

Supported Collaborative Inquiry & Teacher Learning

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Introduction

"It's given us a vehicle for being professional and collaborative. Acting as colleagues in a professional manner and not just a bunch of teachers griping. And I can see how it's affecting my classroom" (Corinne, 7th grade science teacher, April, 2006).

The purpose of this research is to understand the dynamics of teachers' growth and change as they participate in supported collaborative inquiry in a professional learning community (PLC). There is an "optimistic premise" emerging from teachers' participation in PLCs; however, what teachers do during and as a result their participation is said to be "hidden inside a black box" (Little, 2003)

Supported teacher collaborative inquiry draws upon the work of Darling-Hammond & McLaughlin, 1995; DuFour, Eaker, & DuFour, 2005; McLaughlin & Talbert, 2006, and has the following specific criteria (Nelson & Slavit, in press):

1. Teachers actively seek a shared vision of high quality teaching and learning through facilitated dialogic interaction.
2. Teachers actively strive to emerge as an interdependent group with a shared understanding of group needs, norms, and goals.
3. Teachers work with teachers in the design of an inquiry focus.
4. Teachers are supported in the design and implementation of the inquiry by a facilitator with content and facilitation expertise.
5. The inquiry includes an action-oriented phase grounded in the
6. Teachers are actively supported in obtaining intellectual and material resource support of building administrators, and fitting their inquiry within the context of the larger district, state, and national goals.

Teachers' collaborative inquiry took place in the context of a three-year professional development project that provided support for teachers' work in professional learning communities (PLCs). A PLC approach facilitates teacher learning through a structure that fosters collaboration, dialogue, and inquiry over an extended time period (Eaker, DuFour, & DuFour, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001). This dialogue provides a base for examining and improving teaching in order to increase student learning.

Forty-five lead teachers attended week-long summer academies prior to the beginning of the first and second years of the project. They learned leadership skills associated with facilitating their colleagues' collaboration (see above). In the first year, lead teachers formed 10 cross-school PLCs. In the second year, lead teachers formed PLCs in their schools, engaging over 100 other teachers in 35 PLCs.

Research Questions

To what extent were teachers in PLCs able to move toward an inquiry stance involving knowledge generation?

How did external forces influence the nature of teachers' collaborative work?

Research Methods

Case study design (Merriam, 1998)

9 PLCs selected for case study; 3 cases fully developed

Purposeful selection to represent science, mathematics, high school and middle school.

Qualitative data sources:

audio, video, and archival records of PLC meetings; semi-structured interviews with 10 lead teachers; focus group interviews with teachers from (5 non-case study) PLCs; informal interviews and conversations with teachers; surveys of all teachers related to PLC experiences; video records and artifacts from summer academies and Showcase event

Unit of analysis: The "activity system" – teachers' collective actions, learning, responses to "forces," the cultural context (Hargreaves & Fullan, 2000; Spillane, Reiser, & Reimer, 2002)

Analysis within cases; ongoing cross case analysis in process

Assumptions:

Teacher leadership: key element; varied across individuals

School culture with respect to collaborative work and teacher dialogue: varied across schools; element of risk

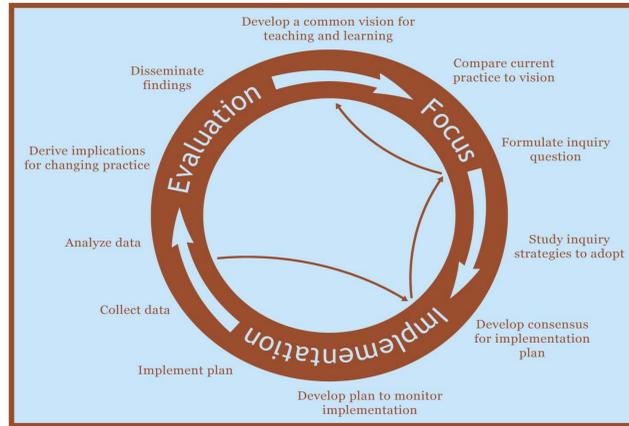


Figure 1: The Inquiry Cycle

Theoretical Framework

- ❖ Powerful PD disrupts the isolation of teaching and is:
 - ❖ **situated** in teachers' work (especially with respect to the discipline & the students);
 - ❖ promotes **critical, dialogic inquiry and reflection** with colleagues;
 - ❖ meaningfully **connected** to other school and district initiatives (Gamoran et al., 2003; Little et al., 2003; Putnam & Borko, 2000)
- ❖ Critical and reflective collaboration requires an **inquiry stance** (Sirotnik, 1988) involving knowledge negotiation (Nelson, 2005)
 - ❖ An inquiry stance involves teaching as praxis; teachers generate knowledge of teaching (Cochran-Smith & Lytle, 1999)
 - ❖ Dialogic interactions show "a willingness to wonder, to ask questions, and to seek to understand by collaborating with others in the attempt to make answers to them" (Wells, 1999, p. 121).
 - ❖ Non-inquiry-based dialogic interactions include knowledge consultation or knowledge rejection (Nelson, 2005)
- ❖ PD that makes a difference in changing teachers' practices involves "**reculturing**" (Fullan, 2000):
 - ❖ examining/changing the "school's persona" and the nature of the existing school community (McLaughlin & Talbert, 2006)
 - ❖ using student data to focus attention on links/gaps between teaching and learning
 - ❖ examining educators' images of and relationships amongst teacher agency and roles, knowledge for teaching, practice, and learning (Cochran-Smith & Lytle, 1999)

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Findings

Developing an Inquiry Stance: Two Examples

PLCs did not automatically assume a collective stance toward dialogic inquiry. By the end of the school year, some PLCs exhibited an emerging inquiry stance, while many functioned as a more traditional teacher community—sharing information, more or less valuing the conversation, and engaging in common patterns of "teacher talk" focused on curricular, administrative, and student-related issues. Relationships between a group's dialogic stance and their collaborative activities were evident across PLCs. Also evident in PLC conversation was the influence of "external forces," especially state standards and testing, the nature of the discipline (science, mathematics), and the culture of teacher community within the school.

Silver Valley: Eight science and mathematics teachers, from the (only) middle and high schools/ Five of these teachers had been in a PLC the previous year.

Inquiry Question: How can we help our students improve their scientific and mathematical communication skills?

Collaborative Activities Valued by Teachers; Dialogue Constrained by Traditional Community:

- Inquiry focus emerged from research they read together in the first year and carried over into the second year; teachers value their time together

"I have so much better understanding of what's done in the middle school and even the primary school... we're finding that when we put our heads together, it comes out pretty good most of the time." (Focus group interview, May, 2006)

- Teachers share stories of classroom practices; they do not implement a common teaching action to collectively study

"Around our third meeting we all brought what we've done in our rooms, we all discussed how we brought forth our vocabulary, how we studied it and so forth. In my particular math classroom I spend 15 minutes per day just on vocabulary... I think every one of us had a different strategy that we used... We didn't change strategies throughout the year, we've kept our same strategies." (Rick, May, 2006)

- Teachers give a survey to all district teachers to find out how others teach vocabulary; they give a pre- and post-assessment to students but do not analyze the results collectively; they do not look at student work together, and many use quiz and test scores to indicate students' understanding

"We then just kind of judge it by, well vocabulary or terminology quizzes... My personal feeling is that that's not a good way to record it. I do probably the informal, just seeing if they're using it." (Rick, April, 2006)

- Teachers discuss ideas about high quality learning & teaching, occasionally question others' ideas; they do not pursue meaning as related to their inquiry focus.

Maggie: See, I think [engaged] is better than hands-on because sometimes hands-on, they need to be engaged no matter what you do.

Sam: Hands-on more incorporates the different learning styles, students learn more by doing than by reading.

Maggie: But you've got to reflect. Just because something is hands-on doesn't mean it's minds-on.

Sam: Engaged could mean a text-book assignment but hands-on means they are actually doing something, touching something, a dissection. And those are two different things, both of them are very valuable but they are two different things.

Maggie: Right. But at least in the lower grades a lot of times hands-on was automatically equated with learning and sometimes it was just a fun activity and the kids didn't get the point of the activity. It's got to be hands-on, minds-on.

Sam: That's a good statement, I've never heard that one. (September, 2005)

- Some see students' achievements as beyond their control: "Not everyone is going to pass" (Sam, April, 2006); others believe they can help more students' attain learning goals.

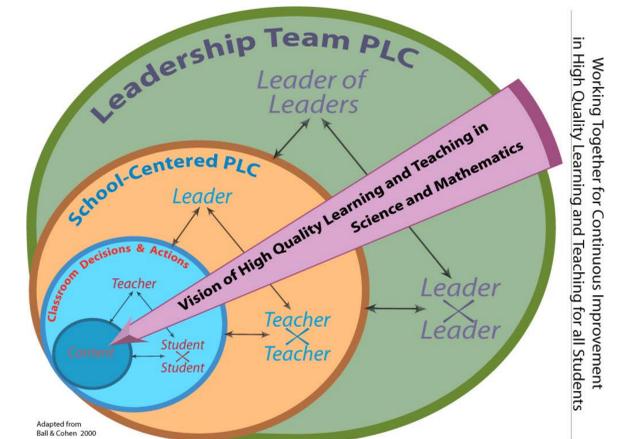
Summary: Teachers valued their time together and shared their classroom practices. They did not implement a common teaching practice, nor did they develop a shared understanding of the meaning of their inquiry focus. The data they collected did not help them collectively understand students' needs, misconceptions, or how to address these; change centered on communication amongst teachers across grade levels:

"I see it as a team effort in what I do, Serena's gonna build on what I do and Maggie's built on what Serena does." (Amanda, May, 2006)

Discussion & Implications "We had never had that before, where we actually talked about how we were going to teach and refined strategies and looked at each others' classrooms, student engagement... So for us this was incredibly powerful and scary to open it up and look at each others' stuff." (High school math teacher, May 06)

Based upon our findings, we argue teachers need support from a "critical other" in order to develop a professional community based on dialogic inquiry. While it is important to celebrate teachers' efforts to improve their teaching and students' learning, the risks and challenges they faced constrained many PLCs' efforts to undertake collaborative inquiry. While the teachers valued opportunities to talk with each other about classroom practices and student learning, asking critical questions that challenged the status quo was uncommon across the PLCs in the project. Some of this can be explained by a culture of privatization of practice, and a wide-spread perception that teachers are "knowledge users, not knowledge generators" (Cochran-Smith & Lytle, 1999). Grays Bay (above) and a handful of other PLCs, however, provided images of the optimistic premise residing in collaborative inquiry in professional learning communities.

Given the time, money, and mental and emotional energy invested in developing PLCs, it is important to understand what teachers learn and where they need support. We propose that by identifying—with full teacher participation—what constrains teachers' critical and reflective dialogic engagement, supporting moves and structures by critical others and the teachers themselves can be implemented. Based on more critical levels of dialogue in PLCs who were able to implement collective teaching actions and examine the subsequent impact on student work, we continue to believe in this professional development model. However, we are concerned that when PLCs make little progress, teacher frustration will cause them to abandon collaborative inquiry as another failed professional development strategy. Thus, we propose it is essential to identify where teachers need support and how this can be provided.



Grays Bay: Six 7th & 8th grade science teachers from two schools

Inquiry Question: How can we increase student use of evidence and inferential logic in constructing scientific explanations?

Collaborative Activities Shaped by an Inquiry Stance:

- Inquiry question based on co-examination of their students' state test scores
- All teachers implement scientific experiment scenarios to diagnose students' conclusion writing abilities; teachers question the quality and worth of these scenarios as they co-construct their collective image of a good scientific conclusion
- Share & score students' work together throughout the year; identify student needs and misconceptions; explore how to help all students achieve

Leon: You know really what it takes to pass these things is not—they can screw up, they can have misconceptions in there that—our standard is a lot higher but for this, you know, we just want them to pass the bloody WASL. Well, I shouldn't say that. We don't want them to just pass it, we want them to pass it but we also want them to be...

Katherine: Better.

Leon: Better than that. But for some of these kids we want them to pass. (November, 2005)

- Critically think about what "achievement" means in light of their understanding of science and of the state test; inform their understanding using external resources (state website, educational research) and from their own understanding of science

Leon: But then are we doing that teaching to the test rather than teaching them the science that they need to know?

Andrea: True.

Leon: I mean, I think that's a dilemma that we have.

Brooke: And that's why we do the inferences, so they learn how to interpret it and make a good explanation out of it.

Corinne: Well, I don't know, to me it just feels like if we continue teaching to this, which we kind of need to, but it really shurries and really waters down what we'd really like them to do. I mean the question's not well written, there's no>

Katherine: Or clear what they want.

Corinne: <explaining. You could do this and have no science content, how's the science

Andrea: They're basically saying, "Let's erase the chance for critical thinking and recopy the whole data table and that way they'll get a point." (November, 2005)

Summary: Through their collective examination of state test standards, their own beliefs about important scientific understandings, and how to help all students, the teachers adopted new teaching and assessment practices. They implemented a common teaching action, collected and shared student work, identified where students struggled, re-taught, and maintained an ongoing conversation about what learning means and what achievement implies for different students.

"I think we spent a lot of time reflecting and not just working on the practical aspects of, okay what are we going to do next? We spent a lot of time, okay what are the kids doing? What are we doing? And just a lot of time talking about teaching." (Corinne, life science teacher, Feb. 2006)