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Research Partnership
for Professional Learning

Dispelling the Myths:

**What the Research Says About
Teacher Professional Learning**

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Overview

This brief evaluates common claims about professional learning (PL) against the research evidence, including a half-dozen recent research reviews and a series of newer, rigorously conducted studies of teacher PL programs. We aim to distinguish fact from fiction about PL, and to help ensure that all teachers and students receive the learning opportunities they deserve.

Our examination of the research found that, too often, commonly-held beliefs about PL were not supported by research findings. We noted anecdotal perceptions that did not stand up to scientific study and identified shared understandings of what does and does not work in PL that were based on an earlier generation of PL research.

> **"We believe that deeply rooted beliefs about effective teacher learning are not always supported by the most up-to-date research evidence."**

The Research Partnership for Professional Learning (RPPL) brings together professional learning providers, researchers, and funders to build an ever-stronger evidence base designed to meet the needs of our teachers, students, and school systems. We recently released a learning agenda detailing the kinds of questions we believe will best support a common vision of stronger PL to support equitable outcomes for all students. We are now in the process of launching a series of initiatives to better understand how to provide stronger improvement opportunities for all teachers.

Myth 1: Professional learning is a waste of time and money.

Truth: Evidence shows that PL can lead to shifts in teachers' skills and instructional practice and significantly improve student learning.

Myth 2: PL is more effective for early career teachers and less effective for veteran teachers.

Truth: PL opportunities have been shown to support teacher development at all levels of experience.

Myth 3: PL programs must be job-embedded and time-intensive to be effective.

Truth: Programs of varying lengths and formats can produce wide-ranging effects depending on how time gets used.

Myth 4: Improving teachers' content knowledge is key to improving their instructional practice.

Truth: PL programs that aim directly at instructional practices are more likely to shift student learning than PL programs with a focus on content knowledge.

Myth 5: Research-based PL programs are unlikely to work at scale or in new contexts.

Truth: Programs can have positive effects across a wide range of schools, but strong implementation can help sustain effects at scale.

Myth 6: Districts should implement research-based PL programs with no modifications.

Truth: Practice fidelity first and adaptation with guardrails second.

The Myths vs. Reality in Teacher Professional Learning

Myth 1:
**Professional learning is a waste of time and money.**

Truth:
Evidence shows that PL can lead to shifts in teachers' skills and instructional practice and significantly improve student learning.

National reports often call into question the value of professional learning efforts, accurately reporting that many districts spend millions of dollars each year on PL with limited payoff for teachers and students.[1] But while not all PL opportunities lead to intended improvements, many do succeed.

Decades of research – including robust evidence from gold-standard randomized experiments – show that effective PL programs can help teachers substantially improve students' academic and non-academic performance.[2] And, more comprehensive evidence comes from meta-analytic studies, which aggregate high-quality, individual program evaluations to determine the average effects of certain kinds of classroom interventions. One recent meta-analysis that incorporated 60 causal studies that featured instructional coaching found that "the difference in effectiveness between teachers with instructional coaches and those without was equivalent to the difference between novice teachers and teachers with five to 10 years of experience."[3] Another on the effects of STEM professional learning programs found average effects of 0.13 standard deviations on state student test scores.[4] Studies that examine growth in teachers' knowledge and improvements in their practice find, on average, positive outcomes from PL.[5]
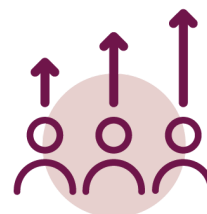
Myth 2:
PL is more effective for early career teachers and less effective for veteran teachers.

Truth:
PL opportunities have been shown to support teacher development at all levels of experience.

PL providers often hear skepticism that PL is useful for veteran teachers. There are several sources for this myth. More experienced teachers tend to report lower satisfaction on surveys about PL efforts than their early-career peers. Policy reports also often highlight findings from

several research papers released in the early 2000s claiming that teachers stop improving after around five years on the job.[6]

The kernel of truth here is that teachers do improve more rapidly during the early years of their career, in part because early-career teachers receive substantial on-the-job learning opportunities. Yet the research that claimed to have identified a plateau in teacher learning relied on overly strong methodological assumptions. More recent studies that relax these assumptions find substantial improvement over the course of individual careers, with the average teacher improving their effectiveness at raising student performance by about half as much between years five and 15 as they did during the first five years of their career.[7]

> "**Several evaluations offer important proof points of programs that have proven effective for veteran teachers.**"

Recent studies of PL programs add to this picture. Several evaluations offer important proof points of programs that have proven effective for veteran teachers. For example, Pianta and colleagues conducted a rigorous evaluation of MyTeachingPartner in a sample of mostly experienced teachers and found large impacts on classroom practice and student outcomes.[8] Papay and others studied the Instructional Partnership Initiative, which paired teachers to work together in collaborative partnerships based on areas of relative strength and weakness, and found large and equivalent effects for early career and veteran teachers.[9]

As a result, while it's true that individual PL programs might be more effective for some teachers than for others, we know that PL has the

potential to be as effective for those who have substantial classroom experience.[10]

Myth 3:
PL programs must be job-embedded and time-intensive to be effective.

Truth:
Programs of varying lengths and formats can produce wide-ranging effects depending on how time gets used.

Early meta-analyses found that PL programs were more likely to see positive impacts on student achievement when they were integrated into the workday and engaged teachers for longer time periods.[11] This led scholars and policymakers to feature "job-embedded" and "time-intensive" on nearly every list of effective PL features published within the last 20 years. Local PL providers and district staff have taken up this charge, clearing time for teachers to engage in coaching, professional learning communities (PLCs), and other job-embedded learning opportunities.

There is an obvious element of truth in this myth: teachers must attend at least some PL in order to learn from it, and longer PL does provide opportunities for teachers to dig more deeply into content. However, the meta-analyses that

created the perception that PL must be job-embedded and time-intensive took place during the 2000s, when only a handful of rigorous evaluations of PL had been conducted. Newer meta-analyses encompassing dozens of more recent studies tell a somewhat different story.

None of the new research reviews find a positive relationship between the length of teachers' attendance and student outcomes, and one actually identified a potentially negative impact of longer programs.[12] Time, on its own, does not guarantee programs will move the needle on instructional practice or student outcomes.

> "One recent meta-analysis demonstrated that programs with summer workshops – time away from teachers' jobs – were more likely to boost student learning."

These reviews of PL also show that formats beyond "job-embedded" can work, too. One recent meta-analysis demonstrated that programs with summer workshops – time away from teachers' jobs – were more likely to boost student learning than programs without this feature. The same study found that, controlling for overall program length, PL that distributed teachers' learning time across several semesters did no better than programs that concentrated the same number of hours in a short time period.[13] The upshot here is simple: programs of varying lengths and varying formats can produce wide-ranging effects, depending on how time gets used.

Myth 4:
Improving teachers' content knowledge is key to improving their instructional practice.

Truth:
PL programs that aim directly at instructional practices are more likely to shift student learning than PL programs with a focus on content knowledge.

Lists of effective PL practices often suggest that programs must improve teacher content knowledge to see success. This assumption arises from a cascade of correlational evidence, particularly in mathematics, showing that teachers who lack key content knowledge tend to have relatively weak instructional practice.

However, in this case, correlation does not equal causation. In recent studies, researchers have evaluated several time-intensive PL programs that led to modest improvements in teachers' content knowledge. However, these improvements did not result in meaningful improvements in instructional quality or student outcomes.[14]

A broader meta-analysis of STEM instructional improvement programs found those that strengthened teachers' content knowledge were not any more likely to improve student outcomes than programs without this feature. In contrast,

the same study found programs that focused on shifting teachers' instructional practice did improve student outcomes more often than not.[15] Another review found that helping teachers learn why and when to use specific instructional strategies seemed to be associated with program success.[16]

> "**The most effective programs are those that create concrete changes in instructional strategy and practice. While shifts in content knowledge can sometimes create shifts in practice, the connection is by no means guaranteed.**"

Taking this evidence into account, it seems that the most effective programs are those that create concrete changes in instructional strategy and practice. While shifts in content knowledge can sometimes create shifts in practice, the connection is by no means guaranteed.

Myth 5:
Research–based PL programs are unlikely to work at scale or in new contexts.

Truth:
Programs can have positive effects across a wide range of schools, but strong implementation can help sustain effects at scale.

Many federal funds, including the Every Student Succeeds Act, incentivize the adoption of research-proven programs. Yet educational leaders are often concerned that these programs won't match their unique needs.

It's true that many programs in initial development phases fail when expanded beyond the initial test sites. Scaling up effective programs is a substantial problem in education more generally, and efforts to expand successful PL programs have sometimes struggled to sustain effects. However, not all programs fail as they expand. Recent, rigorous evaluations of several large-scale PL programs have found large average effects over a wide range of schools.[17]

> "**New programs that suffer from a lack of support from school leadership, or that fail to make time and space for teachers to sustain learning, appear more likely to fail.**"

A more accurate statement is that even the strongest of research-based programs will demonstrate variability in their effects across different sites. We know that at least some of this variability is driven by differences in implementation. For example, new programs that suffer from a lack of support from school leadership, or that fail to make time and space for teachers to sustain learning, appear more likely to fail.[18]

School and district context also matters. Case studies suggest that conflicts between PL and existing instructional guidance systems can also dampen implementation. Districts can improve the chance of success by investing school leadership in new programs and building alignment between the program and any related instructional guidance.

Myth 6:

Districts should implement research–based PL programs with no modifications.

Truth:

Practice fidelity first and adaptation with guardrails second.

The flip side of the previous myth is that we sometimes hear that new school-based programs should be implemented with high fidelity, exactly as intended by their designers. There is some truth in this wisdom: a recent review of federally-funded studies of classroom improvement programs found that poor-quality implementation was associated with weaker impacts on student outcomes.[19]

But two recent studies focused on PL around new curriculum suggest that "adaptation with guardrails" can actually help strengthen impacts on student outcomes beyond what is possible through program fidelity alone.

In both studies, teachers initially implemented the program as intended. However, once teachers gained a basic familiarity and comfort with the program's routines and structures, facilitators encouraged them to carefully adapt some program aspects while keeping its core elements stable. Teachers responded by tweaking instructional routines, adding or changing reward structures for students, and cross-pollinating the program with other long-standing practices (e.g., the reading comprehension strategies emphasized in district standards). In both studies, these adaptations led to gains in student outcomes over a comparison group of teachers who continued to implement the program with fidelity.[20]

While the adaptations created by teachers in these studies led to stronger program effects, the research emphasizes teachers' initial mastery of the program as a precondition to adaptation success. Often, programs come with interlocking parts – for instance, content mastered in one lesson is a precursor to mastering content in another, or a points-based student incentive structure keeps students focused on program activities. Understanding how program elements work together can help teachers adapt wisely.

Moving Forward

Making the right choices about teacher support, particularly at a time when so much is at stake, requires a shared understanding of what we currently know and what we still must learn. Moving forward, we must continue to ask more practical and practice-based research questions and make room for the kinds of rigorous research that will help us design more meaningful professional learning opportunities. Only through this sort of collaborative work can we strengthen our collective knowledge base and better serve our nation's students.

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