

A  
proposal  
for  
Integrating  
Research  
and  
Teacher  
Professional  
Preparation:

Innovation  
and  
Induction  
Corridors

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# **Innovation and Induction Corridors: A Proposal for Integrating Research, Development and Teacher Professional Preparation**

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## **The Problem**

Policy makers have relied on two mechanisms for improving the K-12 education system in the U.S.: incentives and accountability standards. The appeal of these two policy levers is that they promise a quick, easily understood response for a relatively small investment. Incentives have been used at various levels: the individual teacher, the school, the district, and the state. At the individual level, performance pay is intended to attract good teachers and provide an incentive for them to stay, and to discourage ineffective teachers. Policies supporting charter schools or school vouchers are intended to use competition as an incentive; the assumption is that families will “vote with their feet,” and demand for good schools will allow them to thrive and expand while poor schools will either improve or be abandoned. Incentives have been used at the state and district level to reward policy changes with extra resources.

The second lever, accountability, operates through higher standards and high stakes testing. Teachers, schools, and districts are held accountable for improving student outcomes, and exposed when students’ performance falls short of the standard. Schools can be closed, and reopened with new leadership and new staff. And in the most extreme cases, districts can be put in receivership.

While the logic of these policies is promising, they have produced disappointing results time and again. For incentives and accountability to effectively produce significant improvement, the capacity for improvement must exist, even if it is dormant. In the absence of that capacity, we should expect the weak results that we have observed. But public investments in capacity building are politically unappealing. Strengthening the knowledge base on effective teaching and leadership, and preparing education professionals in accordance with that knowledge base, would require a substantial investment, take longer to produce tangible results, and introduce intermediate steps between action and outcome that are more challenging to describe than simplistic, silver bullet solutions. Nonetheless, these investments will be required for genuine progress if the underlying problem in U.S. K-12 education is indeed inadequate capacity.

The Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS), the most recent efforts to use the accountability instrument, raise the bar on what students are expected to know and be able to do. In a substantial departure from the past, these standards require students to explain their thinking, make and defend arguments, model relationships, and critique the reasoning of others—activities largely absent in today’s classrooms. A decade of experience working in close collaboration with teachers and with school and district leaders suggests that the capacity for making that shift does not now exist.

The prevailing model of instruction even today remains one in which the teacher “delivers” knowledge to students. There are times when knowledge delivery is what is required, of course. But in many classrooms, even teachers who intend to engage students in discussion can nonetheless be observed leading students to a “fill-in-the-blank” answer or responding to a student’s comment by confirming or denying its accuracy rather than by exploring the student’s thinking. Teachers will very often reformulate a student’s first inarticulate response to a question into a full and clear explanation. With the best of intentions, the teacher thereby does the work that students must do for themselves to develop academically.

Teachers can hardly be faulted for these practices; they are consistent with the model of teaching that they have experienced themselves. In fact, for many of our daily purposes, it is a model that makes sense. If the goal is to explain how to get to a destination, what ingredients go into a stew, or which app is best for navigating in traffic, telling is undoubtedly the most efficient approach—as it is for conveying the number and names of planets, oceans, and continents. A central, uncontroversial finding in the research literature on human learning is that it is difficult to upend an idea that everyday experience reinforces (NRC, 1999). Thus, if we are to accomplish the learning goals of the CCSS and NGSS, which require that students engage in more academically productive talk, we will need professional preparation that is powerful enough to change the very conception of good teaching. In the absence of substantial investments in capacity building, we should once again expect widespread failure to meet the standards and resistance from parents, teachers, and administrators whose students and schools will be deemed inadequate.

Building capacity for education improvement is not just a matter of better preparing teachers and administrators; it also requires building the knowledge base on *how* to better prepare education professionals. Education, as Harvard professor Richard Elmore has argued, is a profession without a practice (Elmore, 2006). A first-year student in medical school anywhere in the country takes a common set of courses, as does a first year law or engineering student. But there is no shared canon for preparing teachers (Shulman, 2005). Nor is it clear what should be accomplished in pre-service training versus what can only be done effectively during induction or after practice is solidified.

Research universities can justifiably be criticized for contributing too little to the knowledge base regarding both the critical dimensions and the essential content for the professional preparation of teachers and administrators to meet today’s educational challenges. Given the higher stature accorded in academia to those who make theoretical rather than applied contributions and incentives to publish or perish, faculty in the nation’s top research universities have understandably invested little in generating knowledge for practice. However the experience of the Strategic Education Research Partnership (SERP) demonstrates that much progress can be made without changing the incentive structures provided that the organizational structures are in place to support highly productive programs of research on problems of education practice. In

what is referred to as “Pasteur’s Quadrant,” theoretical and applied scientific advances go hand-in-hand (Stokes, 1997).

University researchers who have worked with SERP in middle school settings to improve students’ comprehension of content-area texts provide one example. Word Generation, an academic vocabulary program co-designed by the researchers and teacher co-developers, provides text on controversial topics and opportunities for students to discuss and debate the issues using targeted vocabulary. By observing the importance of discussion in motivating students’ attention to text, researchers generated new theory on the role of discussion in catalyzing comprehension. They subsequently initiated new research, developed new research instruments, designed additional instructional materials in collaboration with practitioners, and evaluated their impact on their newly hypothesized contributors to comprehension. This research illuminated weaknesses in the professional preparation for teachers; the skills required to create classroom environments conducive to academically productive discussion are not routinely taught in teacher preparation and induction programs. The sizable dataset amassed from the project is generating a substantial body of publishable research by faculty at various stages in their professional careers (see [CCDD.serpmedia.org](http://CCDD.serpmedia.org) for a detailed description of the project).

While this example suggests that the goals of researchers and practitioners need not be at odds, investments must be made in the organizational infrastructure required for productive collaboration in practice settings if such examples are to become more common. When researchers must navigate the challenges of access on their own, they risk major investments of time without any assurance that the work will, in the end, be permitted to move forward.

The absence of an organizational infrastructure is no less problematic for school districts. Currently, researchers who seek to work in school settings are a drain on the resources of district personnel who must vet and approve their requests. More importantly, district or school administrators must spend scarce political capital in order to persuade a set of schools or teachers to participate in a research study. Many practitioners see the value of research and development, but even if only a few are resistant, they can impose a high cost on those attempting to facilitate a project (e.g., undermining the productivity of collaborative meetings and diminishing the motivation of colleagues, or expressing concerns to parents who can then register dissatisfaction to senior district officials or to school board members about their children being used as “guinea pigs in experiments”).

Designated organizational structures are required in order to minimize the inherent challenges and risks for both researchers and practitioners that accompany research and development in practice settings. And they are essential for building a coherent, ongoing, innovative R&D program focused on understanding the teacher knowledge, skills, dispositions, and practices that are required to meet today’s higher standards for student achievement. As in medicine, the sites for clinical research and development

can simultaneously serve as the sites for induction into the profession, with benefit to both enterprises.

## The Proposal

The organizational structures we propose, Innovation and Induction Corridors, would be comprised of a cluster of schools located inside a group of major school districts. The corridors in each district would span pre-K or kindergarten through grade 12, and the schools would be officially designated as research and development sites. Except for new teachers who are being inducted into the profession, any student, teacher, or administrator could choose not to be in these schools, removing from the mix those who have reservations about engagement in research and development. Moreover, the job descriptions of the teachers and administrators in the corridor would include routine participation in education R&D for which they would be paid a premium. Classrooms would be open for observation at all times, and data collection, video recording, and shared work would be standard protocol. Political risks for district personnel would be reduced because the disgruntled would have the option of moving to any school outside the corridor. Consent to use data for research purposes subject to standard confidentiality protections would be a condition for enrollment or employment in corridor schools.

We propose that the formal induction programs for new teachers be located in this same corridor of schools for three compelling reasons:

1. Involving master teachers would be highly beneficial for *both* R&D and induction; their understanding of practice will allow them to contribute to its improvement, and to prepare new entrants to teach well.
2. If the R&D program is intended in part to provide new knowledge on effective teacher preparation, then locating the R&D in schools where new teachers are concentrated is essential.
3. A major cultural shift in the professional expectations for teachers would occur relatively quickly if new teachers were immersed in a culture of reflective practice (facilitated by regular data collection and review), and collegial experimentation and problem-solving, and then carried that experience with them to schools throughout the district.

The Corridors could serve as the point of intersection and mutual influence for faculty from research universities and faculty from colleges of education who train large numbers of teachers—two groups that currently intersect only rarely. That relationship would allow for a tight connection between knowledge generation and professional preparation.

For maximum impact, the Innovation and Induction Corridors might be located in the most challenging geographic area of a school district. New teachers are already disproportionately concentrated in these schools, a corollary to the more experienced teachers moving out at first opportunity (Ingersoll & Strong, 2011; Ingersoll & Merrill,

2012). If expert teachers were recruited and paid a premium to serve as mentors and co-developers for R&D programs, the clustering of these talented teachers would provide an incentive for professionals to stay and for parents to send their children to these once undesirable schools.

Induction must elevate to a central role each teacher's curiosity about, and responsiveness to, the thinking of students. While the warrant for such a focus is the call in the CCSS and NGSS for students to explain and justify their thinking, SERP partnership experiences reinforce their importance. We have observed repeatedly the positive impact of serious academic discussion on student engagement, including students with special needs, when the teacher is genuinely interested in what students say. But a potent professional experience will be required to create such a shift in teachers' knowledge and beliefs regarding effective teaching.

Consider the experience that doctors go through during internships and residencies as part of their induction into the medical profession. From the standpoint of knowledge and skill development, the long shifts that residents are assigned—on call day and night—makes little sense. Sleep deprivation is hardly a prime condition for learning. But it is surely a formative experience in creating a professional disposition. It conveys that to be a doctor one must put one's practice before all else—a good night's sleep, a meal at home, time with family and friends. Friends and family are introduced to the fait accompli: inaccessibility comes with the territory.

Teaching does not require middle-of-the-night calls to action; but the disposition required to be an excellent teacher is no more natural. It requires treating every day as a critically important opportunity to advance students' knowledge and capacity—though urgency is rarely signaled in the day to day of schooling. It means exploring students' ideas and prodding them to go further in their thinking—even though moments before these same students' behavior in the hallways may have raised doubts about whether they can think at all. It means recognizing signs of trauma and distinguishing them from simple uncooperative behavior.

Spending two years<sup>1</sup> in a supportive environment in which the teaching load is somewhat reduced to allow for collaboration with colleagues and researchers, in which the challenges of teaching are the subject of shared curiosity, and in which investigations into instructional practice are routinely conducted, could provide the professional preparation that gives ordinary teachers the ability to engage in extraordinary professional practice. If we are honest, we will admit that we cannot yet say with certainty exactly what preparation new teachers need. But integrating induction with research and development will, over time, yield such answers. And master teachers will be major contributors to generating those answers.

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<sup>1</sup> Two year may be more feasible if the first is integrated into pre-service, leaving only the second to be paid for by the district or state.

The proposed corridor is in some respects similar to older efforts to create “lab schools”: the research and development efforts would be given protection from the political winds that frequently change direction as district leadership changes. But the corridors differ significantly in that they would be structured to serve as the engines of improvement for entire districts by feeding newly trained teachers to schools throughout the district.

## **Reality Check**

Is the proposal realistic? The primary obstacle we foresee is funding—by which we mean not the cost to society, but the policy decision to allocate, or reallocate, funds to make it happen. School districts already spend considerable amounts on teacher induction; in 2011, 85% of new teachers received some induction support; and a small percentage even received support over two years (Ingersoll & Merrill, 2012). Importantly, we know that in the absence of induction, 41% of new teachers leave the profession within a few years, and that minimalist approaches to induction have only a marginal impact on the attrition rate. But a “Lexus” model of induction that extends over two years and includes mentoring, reduced teaching load, and collaboration with colleagues has been found to reduce attrition to 10%, and it has a positive impact on student achievement (Ingersoll, 2012). Research on the impact of good teaching suggests that substantial investments in preparation and induction will yield high returns long into the future (Chetty, Friedman, and Rockoff, 2012).

The U.S. investment in education research and development is paltry; in 2013, the R&D budget for the U.S. Department of Education was 1.3% of the R&D budget for the National Institutes of Health (under \$400 million for education, over \$30 billion for health (AAAS, 2014)). While the investment level begs attention, existing research efforts can be made more efficient and productive. Researchers in every major city are already engaged in research initiatives that in many cases involve buying out teacher time to work with researchers. But their research is not organized to provide coherent answers to the pressing questions of professional preparation and effective professional practice. The corridors would provide organizational arrangements that will allow current investments to yield greater returns.

Policy decisions that represent a departure from the past are not easily made, and models that demonstrate that an idea has been successful elsewhere can provide assurances (Lindblom, 1959). Medicine perhaps provides such a model, inasmuch as the challenges of providing strong professional preparation coupled with research and development are similar. The approximately 100 academic medical centers and their affiliated teaching hospitals provide evidence of the feasibility of creating dedicated practice settings in which research and professional training are concentrated. And medicine operates at full scale (AAHC, 2014). To explore an integration of education research and teacher professional preparation, we propose beginning with one or two districts to develop a proof of concept and to learn from experience. The final size of the enterprise would be determined organically over time.

What is the alternative? A more incremental approach to building teacher capacity would continue to place new teachers in the classrooms of more experienced teachers. While this approach requires no organizational disruption, it is simply not capable of delivering a major shift in practice. By design it delivers more of what already exists. And efforts to improve the quality of the content of professional preparation by convening panels of experts—a standard approach to charting a new policy course—is unlikely to be productive here: the knowledge base on teacher preparation is insufficiently developed and differentiated to provide definitive answers that apply across contexts. It is for this very reason that a new structure is needed for an ongoing research and development program in experimental practice settings.

Creating organizational structures that enable our best researchers and our most skillful practitioners to work together to build and improve professional practice and the knowledge base that supports it will address the capacity challenge that has undermined one policy initiative after another. And it is an investment strategy that will not only work for today, but one that will evolve to meet the challenges of tomorrow.

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