



The purpose of this brief is to demonstrate to school and district leaders how professional development can enhance instructional quality. The brief provides empirical evidence demonstrating the influence of content specific professional development on literacy instruction.

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KEY FINDINGS

Content-specific professional development influences teacher practices in literacy, specifically in comprehension and writing instruction.

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Content-specific professional development has a greater impact on literacy instruction than any other classroom or teacher characteristic.

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The substance of teachers' professional development is more important than certifications or degrees.

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School-level professional development offers an additional influence on literacy instruction.

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Professional Development as a Lever for Changing Teacher Practice

by Richard Correnti

In the past several decades, many policies have sought changes in teacher practice that would stimulate improvements in student learning. Researchers have largely observed disappointing and variable results from these policies and currently view the variability in implementation as a consequence of the lack of resources available for teacher learning.

Amid debates about the merits of conventional resources, some researchers have asserted the importance of considering not how many resources are available for teachers, but rather how resources are used to coordinate and manage instruction. A current focus of research has examined teachers' professional development (PD) because this is the most direct avenue for influencing teacher learning and, therefore, teacher practice.

This brief provides recommendations from an empirical investigation into how PD influences literacy instructionⁱ. In mathematics and science research a consensus is building to show that the substance of teachers' PD influences their instructionⁱⁱ. This study was motivated, in part, by a need to understand if the same principles hold in literacy. But, this research is also motivated by the fact that little is actually known about how PD influences teacher practice. This is both because of a number of methodological difficulties inherent in measuring PD effects and because few large-scale studies have been done with instruction as an outcome.

For example, prior research has been hampered by the fact that PD is often measured cross-sectionally – at a single point in time – as are the outcomes it is being related to. Thus, it is difficult to assess changes in teacher practice, rule out alternative explanations for a relationship between PD and practice and, thus, difficult to make causal inferences from the data. In addition, there are potential selection effects in how PD opportunities are distributed to teachers – with the potential that better teachers self-select into better PD opportunities. The findings presented here are from extensive instructional data and used methods to adjust for selection bias, resulting in causal attributions of the effects of PD on literacy instruction (see, methodology highlights page 2).



Content-Specific PD Enhances Literacy Instruction

After adjusting for 94 teacher and classroom characteristics, including teachers' prior instruction, teachers provided students more reading comprehension instruction when their PD opportunities had a greater emphasis on comprehension strategies. In a causal model, teachers receiving intense PD in comprehension offered students 10 percent more comprehension instruction than teachers not receiving intense PD. Intense PD was defined by teachers who reported receiving PD that emphasized specific content in literacy. For example, teachers were asked how much emphasis their informal and formal PD experiences focused on extending their knowledge of reading comprehension strategies (such as reciprocal teaching)

and how much emphasis focused on extending their knowledge of the writing process.

Teachers receiving intense PD in comprehension offered students 10 percent more comprehension instruction than teachers not receiving intense PD

On average, comprehension was taught about 90 days a year, so an additional 10 percent of instruction translates into 9 additional days of comprehension instruction over the course of the year. The findings also demonstrate how this difference accrues over time. Teachers did not simply teach comprehension more frequently across days in the year. Instead, when they taught

comprehension, teachers were more likely to: 1) have students discuss text, 2) examine the structure of the stories they read (e.g., introduction, problem, resolution), 3) provide teacher-directed explicit instruction on comprehension strategies, 4) have students analyze or synthesize information (within or across texts), 5) activate students' prior knowledge, and 6) have students answer literal comprehension questions. Not all of the comprehension measures indicated changes as a result of PD. Teachers did not alter text complexity nor did they revise many of the activities they asked students to do (e.g., provide brief or extended answers to comprehension questions, or integrate writing into comprehension instruction). Instead they seemed to change their own behavior by modifying their instruction.

Similarly, teachers also provided students more instruction in writing when the writing process was a focus of their PD. In a causal model, teachers receiving intense PD on the writing process offered 13 percent more writing instruction and had students write 12 percent more text than teachers not receiving intense PD.

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Methodology Highlights:

This study examined 75,689 lessons in 1,945 classrooms in 112 schools in the Study of Instructional Improvement.

- Instruction was measured through daily surveys of instructional practices.
- PD was measured on an annual survey – teachers' responses to the year prior to the year they logged on students was used to predict their instruction.

This study used propensity score stratification methods (see, Rosenbaum and Rubin, 1983)

- Teachers were stratified using 94 pre-treatment covariates, including prior instruction
- 20 groups of teachers (stratum) were created such that teachers within strata were equivalent on all 94 characteristics.
- Within each stratum, some teachers received intense PD, others did not.
- The causal difference was a weighted average of the difference in outcomes between treated and untreated teachers across all strata.

Sensitivity analyses tested whether an omitted variable (with a relationship to both PD and teacher practice as large as any of the 94 covariates) would change the causal inference.

Other "naïve" statistical models compared the relative influence of intense PD versus other teacher and classroom characteristics and tested for the influence of the school-level context.



In writing, the greater accumulation of instruction resulted from teachers teaching writing more often (about an extra 8 days a year) and from the fact that when they taught it they were more likely to cover more of the writing process. Additionally, teachers receiving intense PD also asked students to write more text. Thus, teachers not only enhanced their instruction but they asked students to write connected paragraphs versus single paragraphs and sentences.

Recommendations: Because these results demonstrate the effectiveness of content-aligned PD for improving early literacy instruction, administrators and policymakers should monitor and increase the number of content-specific PD sessions teachers attend. History suggests this will be easier said than done in most districts, where decisions about PD are often made on personal beliefs as opposed to research-based evidence for effectivenessⁱⁱⁱ.

Another suggestion is for district leaders to examine resource allocations for PD. Examinations into current spending patterns reveal that funding comes from many different sources and that those sources do not coordinate their efforts to provide coherent, content-related PD experiences for teachers^{iv}. Even where adequate dollars are spent annually, virtually no assurance exists that the majority of PD experiences cover core academic subjects, such as literacy, math, and science. Districts

would do well to increase the proportion of dollars they spend on PD in the core academic subjects and to monitor those PD opportunities to insure that the PD is content-specific in practice and aligned with district curricular goals.

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Additionally, state-level policymakers could also take action. For example, they could change how they allocate resources, by providing districts stability in spending over time and by providing incentives to districts to create coherent learning opportunities for teachers. They could also help districts identify optimal PD providers. Finally, state-level policymakers could require teachers to enroll in pre-selected PD opportunities as a part of their continuing education requirements.

In summary, at local, district and state levels policymakers should use content-specific PD as a lever for improving instructional practice. But, are there other potential mechanisms for improving teacher practice?

PD has greatest influence on instruction

The findings revealed that not only was intense PD a predictor of teacher prac-

tice, but that intense PD had a greater impact on literacy instruction than any other classroom or teacher characteristic. In fact, very few teacher or classroom characteristics predicted instruction. The study found no effects for such things as: class average, student socioeconomic status, teachers' beliefs about their self-efficacy, teachers' beliefs about the academic standards of their peers or even whether the teacher had a master's degree or permanent certification.

A few factors did predict teacher practice. Teachers' with more experience taught more strategies in comprehension and writing, and so did teachers with a greater number of courses in the content area English Language Arts. Conversely, teachers with more disruptive students covered fewer instructional strategies in comprehension and writing.

No effects on literacy instruction were found for such things as; class average, student socioeconomic status, teachers' beliefs about their self-efficacy or whether the teacher had a master's degree or permanent certification.

Taken on the whole these findings are rather optimistic. First, the social background of students does not seem to determine students' learning opportunities. While the research reported here did not closely examine instructional processes (e.g., discourse pat-



terns between students and teachers), it is encouraging that this study showed no differences by socio-economic status in the instructional content offered to students.

Second, and more importantly, they suggest that teacher practice is amenable to change. The findings demonstrate that the most consistent influences on literacy instruction were the number of content-related courses the teacher accrued, teacher experience in the classroom and content-specific PD. Therefore, what is important is that teachers obtain knowledge in the discipline they are teaching. However, the findings also suggest that instruction will not improve if the incentive structure continues only to reward generic certifications and degrees since these factors were not influential for teacher practice.

Recommendations: Educational administrators should focus on content-specific experiences for enhancing teacher instruction. Whether considering recent PD experiences or prior teacher training, administrators should remember that the substance of those experiences is the most powerful predictor of literacy practice.

In order to provide teachers with substantive PD opportunities, different actors at different levels of the system need to re-think current policies, systems and incentives. For example, teachers and principals can contribute to their own

development by demanding content-specific PD offerings that are aligned with their teaching responsibilities and by choosing those offerings when provided with options. District leaders should seek to establish systems for PD that provide ongoing, coherent and content-specific opportunities that are sequenced over time. Finally, incentive structures could be established to reward teachers for taking an active role in contributing to their ongoing learning by participating in content-specific English Language Arts courses and PD offerings.

A Schoolwide focus on PD Provides Additional Gains for Teachers' Instruction

The findings from this study revealed an additional influence of school-level PD on instruction even after accounting for the individual-level effect. Teachers not only benefited from their own individual experiences, but they also benefited when there was a school-wide focus on content-specific PD — that is, when other teachers in the school reported high levels of content-specific PD over time.

This suggests that the effects at the individual teacher level are an underestimate of the total potential effect of a coherent school-wide PD program. For example, in a related study, comprehensive school reform (CSR) programs with well-designed instructional components were shown to increase targeted areas of literacy instruction by

Summary Policy Recommendations:

School

- Teachers and principals call for, and utilize, professional development in core academic subjects
- Promote school-wide programs of PD with a content area focus

District

- Curriculum and PD specialists promote coherent learning opportunities over time in the core academic subjects
- Allocate significant resources for content-specific professional development and for incentives for teacher learning

State

- Align teacher requirements for continuing education with learning opportunities in core academic subjects
- Stabilize funding over extended time periods and collaborate with districts to provide coherent learning opportunities for teachers
- Encourage and monitor PD opportunities to insure they provide “substance” in the content areas



30 to 40 percent*.

This finding has important implications for how PD is studied since it demonstrates the importance of considering the context surrounding the PD because it may influence teachers above and beyond individual-level effects. But, PD experiences are often measured at given points in time and over short time intervals and, therefore, are considered in isolation of teachers' own (and others') prior PD experiences. Thus, the magnitude of PD effects might underestimate the effects of a coherent longitudinal school-wide program of PD.

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This suggests that a school-wide program intended to enhance instruction within a particular content area is an important context to consider. This is especially salient in light of recent policy considerations, where accountability pressure and school improvement efforts promote school-level attempts at improvement.

Conclusion

The findings presented here for literacy instruction corroborate prior research in mathematics and science. These

findings suggest that ambitious instructional goals in literacy require learning experiences for teachers that are content-specific. Moreover, the findings suggest that the influence of PD can be greatest when schools provide coherent, longitudinal programs of content specific PD.

Because of the methodological difficulties in studying PD effects on both instruction and student achievement, much work remains to be done to develop causal explanations of the influence of high-quality PD in schools. In the meantime, the current research consensus allows for several summary recommendations (see summary policy recommendations, page 4) for educators at all levels of the system.

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Learning Policy Center at the University of Pittsburgh

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