



*The purpose of this Learning Policy Center brief is to inform decisions about the design and implementation of PLCs and coaching initiatives by presenting research based findings about the potential supports and barriers that influence their efficacy.*

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## KEY FINDINGS

District policy can influence who teachers seek out to discuss issues related to their teaching, as well as the depth of their interactions.

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The efficacy of coaching initiatives depends in part on how coaches are selected and trained, and the role defined for coaches in schools.

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Competing reform initiatives lead to fewer opportunities for structured professional interactions around specific content areas.

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School leaders influence the degree to which interactions are consistent with reform aims and how teachers talk about curriculum and instruction.

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## Getting the Most out of Professional Learning Communities and Coaching: Promoting Interactions that Support Instructional Improvement

by Cynthia Coburn & Jennifer Russell

The creation of professional learning communities (PLCs) in schools and the designation of instructional coaching positions have become popular strategies to support teacher learning and instructional improvement. PLCs and coaching initiatives share a similar theory of action: that providing teachers with opportunities to interact with peers and/or expert coaches will enable them to learn and implement more effective teaching strategies.

However, the research presented in this brief suggests that simply getting teachers together to collaborate or hiring a curriculum coach does not, in itself, establish the reoccurring patterns of communication necessary for teacher learning and positive instructional change. Rather the design of coaching initiatives and structures for teacher collaboration influences the quality of professional conversations.

The purpose of this Learning Policy Center brief is to inform decisions about the design and implementation of PLCs and coaching initiatives by presenting research based findings about the potential supports and barriers that influence their efficacy. In so doing, the brief draws on findings from a study by Coburn and Russell<sup>i</sup>, which compared the implementation of standards-based mathematics curriculum in two urban districts – Greene and Region Z – and its impact on the structure of teachers’ social networks and the content of their professional interactions.<sup>ii</sup> Social networks, as used in this brief, simply refer to the collection of individuals with whom teachers discuss teaching and learning.

### Not all professional interactions promote instructional improvement

All teacher interactions are not the same; professional discussions vary greatly in their degree of depth. Prior research suggests that typical conversations in teachers’ professional communities are of low depth, characterized by story swapping, sharing materials, and providing discrete bits of information or advice.<sup>iii</sup> As such, not all interactions have the potential to foster teacher learning and instructional change.

Our study found that teachers’ interactions across the two districts ranged from low to high depth. Low depth interactions included talk related to how to use curriculum materials, how to organize classrooms for instruction, and general



discussions of how lessons went. In contrast, high depth interactions focused on the pedagogical principles underlying instructional approaches, the nature of students' mathematical thinking, and an understanding of mathematical concepts. In order for coaching and PLC initiatives to support instructional improvement, they should enable teachers to engage in conversations about how students learn content and what teachers can do to ensure all students learn.

### Districts can influence key dimensions of teachers' professional interactions

District policy can influence who teachers seek out to discuss issues related to their teaching, as well as the depth of their interactions. This point is illus-

trated by the experiences of Greene and Region Z. Both districts launched extensive systems to support curriculum reform that included coaches in every school, biweekly professional development at school sites, common prep periods for grade level planning, and multiple districtwide professional development opportunities.

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Creating new positions – such as mathematics coaches – and mandat-

ing structures such as professional development sessions and grade level meetings influenced who teachers interacted with about mathematics. In addition, the specific design of district initiatives led to significant differences in the quality of interactions.

The two districts influenced the depth of mathematics instructions by introducing specific routines of interaction during professional development sessions. By routines of interaction we mean routines intended to guide conversation between adults on matters of instruction. For example, in Greene's professional development sessions, facilitators would ask coaches to do a mathematics problem together or watch a video of a lesson.

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Then facilitators would ask, "Where's the mathematics here?" This routine prompted coaches to analyze tasks to uncover the underlying mathematics students would need to solve problems. Coaches learned routines in professional development sessions and then employed similar routines when working with teachers. Teachers then learned the routines and at times used them to guide interaction with colleagues.

### Methodology Highlights:

Within the comparative case study design, exploratory qualitative social network analysis was used to investigate the structure and content of interaction among teachers' social networks. Prior research typically assumes the structure of teachers' social networks and the type of interaction; this study directly examined the structure, depth, and content of teacher discussions. This involved systematically determining who interacts with whom, mapping the resulting patterns of interpersonal communication for all focal teachers, and analyzing the content of teachers' interactions about mathematics instruction.

Purposive sampling was used in each district to select four elementary schools to ensure variation on overall levels of interaction around mathematics and the instructional expertise of the teachers. Six focal teachers in each school in each district were chosen to represent the range of grade levels (n=48). This was supplemented with one to two interviews of mathematics coaches per year (n=24) and two interviews per year with school principals (n=8). One interview per year was held with six non-focal teachers in each school (n=48). Also, direct observations on three to five occasions where teachers interacted on matters of mathematics instruction were conducted in each school (n=30). Lastly, key district leadership were interviewed (n=17) and professional development for teachers and coaches (n=20) was observed and analyzed along with relevant district documents.



The two districts differed significantly in the nature of routines they employed, which influenced the depth of conversations in schools. In Greene, routines included activities such as analyzing the mathematical tasks in lessons and examining student problem solving strategies through student work samples and observations. In contrast, the most common routines observed in professional development for coaches in Region Z were explanations about how to use the curricula, doing math problems in order to learn how to teach lessons, and mapping activities where coaches were asked to draw connections between the curriculum, state standards, and assessments. The routines characteristic of professional conversations in Greene were on average of higher depth, and thus more closely tied to mathematics teaching and learning. By providing teachers with opportunities to gain a deeper understanding of curriculum, rather than simply how to use it, teachers have the learning opportunities that may be necessary to make positive changes in their instructional practices. Thus routines can be designed which foster higher depth discussion.

### **Addressing barriers to fostering high leverage professional interactions**

The case studies of Greene and Region Z point to a number of challenges that complicate the implementation of coaching initiatives and other structures aimed at promoting teacher col-

laboration. Attending to these potential challenges will help schools and districts foster professional interactions that support improvements in teaching and learning.

### ***The design of coaching initiatives should attend to hiring, training and defining roles***

Coaching initiatives aim to provide teachers with access to greater expertise on teaching and learning, with the hope that access to expertise will enable teachers to adopt more effective teaching practices. The efficacy of coaching initiatives depends in part on how coaches are selected and trained, and the role defined for coaches in schools.

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In our study, coaches were the primary source of expertise on mathematics instruction for teachers. But differences in the way coaches were hired and trained in the two districts meant that teachers had significantly different access to expertise. In Greene, coaches were hired based on defined criteria set by the district which specified a requisite amount of formal training and experience in mathematics education. In Region Z, coaches were selected without guidance from the district, so coaches were hired who did not have

expertise in mathematics instruction. As a result, the incorporation of coaches in teachers' social networks increased access to expertise in Greene, but not, for the most part, in Region Z.

In addition, the roles defined for coaches influenced their interaction with teachers. In Greene, the district mandated that all coaches be involved in weekly classroom coaching of teachers, meet with teachers in their grade level groups, and run bi-weekly after-school professional development on mathematics. Leaders in Region Z were not as clear in defining the role of the coach or articulating what classroom coaching entailed. Hence, the principals in Region Z used coaches in strikingly different ways – ranging from having them work primarily with students in small groups and coordinating test administration to working intensively with a few teachers.

Therefore, districts seeking to provide teachers with access to teaching expertise through coaching should pay attention to the specific skill set of potential hires.

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***District and school leaders, coaches, and teachers should also have a shared understanding of the role of the coach, including agreement that coaches support instructional improvement through direct interaction with teachers.***

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Moreover, district and school leaders, coaches, and teachers should also have a shared understanding of the role of the coach, including agreement that coaches support instructional improvement through direct interaction with teachers.

### ***Take caution in launching multiple reform initiatives simultaneously***

Another factor that complicated implementation in Region Z was the presence of a competing reform initiative. While Region Z was implementing a standards-based mathematics curriculum a district-wide literacy program was also underway. The result was competition for teachers' time; one that was frequently won by the literacy program. Although the district specified an equal allotment of professional development sessions for mathematics and literacy, schools used more time for literacy than math. The presence of competing initiatives led to fewer opportunities for structured professional interactions about mathematics. Districts attempting to implement multiple reform efforts simultaneously need to take additional steps to steer adequate allocation of professional development resources.

### ***School and district leaders should promote consistent messages about reform goals***

In order for coaching and PLC initiatives to bolster and sustain education change, the interactions and professional conversations amongst leaders and teachers must be aligned with dis-

trict reform goals. Our study found that school leaders influenced the degree to which interactions were consistent with district reform aims and how teachers talked about the curriculum. For example, one principal placed a strong emphasis on test preparation strategies that were not consistent with the aims of the mathematics curriculum. Most of teachers' talk that was inconsistent with the curriculum in this school was also about test preparation.

Better connections between district and school leaders may foster greater consistency because school leaders are more likely to understand and promote district messages. Inconsistent talk and misaligned messages occurred in both districts, but were somewhat more prevalent in Region Z. Greene held monthly professional development meetings for mathematics leadership teams that were attended by coaches and school level administrators. In Region Z, school principals had few connections to district mathematics leaders.

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***School and district leaders should work collaboratively to achieve shared understanding and promote consistent, coherent, and properly aligned messages.***

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These findings underscore the difficulty of maintaining a coherent understanding and message throughout the school system as to the goals, aims, and pedagogy of the curriculum reform. Incon-

### **Summary Policy Recommendations:**

- Set aside consistent time for professional development including professional conversations which provide opportunities for teachers to learn
- Consider hiring coaches as a way to provide teachers with access to information on effective teaching strategies and how students learn, but only when coach hiring and training policies are in place which ensure coaches have the requisite content and coaching expertise
- Engage teachers and coaches in routines that provide models for how to engage in professional conversations that are focused on effective teaching strategies and student learning
- Be cautious about launching multiple instructional improvement initiative simultaneously – with limited time for interaction and structured teacher learning, it's hard to sustain multiple priorities
- Include school and district leaders in content focused professional development sessions so that they reinforce consistent messages about instructional improvement objectives



gruent messages may influence how teachers implement the curriculum in their classrooms. Prior research suggests that teacher community can impede reform efforts if teachers' beliefs and values are not aligned with those of the reform.<sup>iv</sup> Given that school leaders mediate district reform goals, school and district leaders should work collaboratively to achieve understanding and promote consistent, coherent, and properly aligned messages.

## Conclusions

Simply creating the position of a coach or pursuing the development of professional learning communities does not lead directly to quality opportunities for collaborative interaction. In our comparative case study, both districts implemented similar initiatives, and professional interactions prior to implementation of PLCs and coaching were at similar levels of depth. Nevertheless, districts experienced quite different results. Greene School District's design for coaching and professional learning communities led to significantly different professional conversations. This suggests that district policy does play an important role in influencing teachers' professional interactions. How districts select coaches, specify coaching roles, design professional development, and implement concurrent reform initiatives influences who teachers seek out to discuss mathematics with, but more importantly, the nature and quality of those interactions.

## References:

- i Coburn, C. E. & Russell, J. L. (in press). District policy and teachers' social networks. *Educational Evaluation and Policy Analysis*.
- ii Greene and Region Z are pseudonyms.
- iii Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record*, 91(4), 509-536.; McLaughlin, M. W., & Talbert, J. E. (2001). *Professional communities and the work of high school teaching*. Chicago: University of Chicago Press.
- iv Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis*, 23(2), 145-170; Smylie, M. A., & Evans, A. E. (2006). Social capital and the problem of implementation. In M. I. Honig (Ed.), *Confronting complexity: Defining the field of education policy implementation* (pp. 270-299). Albany, NY: State University of New York Press.

## Learning Policy Center at the University of Pittsburgh

The mission of the Learning Policy Center is to foster high quality learning environments for both students and professionals in public schools. Toward that end, we aim to infuse into policy decisions high quality, timely research on effective teaching and learning and on the school, district, and policy conditions that support their improvement.

The Learning Policy Center utilizes the rich talent pool of the University of Pittsburgh School of Education, the Learning Research and Development Center, the Institute For Learning and other regional assets to connect high quality learning research with education policy decision-makers.

## Cynthia E. Coburn

Cynthia E. Coburn is an assistant professor of Policy, Organization, Measurement and Evaluation in the Graduate School of Education, University of California, Berkeley.

## Jennifer Russell

Jennifer Russell holds a joint appointment as assistant professor of Learning Sciences and Policy at the University of Pittsburgh and research scientist at the Learning Research and Development Center.