks that can effect replicable improvement in practice and outcomes requires that these innovating organizations compensate for some of the deepest and most enduring problems of US public education: for example, weak pre-professional and continuing development of teachers and school leaders; weaknesses in practice-focused educational research; and the lack of consensus around the purposes of (and performance expectations for) schools.

Framing the Work of Continuous Improvement

Thus, over the past 25 years, educational politics and policies have interacted to have a profound effect on the practice of educational innovation: expanding the scope, scale, and organization of educational innovations and, with that, introducing and exacerbating complexity and uncertainty in the work of practicing innovators. They have also interacted to press practicing innovators to embrace (rather than sidestep) complexity and uncertainty, in that innovators' primary funding streams have them both as accountable for positive program impact and as active agents in the production of scientific knowledge.

---

[4] For example, see: Cohen and Moffitt (2009); Cohen et al. (2014); Duke and Salmonowicz (2010); Hatch (2013); Hopkins, Spillane, Jakopovic, and Heaton (2013); Mintrop and Trujillo (2005); and Peurach (2006; 2011).

Indeed, in the contemporary educational reform context, scientific knowledge of "what works" is widely recognized as a primary *outcome* of the work of large-scale, systemic educational innovation. By contrast, it is a comparatively weak *input* to this work. Again, the established educational research enterprise in the US had long been criticized as weak and disconnected from practice. Moreover, it is only in the past 10 to 15 years that researchers have begun to make the practice of large-scale, network-based educational innovation a primary locus of inquiry.

As such, rather than by appealing to scientific knowledge, researchers have reported that leading innovating organizations manage complexity and uncertainty through continuous, collaborative learning and improvement. This learning activity is distributed among innovating organizations and their partner schools, districts, evaluators, and funders (Cohen et al., 2014; Datnow & Park, 2009; McDonald et al., 2009; Peurach, 2011, Peurach & Glazer, 2012), and often supported by external researchers and partners (Peurach, Glazer, & Lenhoff, 2014).

This continuous learning and improvement plays out in three domains: program improvement, network improvement, and executive improvement. While often confounded in practice, these domains are analytically distinct. Each has, as a primary focus, a fundamentally different unit of improvement. Further, each places different demands on the knowledge and capabilities of external researchers and partners that aim to assist innovating organizations in improving (and in developing capabilities for self-improvement) in each of these domains.

Program improvement. Program improvement focuses on a practical problem, need, or opportunity that arises from the design and implementation of the school-level improvement program, and on developing the knowledge, designs, and resources that support practitioners (and those assisting them) in responding positively to that problem, need, or opportunity.

Program improvement typically features small-scale prototyping in the context of practice, through collaboration among practitioners, developers, coaches, and researchers.

A hallmark of program improvement lies in anchoring this work in explicit theories of both the problem and the solution, and in the critical examination of those theories using evidence of implementation and outcomes. As such, key products of program improvement include new capabilities for practice, new knowledge of practice, and new resources for recreating capabilities for (and knowledge of) practice in new sites.

Program improvement is most often associated with design-based research (Anderson & Shattuck, 2012; Penuel, Fishman, Cheng, & Sabelli, 2011; Fishman et al., 2013, Moss & Haertel, in press).[5] However, program improvement can also include formal processes of "data driven" improvement and decision making through which groups and individuals engage in structured plan-do-study-act cycles that focus on practical problems, needs, and opportunities that arise in their specific, local contexts.

Network improvement. Network improvement focuses on building enterprise-wide infrastructure to support the production, use, and refinement of knowledge and capabilities at scale, among all participating members of the network. Network improvement includes the development of school-level capabilities for program improvement of the type described above: for example, through structured processes that standardize school-level practice and problem solving. It also includes the development of the resources needed to leverage new knowledge as it emerges throughout the network: for example, information systems that link members of the network; opportunities supporting the person-to-person exchange of knowledge among members

---

[5] Research-practice partnerships are another form of program improvement as described here (e.g., Coburn, Penuel, & Geil, 2013; Penuel, Allen, Coburn, & Farrell, 2015). However, such partnerships are more often associated with locally-directed improvement initiatives in schools and districts, rather than in the development of the types of large-scale, systemic innovations under consideration here.

(e.g., via shared work, mentoring, and professional learning communities); common designs for (and vocabularies of) practice and improvement; and means of codifying new knowledge to support its movement throughout the network.[6]

Network improvement of this sort is exemplified by the efforts of the Carnegie Foundation for the Advancement of Teaching to develop and support "networked improvement communities" as resources for coordinating educational organizations in addressing shared problems of practice (Dolle, Gomez, Russell, & Bryk, 2013; Bryk, Gomez, & Grunow, 2010), as well as by the SERP Institute's model for constructing infrastructure supporting distributed knowledge production and exchange among "field sites" (Donovan, Snow, & Daro, 2013). Central to the work of both organizations is the development of infrastructure that transcends geographic constraints in supporting the production, exchange, and accumulation of practical and theoretical knowledge among members. As a complement, my colleagues and I have formalized a process of "developmental evaluation" to support researchers and innovators in collaborating to critically examine and improve ways that such networks are structured and function to produce, use, and manage practical knowledge (Peurach, Glazer, & Lenhoff, 2014).

Executive improvement. Executive improvement focuses on the core leadership team of the innovating organization, and on developing the knowledge and capabilities needed to organize and manage distributed, inter-organizational learning and improvement. Such leadership requires a sort of two-mindedness: the capability to encourage and support divergence and exploration throughout the network while, at the same time, driving convergence around a common model that can be exploited widely in ways that yield positive outcomes. That, in turns, requires shifting among plural and unitary leadership approaches that strategically devolve and

---

[6] For a detailed examination of infrastructure supporting continuous improvement in one leading school improvement network (Success for All), see Peurach and Neumerski (2015).

centralize decision making, responsibility, and accountability. Comparative, cross-sector research on the innovation process has found that such capabilities are generally scarce among the leaders of innovating enterprises, and often tacit and sub-conscious (Van de Ven, Polley, Garud, & Venkataraman, 1999).

Executive improvement can involve the construction of internal communities of practice that bring together leaders with diverse knowledge and experience, as well as the construction of professional learning communities that bring together leaders from a collection of innovation organizations. Examples include the i3 Learning Community (co-sponsored by the William T. Grant Foundation and the Spencer Foundation) and the Deeper Learning community (sponsored by the Hewlett Foundation). Further, it can include "pull out" leadership development, as with the Carnegie Foundation's Summits on Improvement in Education and with the 2015 DBIR Workshop at the University of Colorado -- Boulder. Finally, it can include executive coaching and mentoring in which a knowledgeable other supports executives in the context of practice, as via formal processes of cognitive behavioral coaching.

Problems of Improvement

Thus, one possible approach to managing complexity and uncertainty in their work is for practicing innovators to collaborate to continuously improve their programs, networks, and executive leadership. The image is of these enterprises functioning as novel types of "epistemic communities": quasi-professions that assume responsibility and ownership in producing, using, and managing practical knowledge (Glazer & Peurach, 2015).

Over the past 20 years, I have had the opportunity to closely observe such improvement efforts through my work as a researcher, participant-observer, and advisor in a collection of large-scale, systemic improvement efforts. (See Table 1.) Beyond frameworks and findings that

my collaborators and I have formally published, these experiences have also yielded many of the

more ordinary observations and insights characteristic of collaborative, experiential learning in

the context of innovating enterprises.

Table 1: Engagement with the Practice of Educational Innovation, 1996 -- 2015

Primary Role and Initiative (duration)

Researcher
- Longitudinal study of the operations, management, and evolution of Success for All (1996-2008).
- Longitudinal, comparative study of Success for All, America's Choice, and the Accelerated Schools Project (2000-2008).

Participant or Participant-Observer
- i3 Learning Community: Professional learning community of 20 projects awarded i3 funding in years 1 and 2 (2011-2014).
- Michigan's Integrated Behavior and Learning Support Initiative: A Michigan Department of Education-funded initiative to implement Response to Intervention and Positive Behavior Supports in 1000+ schools (2012-2015).
- Michigan Principal Fellowship: A Michigan Department of Education-funded initiative to develop and implement a model of collaborative leadership in 30+ underperforming schools (2008-2011).
- New Tech Network: A network supporting a school-wide model for project-base learning in 100+ high schools (2010-2012).
- Oakland (MI) Intermediate School District -- Targeted Services Initiative: A Michigan Department of Education-funded initiative to develop and implement a school-wide improvement model in 20+ underperforming schools (2006-2009).

Advisor
- Institute for Education Sciences -- Review Panel (2014-2015).
- Higher Education Learning Partnership -- HELP (2012-2015).
- National Center for Scaling Up Effective Schools -- Advisory Board (2013-present).

Discussant
- *Catalyzing a Social Structure for Educational Improvement: Initiating Networked Improvement Communities*. Annual Meeting of the American Educational Research Association. Chicago, IL: April, 2015.
- *Challenges in Developing, Validating, and Scaling Evidence-Based Interventions: Lessons Learned from the i3 Program*. Annual Meeting of the International Congress for School Effectiveness & Improvement. Cincinnati, OH: January, 2015.
- *Effective High Schools: Insights from the National Center on Scaling Up*. Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2013.

I have observed success: most notably, in a longitudinal study of Success for All that details coordinated, continuous improvement in the program, the network, and the executive team (Peurach, 2011). I have also observed innovating organizations struggle to coordinate and manage simultaneous continuous improvement in each of these domains.

Paralleling reports of other researchers, some of these struggles arise from the deeply-interpersonal work of engaging practitioners in critically examining their practice, as well as the resources and organizational arrangements that support their practice (e.g., Penuel, Allen, Coburn, & Farrell, 2015; Preskill & Torres, 2000). Others arise from the matter that continuous improvement is difficult, technically-demanding, and organizationally-complicated work.

Still others, though, have much deeper roots: specifically, in weak system-level infrastructure not only for program improvement (as detailed by Sabelli and Dede, 2015) but, also, for network and executive improvement.

Indeed, in my experience, politics and policies have done much to shape the practice of educational innovation, and to occasion a need for continuous learning and improvement. Yet the practice of educational innovation has done much less to shape politics and policies in ways that provide support for continuous learning and improvement. Absent political and policy support, one problem is that some practicing innovators simply do not recognize continuous learning and improvement as an essential dimension of their work, and they do not take it up in deliberate, disciplined ways. Another problem is that those who do take it up often struggle.

The Politics of Educational Innovation

As a general matter, the politics of educational innovation are not anchored in deep understanding of uncertainty in the practice of educational innovation, of the learning needs that

follow, or of the long time windows needed to productively coordinate and manage this learning

in and among the innovating organization, schools, districts, evaluators, and funders.

Rather, the politics of educational innovation are anchored in an intentionally-fragmented

governance structure in which rapid electoral cycles and short issue-attention cycles encourage

promises of (and expectations for) quick results and, thus, a general impatience with uncertainty.

They are further anchored in what Mehta (2013) describes as the "allure of order": longstanding

faith among policymakers, reformers, and thought leaders in the potential to use principles and

processes of rational management to discipline otherwise "soft" and undisciplined educational

practices.

Evidence lies in the watchwords and metaphors currently used to rally political support

and legitimacy for educational reform: "accountability" as a driving ethos throughout public

education; the quest for definitive knowledge of "what works" to improve student achievement at

scale; and the notion that this knowledge can be leveraged to "turnaround" underperforming

schools in short order. Many of these watchwords and metaphors are drawn from the business

sector and the hard sciences, and reinforced by the broader quality movement. This appeal to the

business sector dates to the "cult of efficiency" of the early 1900s, as mass public school

emerged in the US concurrent with the rise of scientific management in the manufacturing sector

(Callahan, 1964).

Policy Activity Supporting Educational Innovation

Policy activity supporting educational innovation largely parallels the politics of

educational innovation, with a stronger focus on introducing rationality, structure, and discipline

into the practice of educational innovation than on supporting the organic work of continuous

learning and improvement. Examples include:

- The creation of the Office of Innovation and Improvement and Institute of Education Sciences to coordinate federal policy activity supporting educational innovation.
- The evolution of federal competitive grant programs to require, as a condition for funding, both rigorous evidence of potential program effectiveness and rigorous evaluations capable of producing scientific evidence of program impact.
- The introduction of the Investing in Innovation program, and its use of a development-validation-scale up progression to coordinate the movement of innovations from concept to classroom.
- The establishment of the What Works Clearinghouse and its evidence standards.
- Federal investment in the advancement of statistical research methods, as well as in post-doctorate and early-career training programs aimed at putting these methods into practice.

Political and policy activity have interacted to open up a new niche in what Rowan (2002) describes as the "school improvement industry," one focused squarely on accountability, evidence, and impact. Examples of organizations occupying this niche include: philanthropic organizations advancing their own evidence-driven competitive grant programs; private research firms with highly developed capabilities for rigorous program evaluation, many with offices inside the Washington Beltway; and the Society for Research on Educational Effectiveness, a quasi-professional association with the express purpose of "provid(ing) an organizational infrastructure that supports and promotes research focused on cause-and-effect relations important for education" (SREE, 2015).

At the same time that political and policy activity have interacted to effect the emergence of an "impact infrastructure," they have not interacted to effect the emergence of a parallel "improvement infrastructure." For example, federal evidence-driven competitive grant programs have not evolved to include requirements or operating capital to support the development of capabilities for continuous improvement among practicing innovators. Moreover, federal policy has not included investments in agencies to support and coordinate the development of capabilities for continuous improvement, in formal methods or process for continuous improvement, or in the professional development of researchers able to put these methods into

practice. Absent mutually-supporting political and policy activity, a clear "improvement niche" has not yet opened, and philanthropic, private, and professional supports for continuous improvement have been comparatively slow to emerge.

There have been important exceptions to this broad pattern: for example, two federal grants programs to support program improvement, one focused on continuous improvement in education and another researcher-practitioner partnerships; the development of a small population of researchers championing and supporting design-based research as an approach to program improvement; the efforts of the Carnegie Foundation for the Advancement of Teaching and the SERP Institute to support network improvement; and a small number of philanthropists supporting executive improvement (chiefly the William T. Grant Foundation, the Spencer Foundation, the Hewlett Foundation, and the Broad Foundation).

However, policy, philanthropic, private, and professional activity supporting continuous improvement is still modest (a) as compared to support for accountability, evidence, and impact and (b) in relation to the number of innovating organizations pursuing large-scale, systemic educational innovations. Moreover, most of this support has been concentrated in the area of program improvement, with far fewer supports for either network improvement or executive improvement. Finally, this support is hardly institutionalized and, in fact, fragile. For example, the federal Continuous Improvement Research in Education grant program (arguably the most aggressive federal effort to support continuous improvement in educational innovation) was suspended after only two years, with only six total proposals actually funded.

Problems of Practice

Again, in my experience, where the politics and policies are coordinated around common aims for practice, I have observed practicing innovators quickly coordinating their work with

these aims. The clearest example was in my work with the i3 Learning Community, in which

innovators funded in the first two years of the i3 program were quickly able to leverage the

above-described "impact infrastructure" to incorporate rigorous evaluations into their work.

In contrast, when practicing innovators sought to develop new capabilities for which

there were no coordinated political and policy supports, as with continuous improvement, I

observed them struggle in all three domains: program, network, and executive improvement. The

extent and nature of these struggles has no doubt varied among innovators and across domains.

Indeed, in my experience, most practicing innovators have succeeded in developing at least some

capabilities for continuous improvement in each of these domains. However, they have done so

despite the lack of political and policy supports, and not *because* of them.

Program improvement. One set of problems with program improvement followed from

the absence of a mature "improvement infrastructure" able to provide immediate support for

large numbers of practicing innovators. One result was a sort of loose coupling, with practicing

innovators taking up the language of continuous improvement (e.g., the notion of "PDSA

cycles") without developing either centralized capabilities for design-based research or

distributed capabilities for school-level, evidence-based problem solving and decision making.

Another result was practicing innovators earnestly engaging the work of program improvement

but struggling to do so in disciplined ways, especially with respect to establishing a dynamic

among theory and evidence that yielded both new capabilities and new knowledge.

Another set of problems followed from the comparative strengths of an "impact

infrastructure" that privileges accountability, evidence, and impact over continuous learning and

improvement. I experienced this an advisory board member for the National Center on Scaling

Up Effective Schools: specifically, in our second meeting early in the project, when recognition

of the need to quickly stabilize the initiative, evaluate it, and produce positive evidence of

program impact functioned as a governor on a much broader conversation about means of

addressing a wide range of issues complicating both design and implementation.

I also experienced this as a participant-observer in the i3 Learning Community, where the

impact/improvement dynamic manifest as a tension between fidelity of implementation and local

adaptation. On the one hand, participants in the i3 Learning Community recognized a strong

need to support local adaptation when fielding complex improvement initiatives across variable

schools and districts. On the other, the dynamics among innovators, evaluators, and funders

placed a premium on fidelity of implementation.

This focus on fidelity had a practical basis: the need to stabilize key parameters that

supported innovator-evaluator collaboration, as well as the risk that idiosyncratic, school-to-

school adaptation would corrupt evaluations. However, the roots ran far deeper, into political and

policy context of the i3 program, itself. The political and policy platform for the i3 program is

anchored in the promise of quickly producing scientific knowledge of what works to improve

students outcomes, and not in creating the time and resources needed to wrangle uncertainty. The

consequence was a power asymmetry that privileged the political and practical interests of

funders and evaluators over the learning needs of innovators.

Network improvement. One set of problems with network improvement began at the

point of emergence, in initially structuring networks in ways that support the enterprise-wide

advancement of capabilities and the accumulation of knowledge through continuous learning and

improvement. There are few normative models to guide innovating organizations in doing so.

Moreover, with the exception of the Carnegie Foundation for the Advancement of Teaching and

the SERP Institute, there are few (if any) additional government agencies, private firms, or

professional associations with the capabilities to support large numbers of innovating

organizations in conceptualizing and establishing their networks in ways that support continuous,

network-wide learning and improvement. One result, again, is a sort of loose coupling, with

practicing innovators taking up the language of network-level continuous improvement (e.g.,

"networked improvement communities") absent the corresponding infrastructure or practices.

The absence of guidance and support, in turn, can result in innovating organizations

structuring their networks in ways that complicate continuous learning and improvement:

specifically, either as diffusion enterprises or incubation enterprises (Peurach, Glazer, &

Lenhoff, 2014).

Diffusion enterprises feature infrastructure supporting the rapid dissemination of highly

established models that are to be implemented with fidelity, though absent complementary

infrastructure supporting centralized or distributed program improvement, and absent feedback

infrastructure through which to accumulate and leverage new knowledge. By contrast, incubation

enterprises typically feature comparatively weak centralized design and development

capabilities. Instead, they feature infrastructure supporting widely-distributed program design

and improvement among schools, themselves. However, incubation enterprises also lack

feedback infrastructure through which to accumulate and leverage new knowledge as it is

produced and refined in schools.

My colleagues and I have observed innovating organizations recognize such problems

and adapt in ways that integrate diffusion and incubation to support evolutionary, network-wide

learning and improvement. For example, in a longitudinal study of three leading comprehensive

school reform programs, we detailed efforts by Success for All and America's Choice to do just

that: the former emerging as a diffusion enterprise and adapting to support distributed program

improvement in schools; and the latter emerging as an incubation enterprise that adapted to

include centralized capabilities for design, development, and dissemination (Cohen et al., 2014;

Peurach, 2011). Yet another program in our study -- the Accelerated Schools Project -- did not

succeed in adapting in ways that supported distributed, network-wide learning and

improvement.[7]

And that is where a second set of problems with network improvement begins: with the

absence of capabilities among public agencies, philanthropists, private firms, and professional

associations supporting established networks in developing infrastructure for distributed,

network-wide learning and improvement. Again, my colleagues and I have been attempting to

address this gap by formalizing a process of developmental evaluation to support researchers and

practicing innovators in collaborating to critically examine and improve their networks as

learning systems (Peurach, Glazer, & Lenhoff, 2014). We piloted this process in the context of a

broader study of the New Tech Network (Lenhoff, 2013; Peurach, Lenhoff, & Glazer, in press).

Our primary finding was that transforming an established network to support continuous

learning and improvement is exceedingly difficult (Peurach, Glazer, & Lenhoff, 2014). In the

case of the New Tech Network, the most formidable problem was that, as it had emerged and

matured, the enterprise had become lodged in a web of interacting influences that reinforced its

initial form as an incubation enterprise and that limited its possibilities for improvement. These

influences included: beliefs and ideologies about the central locus of design and improvement;

network identity among members; public identity in the reform community; resource constraints;

past problems solved; and many more. Moreover, our efforts to support critical reflection and

---

[7] Success for All continues to thrive, and functions as an exemplar of a large-scale, systemic school improvement network with capabilities for simultaneous program, network, and executive improvement. America's Choice was purchased by Pearson, and used as intellectual capital in developing the model underlying its School Improvement Services. The Accelerated Schools Project folded, and any intellectual capital that had accumulated in the network was largely lost.

improvement were complicated by our status as outside researchers, the long timelines required to produce rigorous analyses of network operations, negotiating a common language that bridged the deep theory underlying our framework and the language of practice, and more.

Executive improvement. The first set of problems in executive improvement begins, again, at the beginning, with the initial knowledge and capabilities that executives bring to their work. In no case have I engaged an innovating organization in which the founders and the core executive team have formal professional training in establishing, organizing, and managing large-scale, continuously improving innovation networks. Rather, these organizations have been established and led by practicing educators, university-based researchers, advocates, and others with knowledge and expertise more closely coordinated with the educational opportunities, needs, and problems on which their programs focus (and not in managing large-scale, innovating enterprises).

The second set of problems, again, lies in addressing these initial weaknesses in executive capabilities. Absent political and policy supports that would drive public agencies, private firms, and professional associations to develop executive-level supports, it is not clear where practicing innovators might turn for such professional preparation and development. University-based educational leadership programs are largely isomorphic with the institutionalized principal/superintendent role structure of US public schooling, and alternative executive development programs focused on leading innovating organizations (e.g., Harvard's Doctorate in Educational Leadership Program and the Broad Residency) have limited capacity in relation to the vast number of people leading innovating organizations in the US.

In the absence of such supports, I have observed practicing innovators attempting to

compensate by developing relationships with other individuals and organizations with expertise

bearing on the work. These relationships have taken four primary forms:

- Incorporating people with business expertise into internal communities of leadership practice (which I observed in Success for All).
- Participating in professional learning communities that include leaders of other innovating organizations (which I experienced as a participant-observer in the i3 Learning Community).
- Assembling advisory boards (which I experience as an advisory board member for the National Center on Scaling Up Effective Schools, and which I experienced in co-organizing a collection of researchers studying Michigan's Integrated Behavior and Learning Support Initiative into a "Higher Education Learning Partner" (HELP) team that provided formative feedback to the executive team).
- Hiring business consultants (which I observed from a distance, as a prestigious faculty member from a leading business school advised the founders of a leading charter management organization).

While helpful on many levels, all of these strategies were also partial and/or problematic,

and none was sufficient to bridge the gap between the initial knowledge of executives and the

knowledge demands of their work. For example, incorporating business executives into internal

communities of leadership practice and hiring business consultants again privileged business

acumen over the organic work of evolutionary, inter-organizational learning.

Further, in addition to being temporary and small-scale efforts, the payoffs in

professional learning communities were limited by the same types of constraints that Little

(1990) identified in teachers' professional learning communities. Specifically, the lack of joint

work among participants (and limited knowledge of each others' programs and operations)

limited participants to low-level storytelling and sharing, and provided no context for deep co-

engagement in practice.

Finally, advisory boards often did as much to introduce noise into the experience of

executives than to provide coherent guidance and support for improving their knowledge and

capabilities. Even though well intended, members of advisory boards often had their own interests and agendas; had only partial knowledge of the innovating organization and its network; reasoned and communicated using frameworks and vocabulary different from that of the innovating organization; and generated understandings of the innovating enterprise at a slower rate than members of the enterprise, itself.

Coordinating the Politics, Policies, and Practice of Educational Innovation

To be clear, this is a white paper, written from the perspective of an outsider who has had opportunities to deeply engage the practice of educational innovation over a twenty year period in a variety of roles. As such, it is anchored in a specific point of view, with the aim of identifying (and motivating discussion about) problems that could complicate efforts to incorporate continuous improvement into the work of developing and field large-scale, systemic innovations. The audience is a diverse collection of people focused on exactly that: specifically, participants in a leading national conference on using continuous improvement to integrate design, implementation, and scale up.

From the perspective of an outsider engaging this work, the practice of educational innovation appears responsive to educational politics and policies that press for accountability, evidence, and impact. One reason is that education politics and policies are coherent, and comparatively tightly coordinated around this agenda (even if not advanced under some unified "grand plan"). Another is that politics and policies have interacted to open a niche supporting the development of an "impact infrastructure": the addition of coordinated philanthropic, private, and professional activity that provides innovating organizations with the intellectual, human, and operating capital needed to act on the accountability/evidence/impact agenda.[8]

---

[8] Again, as noted at the outset, my observations about the comparative strengths and weaknesses of impact and improvement infrastructures parallel observations made by a long list of researchers, including Bryk, Gomez,

In an earlier analysis, Joshua L. Glazer and I described very similar dynamics supporting the rapid rise of a population of comprehensive school reform providers: policy activity driving the production of intellectual, human, and other resources in ways that supported innovators in responding (Glazer & Peurach, 2013). These dynamics are captured in Brian Rowan's analysis of ways in which politics and policies interact to open and close niches in the "school improvement industry" (Rowan, 2002). These dynamics are also central to comparative, system-level analyses of the innovation process, which identified a need for a coherent "community-industrial infrastructure" to support the development, adoption, and widespread use of innovations (Van de Ven et al., 1999).

In all of these accounts, the notion of a niche shows up strong, one that co-emerges through interdependent political, policy, philanthropic, private, and professional activity. Organizations that occupy this niche mediate between the politics and policies of innovation (on the one hand) and the practice of innovation (on the other). In turn, organizations that occupy this niche combine with practicing innovators to assert influence on politics and policies to establish conditions that both assure their continued existence and that further support their work.

A general conjecture to be drawn from the preceding analysis is this: If politics and policies are coordinated in ways that support the development of particular capabilities for practice, then the potential increases for the practice of educational innovation to evolve to include those capabilities.

To the extent that this conjecture holds, then it predicts problems for the introduction of formal methods and processes of continuous improvement into the practice of educational innovation, in that its contrapositive would also hold: If politics and policies are *not* coordinated

---

Grunow, and LeMahieu (2015), Dolle, Gomez, Russell, and Bryk (2013), Donovan, Snow, and Daro (2013), Scherrer, Israel, and Resnick (2013), and Sabelli and Dede (2013). Indeed, what stands out in my analysis is not its novelty but, instead, its consonance with these other analyses.

in ways that support the development of particular capabilities for practice, then potential does *not* increase for the practice of educational innovation to evolve to include those capabilities.

And, again from the perspective of an outsider engaging the practice of educational innovation, that is precisely the pattern that I have observed with respect continuous improvement. Absent coordinated politics and policies supporting continuous improvement, a niche has yet to open that supports the development of an "improvement infrastructure": the addition of coordinated philanthropic, private, and professional activity that provides innovating organizations with the intellectual, human, and operating capital needed to act on the need to continuously learn and improve. This is the case despite continuous learning and improvement being a tacit requirement of politics and policies, in that demonstrating program impact and producing scientific knowledge of what works is predicated on exactly such learning and improvement. Consequently, innovating organizations struggle in the domains of program, network, and executive improvement.

Again, to the extent that the preceding analysis is on the mark, then three questions follow for those who recognize the imperative to incorporate formal methods and processes of continuous improvement into the practice of educational innovation:

1. What would it look like for politics and policies to evolve in ways responsive to the demands of practice, such that they interact to open a niche in which philanthropic, private, and professional activity coalesces into a coherent "improvement infrastructure?"
2. Who might exercise agency in driving the evolution of politics and policies in ways responsive to practice?
3. How might they exercise agency?

While these questions warrant deeper consideration than is possible here, the preceding analysis provides a foundation for sketching some provisional responses.

For example, regarding the first question, the establishment of an improvement infrastructure would begin with countercultural political support: specifically, understandings of (and respect for) uncertainty in educational innovation that balances the allure of order and that functions to temper expectations and extend timelines. Further, it would feature policy activity that used competitive grants to create resources and requirements for continuous improvement, complemented by (a) efforts to establish federal agencies to coordinate the continuous improvement agenda and (b) parallel investment both in methods of continuous improvement and in the professional development of researchers able to support continuous improvement. Finally, it would include policy activity aimed at drawing philanthropists, private firms, and professional associations in the "improvement" niche: for example, by requiring that recipients of competitive grants secure both private matching funds and support for continuous improvement from external partners, and by resourcing university and professional associations as sites for the professional development of executives and their partners.

Regarding the second question, no single organization or group will have the influence, resources, or capabilities to exercise the agency required to effect such changes in politics and policies. Rather, such changes will require an array of organizations and groups vested in continuous improvement to exercise agency in reshaping politics and policies: for example, practicing innovators poised to exercise voice and assert themselves as constituents of politics and policy; organizations poised to occupy the "improvement" niche, including philanthropists, private firms, and professional associations; constituents in business and the hard sciences that recognize the need for (and value of) continuous improvement, and to which politicians and policymakers often appeal for ideas and legitimacy; and politicians and policymakers who independently recognize the need for (and value of) continuous improvement.

Regarding the third question, the prospects of reshaping politics and policies could be increased by organizing the preceding groups and organizations into a coherent coalition (or small number of coalitions) that exercised collective influence from the bottom-up. One key for these coalitions would be to work in coordinated ways to shift the political and policy narratives around educational innovation: for example, by emphasizing "infrastructure building" (rather than "turnaround"), the tech sector's notion of "perpetual beta" as characterizing the work of educational innovation (rather than the pursuit of "what works"), and Atul Gawande's notion of "better" (rather than "scientific knowledge") as an outcome of improvement-focused educational innovation. Most convincing, though, would be efforts by these coalitions to generate rigorous evidence of a positive association between improvement and impact, with innovating organizations demonstrating increasingly-developed capabilities for continuous improvement also showing increasingly-stronger impacts on student outcomes.

While the prospects of developing a coherent improvement infrastructure may seem daunting, the development of the "impact infrastructure" supporting the accountability-evidence-impact agenda stands as evidence of possibility. Moreover, even though it certainly won't happen tomorrow, developing a coherent improvement infrastructure need not take forever, in that the impact infrastructure began to emerge with the onset of the standards-and-accountability movement in the early 1990s and, then, rapidly matured over a 25 year period.

From this perspective, the challenge in the short term will be for those organizations and groups already vested in (and acting on) the improvement agenda to stay the course, and to understand that doing so will require strategically managing an uphill battle in the absence of complementary political and policy supports. The challenge in the long-term, then, will be to

organize and strategize in order to cultivate and assert the influence needed to effect a positive

co-alignment among politics, policies, and practice in support of the cause.

References

Anderson, T. & Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational Researcher, 41 (1)*, 16-25.

Berends, M., Bodilly, S. J., & Kirby, S. N. (2002). *Facing the challenges of whole school reform: New American Schools after a decade*. Santa Monica, CA: Rand.

Bryk, A. S., Gomez, L. M., & Grunow, A. (2010). *Getting ideas into action: Building networked improvement communities in education*. Stanford, CA: Carnegie Foundation for the Advancement of Teaching.

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at betting better*. Cambridge, MA: Harvard Education Press.

Callahan, R. E. (1964). *Education and the cult of efficiency: A study of the social forces that have shaped the administration of the public schools*. Chicago, IL: University of Chicago Press.

Coburn, C. E., Penuel, W. R., & Geil, K. E. (2103). Research-practice partnerships: A strategy for leveraging research for educational improvement in school districts. New York, NY: William T. Grant Foundation.

Cohen, D. K. & Moffit, S. L. (2009). *The ordeal of inequality: Did federal regulation fix the schools?* Cambridge, MA: Harvard University Press.

Cohen, D. K., Peurach, D. J., Glazer, J. L., Gates, K. G., & Goldin, S. (2014). *Improvement by design: The promise of better schools*. Chicago, IL: University of Chicago Press.

Datnow, A., Hubbard, L, & Mehan, H. (2002). *Extending educational reform: From one school to many*. New York, NY: Routledge Publishers.

Datnow, A., & Park, V. (2009). Towards the co-construction of educational policy: Large-scale reform in an era of complexity. In D. Plank, B. Schneider, & G. Sykes (Eds.), *Handbook of Education Policy Research* (pp. 348-361). New York, NY: Routledge Publishers.

Dolle, J. R., Gomez, L. M., Russell, J. L., & Bryk, A. S. (2013). More than a network: Building professional communities for educational improvement. *National Society for the Study of Education Yearbook, 112(2)*, 443--463.

Donovan, M. S., Snow, C., & Daro, P. (2103). The SERP approach to problem-solving research, development, and implementation. *National Society for the Study of Education Yearbook, 122(2)*, 400-425.

Duke, D. & Salmonowicz, M. (2010). Key decisions of a first-year "turnaround principal." *Educational Management Administration and Leadership, 38 (1)*, 33-58.

Farrell, C. C. (2015). Designing school systems to encourage data use and instructional improvement: A comparison of school districts and charter management organizations. *Educational Administration Quarterly, 51(3)*, 438-471.

Farrell, C., Wohlstetter, P., & Smith, J. (2012). Charter management organizations: An emerging approach to scaling-up what works. *Educational Policy, 26*(4), 499-532.

Fishman, B. J., Penuel, W. R., Allen, A.R., Cheng, B. H., & Sabelli, N. (2103). Design-based implementation research: An emerging model for transforming the relationship between research and practice. *National Society for the Study of Education Yearbook, 122(2)*, 136-156.

Glazer, J. L. & Peurach, D. P. (2013). School improvement networks as a strategy for large-scale education reform: The role of environments. *Educational Policy, 27(4),* 676-710.

Glazer, J. L. & Peurach, D. P. (2015). Occupational control in education: The logic and leverage of epistemic communities. *Harvard Educational Review*, *85(2)*, 172-202.

Glennan, T. K., Jr., Bodily, S. J., Galegher, J. R., & Kerr, K. A. (2004). *Expanding the reach of educational reforms: Perspectives from leaders in the scale-up of educational interventions*. Santa Monica, CA: Rand.

Hopkins, M., Spillane, J. P., Jakopovic, P., & Heaton, R. M. (2013). Infrastructure redesign and instructional reform in mathematics: Formal structure and teacher leadership. *The Elementary School Journal, 114 (2)*, 200-224.

Hatch, T. (2013). Beneath the surface of accountability: Answerability, responsibility and capacity-building in recent education reforms in Norway. *Journal of Educational Change*. DOI 10.1007/s10833-012-9206-1.

Lenhoff, S. W. (2013). Co-construction, infrastructure, and purpose: Implementation of hub-outlet school reform (Unpublished doctoral dissertation). East Lansing, MI: Michigan State University.

Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record, 91*, 509-536.

Marsh, J., Hamilton, L., & Gill, B. (2008). Assistance and accountability in externally managed schools: The case of Edison Schools, Inc. *Peabody Journal of Education*, *83*(3), 423-458.

McDonald, J. P., Klein, E. J., & Riordan, M. (2009). *Going to scale with new schools designs: Reinventing high schools*. New York, NY: Teachers College Press.

Mehta, J. (2013). *The allure of order: High hopes, dashed expectations, and the troubled quest to remake American schooling*. New York, NY: Oxford University Press.

Mintrop, H. & Trujillo, T. (2005). Corrective action in low-performing schools: Lessons for NCLB implementation from first-generation accountability systems. *Educational Policy Analysis Archives, 13 (48)*.

Moss, P. A. & Haertel, E. H. (In press.) Engaging methodological pluralism. D. Gitomer and C. Bell (Eds.), *Handbook of Research on Teaching (5th Ed.)*. Washington DC: American Educational Research Association.

National Charter School Research Project. (2007). *Quantity counts: The growth of charter school management organizations.* Seattle, WA: University of Washington, National Charter School Research Project.

Penuel, W. R., Allen, A. R., Coburn, C. E., & Farrell, C. (2015). Conceptualizing research-practice partnerships as joint work at the boundaries. *Journal of Education for Students Placed at Risk, 20*, 182-197.

Penuel, W. Fishman, B., Cheng, B.H., & Sabelli, N. (2011). Organizing research and development at the intersection of learning, implementation, and design. *Educational Researcher, 40,* 331-337.

Peurach, D. J. (2006). *Large scale reform of school-level leadership: Managerial leadership in Success for All*. Paper presented at the Annual Meeting of the University Council for Educational Administration. San Antonio, TX: November 2006.

Peurach, D. J. (2011). *Seeing complexity in public education: Problems, possibilities, and Success for All*. New York, NY: Oxford University Press.

Peurach, D. J. (2015). *The practice of educational innovation*. Ann Arbor, MI: University of Michigan (submitted for publication; under review).

Peurach, D. J. & Glazer, J. L. (2012). Reconsidering replication: New perspectives on large-scale school improvement. *Journal of Educational Change, 13 (2),* 155-190.

Peurach, D. J., Glazer, J. L., & Lenhoff, S. W. (2014). The developmental evaluation of school improvement networks. *Educational Policy*. DOI: 10.1177/0895904814557592.

Peurach D. J., & Lenhoff, S. W., & Glazer, J. L. (In press). Large scale high school reform through school improvement networks: Examining possibilities for "developmental evaluation." *National Society for the Study of Education Yearbook, 15 (1)*.

Peurach, D. J. & Neumerski, C. M. (2015). Mixing metaphors: Building infrastructure for large scale school turnaround. . *Journal of Educational Change*. DOI 10.1007/s10833-015-9259-z.

Preskill, H. & Torres, R. T. (2000). The learning dimension of evaluation use. *New Directions for Evaluation, 88 (Winter)*, 25-37.

Rowan, B. (2002). The ecology of school improvement: Notes on the school improvement industry in the United States. *Journal of Educational Change, 3*, 283--314.

Sabelli, N., & Dede, C. (2013). Empowering DBIR: The need for infrastructure. *National Society for the Study of Education Yearbook, 112*(2), 464--480.

Scherrer, J., Israel, N., & Resnick, L.B. (2013). Beyond classrooms: Scaling and sustaining instructional innovations. *National Society for the Study of Education Yearbook, 112*(2), 426--442.

SREE -- Society for Research on Educational Effectiveness. (2015). *SREE - History*. Retrieved August 27, 2015, from https://www.sree.org/pages/history.php.

Van de Ven. A. H., Polley, D. E., Garud, R., & Venkataraman, S. (1999). *The innovation journey*. Oxford: Oxford University Press.