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Diagnosing What Ails Teacher Professional Development Before Reaching for Remedies

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Acknowledgments

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INTRODUCTION

"Professional development cannot be part of the solution until it is no longer part of the problem,"
Hayes Mizell, Distinguished Senior Fellow Emeritus at Learning Forward.[1]

In classrooms across the United States, teachers are being asked to adapt their instructional practices to reflect new, more rigorous academic standards designed to help all students succeed in an increasingly complex and knowledge-based society. Recognizing that the quality of teaching is the most important element of students' schooling, there is growing urgency among education policymakers and practitioners to improve teachers' knowledge and skills to ensure that the standards live up to their promise.[2] This is particularly true in schools that have struggled to help students achieve their potential even prior to the new standards.

In addition, policymakers are beginning to recognize that while new teacher evaluation systems can provide greater insight into teaching quality, they are not sufficient to drive ongoing improvement in teachers' practice. For that to occur, teachers must receive meaningful professional development (PD) tied to their identified areas for growth.

Right now, teacher PD* encompasses a variety of activities, from one-time workshops and online courses to individualized coaching and collaborative peer learning communities. However, in its present state, teacher PD has gained a poor reputation among many teachers and those who study education, as the American educational system has been more successful at producing PD quantity than quality.[3] Despite PD investments by federal, state, and local agencies totaling about $18 billion a year on PD (not counting the cost of time spent by the nation's 3.1 million teachers), little evidence exists to demonstrate that these investments have been consistently effective in improving teacher practice or student learning outcomes.[4] For instance, in its recent influential report, *The Mirage: Confronting the Hard Truth About Our Quest for Teacher Development*, the education reform organization TNTP examined three large urban districts and found no differences between the PD experiences of teachers who improved their practice and those who did not.[5]

While the education field lacks a comprehensive inventory of "what works" in PD, for whom, and under what conditions, a few rigorous studies show that certain types of PD are more likely to help teachers improve when designed and implemented well. Taken together, these studies point to a need for professional development experiences that are sustained, relevant to teachers' daily work and

content areas, and involve active learning and collaboration among colleagues.

With these studies as a guide, our nation's education leaders should embrace their responsibility to remedy the poor state of teacher professional learning so that it fulfills its promise of supporting teachers' ongoing development. Some efforts have been undertaken to do this, such as by discouraging PD delivered via one-time workshops. But these efforts have largely fallen short. And delivering on this goal will remain a challenge until all stakeholders involved in educators' development—from pre-service to in-service training—address key obstacles that limit PD from being effective even when it appears to reflect evidence-based practices.

Identifying the obstacles to effective PD is the critical first step to overcoming them, just as—to use a medical analogy—diagnosing a health issue is the first step toward treating it. But, as with many health issues, to successfully remedy them, we must go beyond treating the symptoms to unearthing the root causes. Similarly, to overcome the obstacles to effective PD, educators and policymakers need to understand the various policies and other conditions producing the obstacles, as well as the actors within the education system that play a role in creating or sustaining them.**

This paper strives to provide these insights at a time when states and districts are reflecting on the new latitude and potential uses of federal funds for educator improvement under the recently reauthorized Elementary and Secondary Education Act.*** What will it take to help the vast majority of teachers who want to improve and develop their practice? We ultimately encourage a move away from putting Band-Aids on our current PD efforts and toward working collaboratively to create a high-functioning system of educator professional learning—from initial preparation through the highest levels of career advancement.

Notes on terminology and methodology:

*Some in the education field differentiate between stand-alone workshops and seminars, which they call "professional development" (PD) and experiences that are more embedded into the classroom work of teachers which they call "professional learning" (PL). In this paper, the term "PD" is used throughout to refer to any type of experience that a practicing teacher engages in (on a voluntary or a required basis) with the explicit intention of improving his or her practice. When we use the term "professional learning" in this paper, it is to refer to a desired outcome of PD—learning leading to improved practice—or the system of adult learning within which all PD experiences fit.

**The term "actor" is used throughout the paper to refer to the various entities within the education system that play a role in creating or sustaining obstacles to PD. The choice of the term "actor" is meant to reinforce the power each named entity holds to act and overcome the obstacles outlined herein.

***In addition to conversations with and written feedback from numerous education stakeholders (see acknowledgments, inside cover), we conducted an extensive review of existing research, policies, artifacts, and programs related to PD in order to identify key obstacles to effective professional development and actors responsible for contributing to them. Works cited provide the sources of specific data, previous research on obstacles, specific illustrations of obstacles, or other evidence to support the claims made herein.

OBSTACLES TO REALIZING A PRODUCTIVE PD THEORY OF ACTION

The implicit theory of action behind PD is that if education leaders support teachers' engagement in high-quality learning experiences, then teachers will improve their classroom practice, and in so doing, increase student learning and overall success.[6] For this theory of action to be realized by school leaders, with the support of states and districts, it must be tied to a pathway that maps out how these goals will be achieved.* Such a pathway would include the following steps outlined in **Figure 1 below**, which should feed into an ongoing cycle:

Figure 1 | Pathway to Effective PD: Realizing the Theory of Action

Identifying Professional Development Needs

Step 1

Step 2 Choosing Approaches Most Likely to be Effective

Assessing PD Outcomes

Step 4

Step 3 Implementing Approaches with Quality and Fidelity
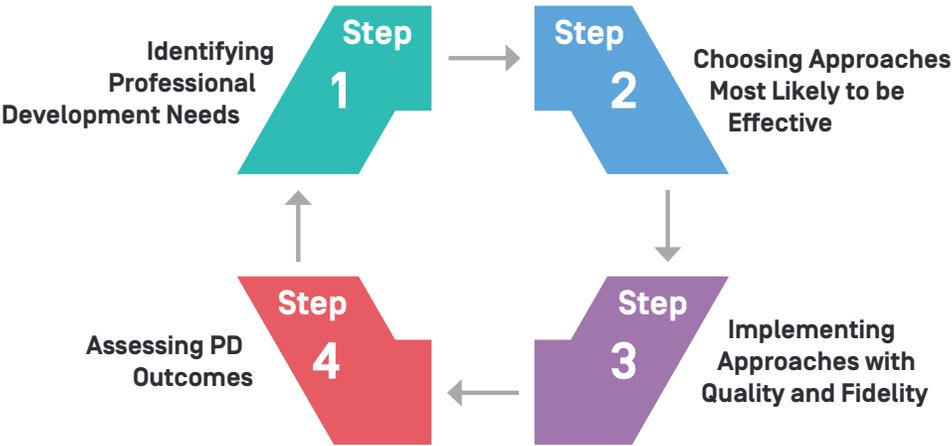
Note: This paper is not the first to recommend this type of pathway for informing the professional development process, and creating a system of adult learning within our education system. The theory of action pathway presented here is intended as a basic framework, although more detailed models exist, such as the Backmapping Model for Planning Results-Based Professional Learning.[7]

However, most PD efforts are not tied to such a theory of action, and do not follow a pathway like the one outlined here. Following is a synopsis of the key obstacles to achieving each of the steps associated with the above theory of action for effective teacher PD. Embedded within are the actors—schools, districts, states, educator preparation programs, and the federal government—who play a role in creating or sustaining them.

Obstacles to Effective PD Pathway Step 1

1. Identifying Professional Development Needs

The first step in realizing effective professional development is to diagnose teachers' learning needs—whether at the individual, team, school, or district level—in response to an assessment of students' learning needs.[8] Unfortunately, due to 1) **a lack of a shared vision around what excellent teaching entails**, 2) **limited useful data on teacher development needs**; and 3) **a failure to prioritize leaders' roles and skills in identifying teacher and student learning needs**, many schools and districts have not focused on identifying areas of need to inform PD.[9]

Lack of a Clear, Shared Vision

Teaching is a difficult, complex task, and disagreements about how much is art, craft, or science abound.[10] Despite several efforts within the U.S. to establish a common vision of good teaching practice—the National Board for Professional Teaching Standards, the Chief Council of State School Officers' InTASC Model Core state professional teaching standards, the American

Association of Colleges for Teacher Education and Stanford University's edTPA assessment for pre-service teachers—a clear, shared vision has remained elusive.[11] But without it, the field lacks a consistent way to even talk about effective teaching, let alone identify development needs.

This lack of a shared vision extends from in-service teaching to requirements for entry into the profession and pre-service teacher training. States have varying professional teaching standards intended to provide guidance around the elements undergirding high-quality teaching, varying teacher licensure assessments used to determine entry into the profession, and varying educator preparation program approval criteria and processes.[12]

Even within states, the vision is not particularly clear or consistent. States' professional teaching standards are often written in such a manner that educators can interpret them in various ways. For example, a performance indicator for one of the InTASC Model Core Teaching Standards—used in some fashion by the vast majority of states—provides little clear direction for what teacher performance should look like in helping students apply content, stating "The teacher facilitates learners' use of current tools and resources to maximize content learning in varied contexts."[13]

Additionally, states' professional teaching standards are also not well connected to the other systems that shape teacher practice, from pre-service to in-service. Specifically, the vision communicated in states' professional teaching standards is often not well integrated into the licensure process, educator preparation programs' practices, or even the tools with which practicing teachers are evaluated. The National Council on Teacher Quality has found that only eight states' teacher licensing processes attempt to verify that all new teachers meet state standards by specifically aligning pedagogy tests with their own professional teaching standards.[14] While most states' teacher preparation program approval processes do require that programs align their standards and expectations with those

of in-service PreK–12 teaching, few appear to be rigorously enforcing them.[15] And, in a review of the 21 states with state-developed teacher evaluation models, New America found that fewer than half provide resources that help educators understand how state teaching standards are integrated into the tools with which in-service teachers are evaluated and developed.[16] It is difficult to assess where needs exist without a clearly defined, shared vision of the core knowledge and competencies teachers must master to best help students learn, or a common language to describe and provide rationale for those needs.

Limited Useful Data

Limited useful data about development needs have also been a barrier for meaningfully engaging in a needs-based analysis for PD. In the past, the tools and methods schools used to observe and evaluate teacher practice produced little valuable information on district, school, or individual teacher PD needs.[17] But over the last several years, states and districts have begun to put in place more rigorous teacher evaluation systems that have the potential to improve practice, in large part by providing more specific clarity around good teaching practice and better assessments of where teacher PD needs lie.[18]

However, although new in-service teacher evaluation systems have the potential to provide local and state decision makers with better data—from classroom observation data to student data, such as work artifacts, formative assessments, and surveys—this information has not yet been widely used to inform PD.[19] This is partly because new evaluation systems were initially designed and operationalized for teacher accountability more than for support and hence have been focused on overall performance ratings rather than demonstrated performance of specific knowledge or practices.[20] Also, just as many of these systems have failed to identify much variation in overall ratings, some may struggle to differentiate performance on individuals elements of teacher practice. Additionally, state education agencies (SEAs) have

varying levels of access to data about individual-, school-, and district-level teacher performance to help provide or guide aligned professional learning efforts. In fact, some are banned from having any such access in the name of privacy.[21]

Failure to Prioritize Leaders' Skills in Identifying PD Needs

Another reason these new data are not being leveraged to drive teaching improvement is that states and districts have not made teacher development a core focus of school leaders' roles, despite it being an increasingly important role for principals to help ensure student success.[22]

First, at the in-service level, school leaders are still often primarily evaluated on their management of their schools' day-to-day operations, not on their ability to evaluate teachers and help them develop.[23] And many school and district instructional leaders are not well-equipped to identify individual teacher, school, and/or district needs, let alone pair them with high-quality development opportunities, without substantial development themselves.[24] Most have grown up in the same system they are helping to lead, with no shared, evidence-based vision or language around excellent teaching. Hence, without training and support, most leaders can only speculate about what high-quality instruction looks like.[25]

But why are principals and other instructional leaders not being trained to identify needs-based PD as part of the administrator preparation process? First, states have generally set a low bar for gaining initial certification as a school administrator that does not require any demonstration of competency as an instructional leader for teachers. Analyzing data to determine needs or recommending development activities based on needs data across school, grade levels, and subjects is never a requirement.[26] Additionally, most districts do not have hiring processes that focus on school leaders' ability to support teacher development.[27]

Finally, about one-third of states and most districts

have adopted teacher salary policies that are primarily based on years of service and post-secondary credentials; states tend to set minimum salary requirements, while individual districts determine specific teacher salary schedules.[28] Salary requirements may seem unrelated to leader skills, but this focus on additional degrees to gain increases in compensation leads many teachers only seeking a pay bump to enroll in administrative degree programs. This results in a large proportion of educators enrolled in administrative programs who are unconcerned about whether the training they receive adequately prepares them to become administrators because they have no intention of ever pursuing that role.[29]

Combined, these actions by states and districts put no pressure on school administrator preparation programs to include rigorous, relevant coursework or strong clinical training components related to being instructional leaders.[30] Not surprisingly, many of these programs fail to prepare school leaders to assess schoolwide and individual teacher needs, deliver meaningful feedback, or suggest aligned PD.[31]

Obstacles to Effective PD Pathway Step 2

2. Choosing Approaches Most Likely to be Effective
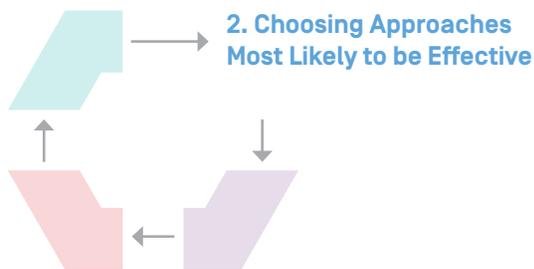
While limited, some rigorous evidence exists that highlights which PD approaches are likely to be most effective in meeting teachers' and students' needs [**see: "What Does High-Quality Research Say about Developing Teacher Practice?" on page 8**]. But the PD approaches used to improve teacher knowledge and skills are often not chosen based on this evidence. For a variety of reasons, PD often is

not relevant to teachers, does not provide teachers opportunities to practice and receive feedback, does not provide sufficient time for teachers to fully develop new skills or knowledge, and is not sustained.

For instance, PD is frequently provided in a pre-packaged and pre-scheduled format, with content that is "one-size-fits-all."[43] These types of efforts are unlikely to be relevant to all teachers required to attend, or to help teachers understand how to implement the strategies and knowledge being relayed in their specific grade or content area. In fact, a teacher with enough expertise in an area to lead development on a particular topic most often still has to sit through more basic-level PD on that topic with her peers without being tapped as an expert resource—a missed opportunity all around. This type of blanket PD is the equivalent of a doctor prescribing the same dose of pain medication for every patient complaining about pain, regardless of patient age or weight.

This is not to say that there are no trainings that are beneficial to have all teachers on staff attend (e.g., an overview of new academic standards, goals, and larger shifts expected in teaching practice). But even these types of development activities require more personalized follow-up to help teachers internalize the information, practice it, then apply it in their particular grades, subjects, and classrooms. What is more, school districts continue to deliver the bulk of PD via short-term workshops, despite this format typically providing teachers with minimal or no opportunity to actively practice new skills and knowledge over time or receive feedback on them, which are aspects of PD found to be critical for real learning to occur.[44]

Why do districts make this choice? One possibility is that workshops are easy to schedule within the confines of teacher contracts that specify the number of minutes available for PD.[45] Another is that they may demand less time and human capital to plan and implement than more evidence-based approaches.

What Does High-Quality Research Say about Developing Teacher Practice?

Many studies of professional development have been conducted, and yet there is still a lack of rigorously-designed research in this area.[32] Still, a few high-quality studies* identified by the Institute of Education Sciences' What Works Clearinghouse (WWC) provide guidance around aspects of PD programs that can lead to improved teacher and student learning outcomes, and adult learning theory** offers perspectives on why:

- ***PD needs to be explicitly relevant to teachers' professional lives and responsibilities.***
  Research suggests that the most effective PD content is focused on specific strategies and relevant to teachers' daily professional lives, including grade and content areas, and problems of practice.[33] Adult learning theory posits that making PD content relevant to teachers' daily practice is effective because it helps motivate professional learning, and also encourages relevance of PD opportunities based on work context and prior experiences.[34] To maximize teachers' learning, research finds that the PD content should also align with the other standards, assessments, and goals that teachers engage with in their professional lives.[35]

- ***Teachers need substantive time to learn new knowledge and skills.***
  Teachers must spend a fair amount of time in a given PD program before they can see effects on their classroom practice and on student learning; this ranged anywhere from 14 to 80 hours for the specific programs in the studies identified by WWC.[36] Spacing these hours out over weeks or months, as opposed to learning in a compressed time period, can help teachers retain what they learned.[37]

- ***Active learning shows promise.***
  Aside from time and content, the approach or delivery of PD influences its effectiveness as well. For example, personalized coaching and active learning—including opportunities to practice and receive feedback on newly-learned techniques—have been shown to improve teacher and student outcomes.[38] Adult learning theory also suggests that taking a problem-solving approach during PD, such as creating and discussing new lessons plans to address current students' gaps in learning, is a helpful learning technique.[39]

- ***Focused and well-organized collaboration between teachers can be beneficial.***
  Collaboration between teachers—when it is done in focused, well-organized, expert-led teacher teams—can improve student learning and trust between teachers. However, more rigorous sustained, well-implemented research is still needed on which types of collaboration most successfully improve teacher practice and student outcomes.[40]

To be clear, research-based PD alone is not a miracle drug for changing student outcomes. *A recent report by Learning First found evidence that several other nations and provinces—British Columbia, Hong Kong, Shanghai, and Singapore—have had success with teacher development strategies that employ some combination of these elements.[41] However, in none of these systems was using research-based PD the only element playing a role in improving student outcomes; these systems tended to undertake other strategic professional learning reforms around the same time.*

As such, none of the evidence-based factors will be sufficient for successful professional learning on their own, but rather provide insight into the foundational elements necessary for success. And while reliable research has tended to investigate the impact of specific, contained PD programs, efforts embedded into the everyday work of schools and teachers that reflect these key aspects of effective PD (such as sustained, well-implemented professional learning communities) hold promise in fostering teacher learning as well.[42]

*The Institute of Education Sciences' What Works Clearinghouse (WWC) standards for rigorous research include valid experimental or quasi-experimental research design, measurement of student outcomes, and generalizable results.
**While elements of adult learning theory can help provide a rationale for why certain elements of PD are found to be most effective, little rigorous research has been specifically attempted to investigate the theory as a whole.

PD is frequently provided in a pre-packaged and pre-scheduled format, with content that is "one-size-fits-all."

A third possibility is that states' long-standing relicensure/recertification policies have tended to encourage these one-off types of PD [**see Figure 2 on following page**]. These policies typically require that teachers' "need" for PD be identified in a compliance-focused fashion centered around "seat time." This type of system is common in other licensed professions, including medicine. But it should be a greater public policy concern in education as districts are often one of the PD providers that can satisfy these relicensure requirements, and hence public dollars are largely funding these efforts.[46] In the name of professional development, state policies require teachers to log the time they spend in a seat—referred to by various names, such as "continuing education units" (CEUs), "clock hours," "professional development units" (PDUs), "college level credits," or "contact hours"—to retain licensure/certification.[47] These policies often encourage educators to take part in a pre-packaged short-term workshop or seminar, or perhaps a semester-long lecture course, potentially delivered by someone without experience in their grade, content area, or school context.[48]

While states and districts typically publish standards and guidelines for fulfilling CEUs, many provide teachers wide latitude in choosing their workshops or courses—perhaps specifying only that a small proportion of CEUs be obtained in a specific content area, such as literacy—as long as the entities providing the PD are approved providers [**see: "Benefits and Drawbacks of Wholly Self-Directed Teacher PD Approaches" on page 11**].[49] This may not be an issue if states and districts employed a high-quality process for PD provider approval, but providers are not expected to demonstrate evidence for why their approach is expected to work, let alone evidence of whether it actually did.[50] Despite evidence that some PD providers' relevant skill or expertise may be lacking, sometimes the only

requirement states make of prospective providers is to sign a statement of assurance that they comply with state regulations.[51] According to the Bill & Melinda Gates Foundation's (BMGF) *Teachers Know Best: Teachers' Views on Professional Development* report, this has produced a "highly fragmented market of service providers" where independent consultants are by far the most common external providers of PD, and tend to be known within only a handful of districts.[52]

Because states and districts typically do not vet the quality of PD providers or their products, these providers have little incentive to invest resources in incorporating evidence-based practices into their offerings, or in performing their own high-quality research to produce evidence of effectiveness. Not surprisingly, few have non-anecdotal evidence to point to which would support their continued use.[53] Additionally, recertification policies create incentives for PD providers that are misaligned with the needs of teachers and schools: providers have a motivation to create PD offerings responding to (and sometimes helping create) the "panacea" education fads of the moment, rather than helping schools set up deep systems for improvement based on evidence of how adults learn and modify their behaviors.[54]

In sum, the way teachers, schools, and districts choose many PD activities is driven by compliance with policies—and/or established relationships with individual PD consultants—rather than based on inquiry into and reflection on what is most likely to be effective.[55]

Figure 2 | PD, CEUs & the Path to Recertification

Teachers are often required to obtain **continuing education units** (CEUs) in order to renew their teaching certification. The predominant way of fulfilling these CEUs is through **professional development coursework.**

What does the **PD path to recertification** entail?

1. States and districts set teacher recertification policies—such as required CEU hours, frequency of renewal and (sometimes) types of required CEU coursework. They also determine the process for approval of prospective PD/CEU providers

3. Approved providers determine which courses to offer and publish offerings to districts and teachers
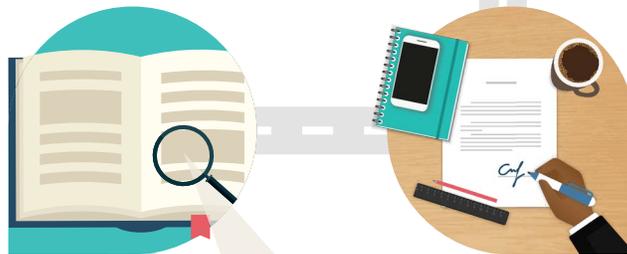
2. Prospective PD providers apply for approval to offer CEUs—sometimes with little more than a form agreeing to comply with regulations in place

Example Offering:*

Instructional Strategies that Build on the Neurodiverse Gifts of Every Student

"Expand your practices of diversity to include students with diverse types of minds and learning styles. Explore strength-based approaches that promote true inclusiveness and actively change the culture of your school."

4. Teachers are provided with many PD options for attaining CEUs, but no tools to adequately vet options to ensure their relevance or quality

5. Providers deliver CEU-eligible PD via pre-packaged workshops, seminars, or courses, some of which are at odds with best-available research

WHAT'S MISSING?

1. Stricter vetting of PD offerings eligible for earning CEUs

2. Demonstration of teacher learning or practice improvements to earn CEUs

3. Opportunities for meaningful professional learning

6. Neither teacher nor provider is expected to provide tangible evidence of the learning that took place in the course to receive CEUs or continue providing them, respectively

*This example of a PD offering from a state-wide PD in-service day, worth four CEUs, comes from the Oregon Department of Education's "Educational Explorations Fall Flyer 2014," http://www.ode.state.or.us/pubs/update/fall-flyer-2014.pdf.

Benefits and Drawbacks of Wholly Self-Directed Teacher PD Approaches

With few meaningful development opportunities curated for them, teachers are finding creative ways to access PD experiences that are more individualized.[56] While this is likely to go hand in hand with increased satisfaction and motivation to learn, it puts the onus for targeted professional learning on the backs of already-busy teachers.[57] Also, few good tools exist for educators to assess the quality of what is available, and whether it is likely to meet their needs.[58] So even when strong evidence for particular PD approaches does exist, educators often are not aware of it, or are not using it to inform decision making.[59] Not surprisingly, the Teachers' Views on Professional Development *research found teachers are sometimes even left unsatisfied with their own self-directed PD.[60]*

In fact, the notion of full teacher agency over PD is in conflict with some cognitive science research. Being motivated to learn and improve is critical for teachers to meaningfully invest energy in PD, so teachers need to believe their PD is focused on the right areas for them to develop and need to have confidence in the methods used. However, educators do not necessarily have sufficient data or skills to determine where their practice is strong and where it needs improvement. This is not a specific criticism of educators: research indicates that humans, regardless of profession, are inherently not good at knowing what they do not know. Rather, as an experimental research paper by psychologists Justin Kruger and David Dunning found, "the skills that engender competence in a particular domain are often the very same skills necessary to evaluate competence in that domain."[61]

Additionally, teachers may be biased towards those practices and designs that reflect the philosophy or vision of "good" teaching they already have, even when it does not align with research. For example, teachers may be drawn to PD on how to effectively teach to students' different "learning styles" even though research indicates that such different styles do not exist.[62] More importantly, even when educators do have the data and skills to determine focus areas for improvement, they may not be able to diagnose by themselves what they should do differently, or the tools to help them make the necessary modification to their practice. As such, PD that balances teacher self-direction and input from instructional experts may hold the most promise for achieving the goal of improved teacher practice and student outcomes.

> ## PD that balances teacher self-direction and input from instructional experts may hold the most promise for achieving the goal of improved teacher practice and student outcomes.

Obstacles to Effective PD Pathway Step 3

3. Implementing Approaches with Quality and Fidelity

Even when most of the elements of a strong professional learning theory of action are in place—goal-oriented, needs-driven, incorporating evidence-based methods—poor implementation can still interfere with PD achieving its intended impact. For example, while research shows that intensive coaching can be a valuable form of PD, just designating individuals as coaches and making them available to teachers is not enough.[63] There are countless other factors which affect the success of a coaching relationship: the coach's expertise in the teacher's grade span, subject, and/or school context; the depth of observation, feedback, and suggestions for things to try differently; the authority of a coach to recommend next steps; time and accountability for teachers to follow through with recommended next steps; and so on.

Just as there are countless factors that influence PD implementation, there are myriad obstacles to ensuring high-quality implementation. As such, this paper will focus on two implementation issues which influence all types and aspects of PD: 1) the PD efforts undertaken are frequently **not intentionally integrated in a coherent fashion**, and 2) there is **insufficient capacity** of individuals throughout the education system to promote and support effective PD efforts.[64]

Incoherent Implementation

Teachers' work is multi-faceted, requiring them to incorporate academic standards, curriculum, and assessment within their instructional practices, as well as approaches for differentiating instruction, engaging students and families, and more. And many teachers need coherent support in developing their knowledge and skills in all of these areas.[65] However, the PD efforts that states, districts, and/or schools make available to teachers may not be clearly connected to, or even compatible with, one another.[66] For example, a district may provide teachers with PD on using technology in the classroom as well as on specific approaches to differentiated instruction—such as Response to Intervention—but these opportunities are unlikely to help teachers integrate learning from both to support a student with special learning and behavior needs.

Incoherent implementation stems largely from two issues: 1) too many competing PD priorities and 2) failure to coordinate PD efforts at the local level such that teachers see an integrated system with clear objectives and pathways to improvement.[67]

Both of these issues occur in part because the different roles within state educational agencies and districts are often funded by, and responsible for allocating funding from, specific federal funding sources.[68] Even though the principal federal law governing primary and secondary schools—the Elementary and Secondary Education Act (ESEA)—touches many aspects of PreK–12 education, it is split into different titles and programs that are accompanied by separate funding streams and conditions. Perhaps unsurprisingly, many SEAs and districts organize themselves around the funding streams in siloed ways, instead of organizing to work comprehensively to achieve the broader goals of the policy.[69] For example, the divisions working on curriculum and instruction are typically separate from those responsible for assessment, which are separate from those focused on student support or on hiring and developing talent.[70] Regular coordination among these divisions has been rare.[71]

As a result, state education agencies are not typically organized to focus comprehensively on improvement of teaching and learning, which can lead to contradictory messages being sent to their districts and schools about which initiatives are priorities for PD or how to think about these initiatives holistically. For example, as SEAs roll out statewide initiatives, such as new academic standards or new educator evaluation systems, they may struggle to communicate how they fit together or help districts and schools best do so. This, in turn, makes communicating the types of PD opportunities that will be needed to ensure that educators understand system-wide initiatives and expectations difficult.[72]

The same is true for the relationship between districts and schools.[73] Additionally, even those directly responsible for teacher development within schools—principals, mentors, coaches, other teacher leaders, and peers—often do not communicate and coordinate priorities well among themselves.[74] Most states and districts have not developed or supported the development of systems to help various staff members document feedback and recommend PD in a central location to ensure they are showing teachers a clear, coherent path forward on development.[75] The federal government appears to recognize this obstacle, as the recently reauthorized ESEA law now requires districts applying for federal Title II funds to provide assurances that they will coordinate PD activities funded via this stream with other PD programs. This requirement provides a necessary signal, but does not offer strong incentives for taking on this difficult work, as there is no clear accountability for not doing so.[76]

Adding to this incoherence is the fact that new leadership at the school, district, or state level often comes with new agendas and priorities, including for PD.[77] And education leadership turns over relatively rapidly; the typical district superintendent spends three or four years in a given job.[78]

The result is that teachers refer to much of the PD they are required to participate in as "scattershot" or "spray and pray"—trying to broadly cover lots of

different areas and initiatives du jour without an intentional, big picture approach.[79] This is at odds with what research finds effective PD to look like: focused on sustained efforts in a few key areas, and communicating and delivering new efforts in a way that integrates with or replaces what is already in place.[80] According to research from 2005–06, only 17 percent of elementary teachers participated in PD explicitly based on what they learned in earlier trainings.[81] While there is no equivalent recent research in this area—a problem in and of itself—there is no clear indication that anything has changed from a decade ago.[82] This is the equivalent of a doctor prescribing an additional medication to treat a patient's pain at each subsequent appointment, without checking to see if any of the drugs are contra-indicated.

Insufficient Capacity

Educators and other education leaders face multiple capacity constraints that limit their ability to identify teachers' development needs and choose the best approaches to support them, such as a lack of sufficient time, knowledge, and skills. The limited capacity of other individuals throughout the education system also affects the quality of teachers' PD experiences.

State policies and district teacher contracts often specify the number of school days and/or minutes teachers can engage in PD. As a result, most districts and schools have struggled to think innovatively about how to organize teachers' schedules in order to allow for the types of learning experiences that are more likely to be meaningful, such as observing another teacher model a practice, then practicing it over a period of time and receiving feedback. As a result, development has often been relegated to specific "in-service" days or time allotted after school as opposed to being integrated into teachers' daily work. In a 2014 survey commissioned by BMGF, school and district leaders claimed that insufficient time built into teachers' schedules was the most significant obstacle they faced in promoting professional learning.[83]

As previously mentioned, in the time that teachers do have available to engage in PD, they are often asked to engage in a large number of diverse, and sometimes competing efforts. This can make it difficult for teachers to deeply engage with the content and skills required for each initiative deemed a priority. As such, the resulting implementation may be superficial, making it unlikely that teachers—or their students—will reap much benefit, even when the PD is high-quality and evidence-based.

School leaders are in a similar time-crunched position: they are responsible for so many administrative-and operations-related tasks that they struggle to find time to provide teachers with regular feedback and to support their development in a meaningful way.[84] And as a substantial number of states and districts have made cuts to education budgets over the past few years, more principals are doing more, with less. Many no longer have assistant principals, some have been managing multiple schools or have both a district and a school leadership role, and others lead the school and also teach classes within it.[85] Additionally, some states and districts do not provide tools or other supports to principals to help them thoughtfully plan and select PD, including professional development opportunities of their own.[86] With so many demands on their time, and little external support, school principals may struggle to be intentional about PD.[87] Others may burn out: many principals leave the profession after only a few years, before they have a chance to fully develop their skills in this area.[88]

> **Even with more time and resources available, many school principals would still be missing some of the knowledge and skills necessary to identify and support meaningful development opportunities for all of their teachers.**

As discussed previously, even with more time and resources available, many school principals would still be missing some of the knowledge and skills necessary to identify and support meaningful development opportunities for all of their teachers. In fact, with the varied content areas and grade levels within a given school, it may be unrealistic to expect one person—the school principal—to have the expertise to do so for all of his or her staff without additional support.[89]

What is more, many states and districts have not developed guidance and supports to create greater school capacity—beyond the principal—for providing teachers with rich, frequent feedback and aligned development opportunities. For example, despite it being a common practice in countries with high-performing professional learning systems, states have not strongly encouraged districts and schools to formally delegate observation and feedback duties to staff other than school principals.[90] Only four states require multiple observers as part of formal teacher evaluation processes, and 15 others allow it. Meanwhile, few districts and schools have taken advantage of this option where it exists, such that school principals remain the sole observers in most places.[91] Why this still occurs is unclear. In some districts, collective bargaining agreements explicitly preclude teachers from "formally" observing other teachers. In others, it appears that a lack of capacity begets lack of capacity: without time and skills to train other school staff to perform these duties well, schools and districts continue to put the entire burden of teachers' evaluation and associated development on the principal. Finally, a lack of shared accountability for a school's success may lead some principals to be wary of delegating such an important task to others.

Many states, districts, and schools also fail to think innovatively about how to create more opportunities for teachers to informally provide feedback to each other. When done intentionally, such as with Tennessee's Instructional Partnership Initiative pilot which pairs teachers based on ratings of their classroom practice, this type of feedback process

has been shown to have an impact on teacher practice and student outcomes.[92] While more places are attempting to better integrate PD into educators' work day and leverage the expertise of other teachers—often through evidence-based structures like "professional learning communities" (PLCs) that meet regularly during common planning time—many school and district leaders may lack the knowledge and skill to implement these efforts in ways that result in this time being well-used.[93] Using the PLC example, school and district leaders often fail to provide teachers with clear expectations and processes for using PLC time productively, or to designate skilled teachers or other staff members to facilitate these sessions as inquiry-based approaches to improving instruction.[94]

States and districts struggle with capacity issues as well, which interfere with their ability to provide effective communications and support to schools that help ensure teacher PD is implemented well [**see: "Adoption Without Strong Implementation: State Professional Learning Standards" below**]. Many state education agencies and districts are sparsely staffed, inadequately funded, and/or have staff without sufficient time, skill, or knowledge themselves to successfully implement all of the necessary pieces of major initiatives simultaneously.[95] Without greater capacity on the part of local and state education administrators, improving PD implementation at scale will continue to be a challenge.

Obstacles to Effective PD Pathway Step 4

4. Assessing PD Outcomes

Assessing PD's outcomes relative to objectives is rare. Perhaps this should not be surprising, given that none of the key actors influencing teacher PD—school leaders, district leaders, state leaders, educator preparation programs, or other "external" PD providers—are held accountable for the effectiveness of the learning opportunities. Uncertainty about how to measure outcomes, and in some instances, even about how to track the basics of PD occurring, also plays a role. The result is that, in many locales, almost no data—either on what PD transpired or its effects—are systematically collected at all.

Anecdotally, many working in education have a sense that currently teachers' PD is not of great quality: the 2014 BMGF survey found that only three in ten teachers are highly satisfied with the PD they engage in, and only one-third say it is getting better.[98] Educator satisfaction surveys, like the one

Adoption Without Strong Implementation: State Professional Learning Standards

*Despite a lack of shared vision for what excellent teaching looks like, states do have widely-agreed upon standards for what professional learning should look like **when implemented well**. Nearly 40 states have adopted common standards to guide teacher professional learning, such as requiring skillful leaders, applying research and sustaining support for implementation, and using a variety of data sources to plan and assess learning experiences.[96] However, most states that have adopted such standards have not invested in ensuring these are implemented at the local level, often not doing much other than posting them on their websites.[97] As such, it is unlikely that these standards are meaningfully informing the implementation of teacher PD efforts.*

Available Tools for Assessing PD Impact

Several teacher surveys try to dig beyond questions of satisfaction with PD to assess the quality of implementation and impact of the experiences. The Standards Assessment Inventory (SAI2), developed by Learning Forward, asks teachers about frequency of core PD practices occurring in their schools, as well as how PD contributes to teacher learning and student outcomes. For example, on a scale from "always" to "never," teachers rate whether "professional learning supports teachers to develop new learning and then to expand and deepen that learning over time."[100] While not specifically focused on PD, the New Teacher Center's Teaching, Empowering, Leading and Learning (TELL) survey asks teachers whether they agree with several statements about how the PD in their schools helps teachers implement strategies and increase student learning.[101] These types of surveys may be helpful at gaining an overall picture of the implementation or quality of PD in a school, district, or state, but they are less helpful in identifying which types of PD are having a measurable impact on teacher practice and student achievement. And it is unlikely that teacher self-reporting is the best mechanism to capture changes to practice, given humans' struggle to accurately self-assess in areas in which they are not yet proficient.[102] While teacher surveys can provide some helpful insights into teacher perceptions of PD, they should be utilized in conjunction with other, more objective and nuanced measures of teacher and student performance such as frequent classroom observations and formative assessments.

employed by BMGF, are easy to administer but do not attempt to assess whether changes in teacher knowledge or behavior occurred in conjunction with PD experiences, let alone whether student learning was positively affected.[99] A few other surveys exist which attempt to do this, but these also have limitations [**see: "Available Tools for Assessing Teacher PD" above**].

As such, after teachers take part in a development experience, very few schools, districts or SEAs attempt to assess whether the goals of PD's theory of action are being met with regards to teachers 1) incorporating what they learned into practice; or 2) translating their new knowledge and skill into improved student outcomes.[103] For example, when determining whether to grant teachers CEUs toward recertification, states do not assess whether a teacher's knowledge or practice progressed as a result of his or her PD experiences. Instead, it tends to be a box-checking activity based on seat time.[104] When there is follow up, it is often long after the experience took place, perhaps as part of a teacher's annual performance review.[105] This is the equivalent

of a doctor finding a patient's blood pressure was alarmingly high, but telling the patient he would wait until his next annual check-up to see if the prescribed medication had lowered it successfully.

What is more, there is no tracking of data about the basics—what, when, how, or for whom—related to the PD experiences in which teachers are engaging, a prerequisite for being able to assess which experiences and conditions are most impactful and for which teachers.[106] TNTP's *The Mirage* study found that none of the districts examined took a comprehensive inventory of these basic questions for all of their formal PD investments, not to mention school-dictated ones.[107] Districts did not have a good sense of their PD landscape or the associated outcomes, making it all but impossible to keep PD efforts from being scattershot or redundant.[108]

Why is a proper inventory not occurring? One likely reason is that what efforts "count" as PD may be up for debate. For example, the time and compensation of staff who are largely responsible for planning PD

are often recorded under "instructional staff" or "instructional support" instead of under PD."[109]

And tracking school-determined PD such as collaborative learning groups may not be a priority for districts and states. One potential reason is that, despite providing roughly $2.5 billion to states and districts for teacher PD annually, the federal government has not required SEAs or districts to meaningfully collect and report on even the basics of their use of federal funding to develop educators. Nor has it developed resources to encourage or assist states and districts to track this information themselves. Perhaps not surprisingly, most SEAs and districts have not created good systems for tracking their prior or ongoing PD efforts, let alone how well they are working.[110]

The data the federal government *has* collected from states and districts have not been particularly useful for trying to understand the current PD landscape, or for assessing outcomes to help home in on what is working and inform state and local decision making.[111] For the last decade, the U.S. Department of Education has requested that states and districts respond to a voluntary survey [**see Figure 3 on page 18**] about what kinds of PD they are spending federal funds on, which the Department then aggregates and publishes.[112] But the categories of PD outlined are not particularly descriptive of what kind of PD is occurring, such as "professional development provided by professional development coaches."[113] Additionally, participating districts (three-quarters of the 800 districts nationwide for the most recent survey in 2014–15) must only report the number of teachers participating in a given activity, which the Department then aggregates and reports, rather than providing what proportion of teachers from districts surveyed were taking part in a particular activity.[114] As a result, the survey does not enable the tracking of even basic PD trends.

While the Title II-A voluntary survey is probably the most comprehensive public attempt to collect data on PD from U.S. states and districts that exists, another federal survey, the National Center for Education Statistics' Schools and Staffing Survey

(SASS) surveys a nationally-representative sample of teachers on a variety of topics, including their professional learning opportunities.[115] However, this survey only asks teachers about the "intensity of professional development," which is not further defined and hence also fails to provide a sense of the type of PD occurring or its impact.[116] As a result, little evidence is being collected to indicate what kinds of PD are resulting in what kinds of outcomes—and for which teachers—in order to understand progress towards goals or to inform future PD efforts.

TNTP's earlier cited study suggested that perhaps we should not rely on the limited PD evidence that does currently exist.[117] In the study, TNTP documented its attempt to assess what was necessary for PD to "work" for teachers in a handful of large, urban, high-poverty districts by looking at differences in experiences, mindsets, and outcomes for teachers who improved performance and those who did not. However, the researchers had difficulty identifying clear differences between the PD experiences and mindsets of improvers and non-improvers, leading the group to conclude that we have little insight into what PD works. As the report expounds, "most discussions about teacher development presume that we already know...what good professional development looks like; we just haven't been able to do it at scale for all teachers, yet....Unfortunately, our research shows that our decades-old approach to teacher development, built mostly on good intentions and false assumptions, isn't helping nearly enough teachers reach their full potential—and probably never will."[118]

TNTP's claim that our decades-old approach to PD is inadequate rings true based on the evidence available. But it is not because we do not know *anything* about the basic tenets underlying good PD. As detailed earlier, a small number of rigorous studies point to several common elements of high-quality professional learning. Rather, key obstacles to the effective PD pathway, as highlighted herein, coupled with another, more nebulous, element— professional culture— stand in the way of "good" PD strategies translating into good PD outcomes.[119]

Figure 3: Sample Data from U.S. Department of Education Title II, Part A District Survey

Data presented are district (LEA) responses to the following survey question: "For each type of professional development activity listed below, please estimate the number of teachers who participated for the 2013-14 school year (including summer 2014). This can be a duplicated count, in that a teacher can be counted more than once across the different types of professional development. However, teachers should not be counted more than once within the same type of professional development activity."

Duration or type of professional development	Teachers participating
Professional development *during* the school day	
Daily learning team sessions	953,042
Weekly learning team sessions	1,935,071
Professional development provided by professional development coaches	1,810,824
Half-day workshops (2-5 hours)	2,097,916
Full-day workshops (6-8 hours)	2,393,616
Professional development *outside* the school day	
After-school activity (1-4 hours)	1,360,761
Multi-day workshops (16-24 hours)	575,038
Local or national conferences (8-24 hours)	314,269
Multi-week institutes (5-10 days)	223,861
College coursework (9 weeks or semester-long)	177,645

Note: Adapted from the U.S. Department of Education's report, "Findings from the 2014-15 Survey on the Use of Funds under Title II, Part A: Subgrants to LEAs," July 2015.

CHALLENGES TO A PROFESSIONAL LEARNING CULTURE

Professional culture is a complex topic. It is tied to many aspects of the workplace, and hence looks very different from school to school. Still, some common policies, structures, and other conditions have helped foster the development of four common types of cultures in schools that are detrimental to PD's effectiveness: compliance, egg-crate, Lake Wobegon, and complacency.

Some of the obstacles and conditions discussed previously play a role in influencing teaching culture. For instance, perhaps partly due to rapidly shifting PD priorities or seemingly irrelevant PD content, many educators view current development efforts as something to be quietly tolerated so they can get back to their "real work" of teaching students.[120] That is, PD obstacles may not only prevent teachers from committing to developing necessary knowledge and skills, but can also imbue PD with a **compliance-oriented culture**.[121]

But other factors influence professional culture as well. To return to the example of professional learning communities (PLCs): for meaningful collaboration to occur in a PLC, teachers need more than structures that provide time and space to meet together. They also need to establish trusting relationships with each other, demonstrate respect for each other's viewpoints, and be open

to considering a new way forward that may not fit neatly with one's preferred methods of teaching.[122] But historically, schools have not been designed to foster collaborative adult learning. Teachers have typically worked in isolation, tucked away in their own classrooms.[123] This type of independent, closed-door, **egg-crate culture** is at odds with many teachers' stated desire to receive more feedback on how to improve their practice, and ultimately stands in the way of improvement. For example, this leads to cultural norms in some schools that make teachers, even those new to the profession, uncomfortable asking for feedback on or assistance in improving their practice.[124] When teachers are not used to getting feedback from other teachers, it may also become culturally unacceptable for a teacher to provide unsolicited constructive feedback to another.[125]

Educator preparation programs play a role here as well. As part of prospective teachers' clinical preparation, many programs have not ensured that teacher candidates receive ample constructive feedback on their burgeoning practice, to help create an expectation that feedback and ongoing development is an integral part of the profession. In providing prospective teachers with clinical experience in school classrooms, many programs only provide input to teacher candidates a handful

of times, and few seek out supervising classroom teachers that model this approach.[126]

Additionally, most educator preparation programs do not provide evidence-based training to prospective school administrators for creating structures and practices that support trusting, inquiry-based, improvement-driven cultures.[127] States and districts have also not provided much PD of any type to principals, let alone the training and support they need to create school cultures that push teachers to open their practice to ongoing feedback, dialogue, and reflection.[128] As a result, principals may be unsure of how to provide coaching and constructive feedback to teachers while preserving a positive relationship with them, leading many to feel uncomfortable providing teachers with anything other than positive feedback and high performance ratings.[129]

By providing knowingly inflated ratings to teachers, school leaders create a **Lake Wobegon culture** "where everyone is above average."[130] Not surprisingly, in *The Mirage*, TNTP found that less than half of the traditional public school teachers surveyed agreed that they have weaknesses in their instructional practice. However, even those teachers who had been evaluated and provided with feedback about having weaker areas in their instruction did not believe that they had room to improve: when asked about their performance "more than 60 percent of low-rated teachers still gave themselves high performance ratings." So this Lake Wobegon culture is deeply ingrained; it goes beyond being an information problem to being a belief problem.[131]

Educator preparation programs set the Lake Wobegon culture in motion for the teaching profession, by setting low expectations for rigor, and bestowing high grades on candidates that are differentiated only minimally based on demonstrated knowledge or performance.[132] When teachers in a sample of districts were asked to assess their own instructional performance on a scale of 1 to 10, 69 percent of novice teachers rated their instructional performance an 8 or higher.[133] States also contribute to this issue by setting the bar for passing state teacher licensure exams extremely low, with the vast majority of states granting licenses to teachers who score below the 20th percentile.[134]

By indicating to teachers that they have "nowhere to grow," schools and districts may foster a **complacency culture** where the word "improvement" is stigmatized and seen as something one must work toward only if one is a poor performer.[135] State, district, and school policies can also lead to complacency around PD when career growth is not tied to professional growth, but only to experience. For example, when fewer than half of states ground tenure in demonstrable effectiveness (in addition to experience), it can feed into a mindset that professional development is not a priority.[136] Similarly, if school and district leaders do not select teachers for instructional leadership roles based on evidence indicating likely effectiveness in that role, or celebrate teachers who are improving their practice in other ways, they fail to demonstrate that learning and growth is valued by the system.[13]

> **By indicating to teachers that they have "nowhere to grow," schools and districts may foster a complacency culture where the word "improvement" is stigmatized.**

CONCLUSIONS

Various actors at all levels of the education system (federal, state, district, school, educator preparation) play unique, substantive roles in ensuring that teachers' professional development is effective. While schools and districts are directly responsible for teacher development, states, educator preparation programs, and federal actors must be responsible for creating the conditions and circumstances that undergird this critical work. At times, states and educator preparation programs may need to play a more central role in providing PD to schools and districts, as with the federal government to states. For example, when rolling out statewide initiatives, such as new academic standards or evaluation systems, the onus is on states to help ensure that they clearly communicate, and assist district and school leaders in communicating, how these initiatives fit together with other initiatives already in place.

Unfortunately, as a nation, we have not pursued education policies and practices that promote clear roles, or mutual interaction and influence within and across different levels of governance toward a common goal.[138] Instead, much of the interaction that does take place between levels is focused on transactional compliance, rather than collaboration to accomplish a shared set of goals.

This brings us back to the critical need for a common theory of action and associated PD pathway around which all actors can coalesce. A shared PD theory of action provides an organizing framework for turning our education system into a learning system, not just for students, but also for educators. By focusing on developing a PD *system* rather than specific activities, we can create more consistency and continuity in PD, and staying power when leadership turns over at various levels. To achieve this objective, aspects of the human capital pipeline that are not typically considered to be part of "PD"—preparation, hiring, varying levels of licensure, career ladders, and so forth—must also be approached with the goal of developing a learning system.

But even with a theory of action that stakeholders at each level of governance embrace, the difficulty arises in ensuring that all actors effectively and consistently apply and/or support that theory of action. Right now various policies and practices create obstacles to this occurring. As such, bright spots in teacher development do exist in the U.S., but typically only where innovative leaders are working valiantly against the obstacles in place.

Just as no single actor is responsible for all of the obstacles to meaningful teacher professional development, none alone can remedy them. It will be critical for all stakeholders to reflect on the roles they and others play in this realm [**see Figure 4 on pages 22-23**] and acknowledge that, to overcome these obstacles, just changing the bandages will not be sufficient.

The overarching obstacle to realizing an effective system of teacher professional development (PD) is the failure to employ a comprehensive theory of action that follows a clear pathway for improving teacher practice, and ultimately student learning. As outlined in the figure below, this failure is a result of specific obstacles to each of the four basic steps of the theory of action, as well as professional culture challenges.

What are the specific actions that lead to these obstacles being created or sustained, and which actors are responsible? The diagram to the right—color-coded to correspond with each of the relevant steps of the theory of action—provides insight into this question.

Obstacles to a Comprehensive PD Theory of Action

1. Obstacles to Identifying Professional Development Needs
- Lack of clear, shared vision around what excellent teaching entails
- Limited useful data about development needs
- Failure to prioritize leaders' skills in identifying PD needs

2. Obstacles to Choosing Approaches Most Likely to be Effective
- Evidence on which approaches most likely to be effective not utilized

Professional Culture Challenges to a Comprehensive Theory of Action

3. Obstacles to Implementing Approaches with Quality and Fidelity
- Various PD efforts not coherently integrated
- Insufficient capacity throughout all levels of the system

4. Obstacles to Assessing Outcomes
- Lack of accountability for PD effectiveness
- Uncertainty about how to measure PD inputs or outcomes

EDUCATION POLICY

Who is Responsible for these Obstacles and How?

Obstacle	States	Districts	Schools	Federal Government	Ed. Preparation Programs
Priorities change with changes in leadership	✓	✓	✓	✓	
Other competing priorities limit time available for teachers and administrators to deeply engage with PD	✓	✓	✓	✓	
More rigorous evaluation data not widely used to inform PD	✓	✓	✓		
PD content often not related to teachers' daily practice	✓	✓	✓		
PD rarely allows hands-on approach to learning	✓	✓	✓		
Teacher development staff do not identify/communicate PD priorities	✓	✓	✓		
Leaders lack skill and/or knowledge on how to implement approaches well	✓	✓	✓		
Failure by leaders to leverage those with greater PD skill or knowledge	✓	✓	✓		
Career growth not tied to demonstrated effectiveness	✓	✓	✓		
Lack of systems to track basics of PD occuring	✓	✓		✓	
Agencies siloed by issue areas and funding streams, with little coordination across teaching and learning initiatives	✓	✓		✓	
Minimal training for prospective or current administrators on creating trusting, inquiry-based, improvement-driven cultures	✓	✓			✓
No pressure on administrator preparation programs to ensure new leaders have skills to help teachers develop	✓	✓			✓
Understaffing issues limit time for leaders to focus on PD	✓	✓			
Leaders not evaluated based on ability to evaluate and develop teachers	✓	✓			
Compliance-oriented recertification policies fail to encourage evidence-based approaches	✓	✓			
Limited tools available for assessing PD outcomes	✓			✓	
Low bar for success during initial preparation and licensure processes	✓				✓
Teaching standards not well integrated with evaluation processes	✓				
Teaching standards are high level and may be interpreted in multiple ways	✓				
Minimal feedback to prospective teachers during training and education					✓

NEXT STEPS

While this paper outlines the primary obstacles to effective professional learning for teachers, understanding what ails PD is clearly only the first step toward a cure. In order to ensure that ongoing teacher learning and improvement is the rule rather than the exception, the actors identified herein must work together to address these obstacles and conditions and create a true professional learning system.

Where should they start? Research by Learning First on four high-performing international professional learning systems identifies three common strategies and policy focus areas to tackle first:

1) Developing leaders of professional learning at the school, district, and state system levels;

2) ensuring that evaluation and accountability mechanisms recognize and reward effective professional learning;

3) prioritizing professional learning by creating time for teachers to pursue learning throughout the work week, and ensuring supports to use that time effectively.[139]

Given the crucial role leaders play in successfully implementing the elements of the theory of action and in developing and sustaining a supportive professional culture, the attention should be here first, and most intensively, to ensure leaders are well equipped to play these roles. Part of this effort will require rethinking principals' roles and delineating where other instructional leaders can and should play a role within the PD process. But without evaluation and accountability mechanisms that focus all leaders on the goal of teacher learning in service of student learning, and which produce ongoing data on the effectiveness of PD efforts, leaders will continue to get pulled in other directions, or fail to create cultures where rich, honest feedback drives ongoing development.

Evaluation and accountability mechanisms should include quality control measures for "external" PD providers, as well as broader school and educator performance management systems. These broader systems must go beyond measures of student learning and overall teacher performance to include a clear focus on measures of teacher learning and improvement. For this to produce a cooperative, rather than a competitive, learning environment, promotions within the system should be based

on development success, in addition to overall performance. For example, systems could promote teachers based on their personal development as well as how well they help others develop, as occurs in Singapore, a country the U.S. trails by at least one to two years of student learning in reading, math, and science. As states consider revisiting school accountability and educator evaluation systems in light of recent changes to the federal Elementary and Secondary Education Act, it will be critical for them to keep these elements in mind.

Implementing the kinds of professional learning that research supports will, at a minimum, require a rebalancing of resources—more efficiently using current PD resources, including time, to focus on needs-based priorities and evidence-based methods. But since doing this work well will require a substantive investment in human capital, along with a reimagining of teachers' roles and/or school schedules, additional resources will likely be required.

In future work, we will provide a more detailed vision for the efforts different actors can and should take to start enabling and/or moving toward more effective PD, including examples of where different pieces of this work are already being done that can provide a vision for a path forward. It will take a concerted effort among the various players to shift from cursory or inaccurate diagnoses and treatments to more holistic approaches and systemic improvements to PD over time. The ability of educators—and even more importantly, of their students—to advance their learning depends on it.

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