SITES AND SOURCES OF TEACHERS’ LEARNING:
Complicating questions of what teachers need to know and how they can learn it

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DRAFT FOR COMMENT

The policy community seldom makes problematic the question of what teachers need to know in order to improve their practice. Reformers and publics impatient with disappointing student outcomes cast requirements for teachers’ learning in relatively simple terms--more or different content knowledge. For instance, we hear: Teachers need technical skills to work effectively with their students in the information age. Teachers need to be up-to-date in their subject area. Teachers at all levels and across disciplines need to be able to teach reading. In policy circles, “knowing more” often is made synonymous with “teaching better.” (Cochran-Smith & Lytle, 1999).

Certainly, knowledge of new practices is essential for teachers to improve instruction for today’s classrooms and prepare students for a productive role in the 21st century workforce. Yet more or better content knowledge by itself cannot necessarily accomplish much. For one, simply having more and better knowledge resources available does not mean that teachers will or can use them effectively in their classrooms. But equally as important, teachers require more than content knowledge to construct the sorts of educational environments reformers hope for and contemporary students need. For example, teachers need to know how to engage students in content knowledge, how to allocate time and attention, how to articulate standards appropriate for practice. Teachers need to know where to place instructional priority, how students are responding to their classroom choices, how to make adjustments when student achievement disappoints. Treating “knowledge” as a generic concept fails to provide useful guidance to either policymakers or practitioners.

Conceptions of teachers’ learning that inform policy and practice are similarly underdeveloped (Bransford, Brown & Cocking, 1999). Research on teachers’ learning generally is decontextualized and silent on the question of environments that stimulate or frustrate it. Relatively little research looks at how sites and sources of teachers’ learning affect teachers’ ability and motivation to learn and use new knowledge. Likewise, research on teachers’ learning typically is more concerned about the content of teachers’ learning than with the processes that stimulate, support and sustain it.

This paper draws on one initiative’s experience with evidence-based reform to describe how multiple forms of knowledge intersect with each other practically and theoretically. It presents a picture of how teachers are organized within a community of learners and how that community relates to its external environment.
I start from the position that reform initiatives aimed at improving teaching and learning involve distinctly different forms of knowledge, and that these forms of knowledge are generated at different sites and play strategically different roles in teachers’ learning and change. I then turn to the character of school communities of practice as both medium and context for teachers’ knowledge use, generation, learning and change. This descriptive analysis highlights ways in which policy can affect teachers’ learning and support the knowledge they find useful as they seek to make change at their school and in their classrooms.

What kinds of knowledge do teachers need to improve their practice?

Marilyn Cochran-Smith and Susan Lytle (1999) distinguish among three substantively and strategically different conceptions of the knowledge associated with teachers’ learning and change: knowledge for practice, knowledge of practice, and knowledge in practice.

[Figure 1 about here: Forms of Knowledge]

Cochran-Smith and Lytle define knowledge for practice as the formal knowledge and theory generated by researchers and university-based scholars. Some of this external knowledge comprises new programs or strategies—for example Success for All, or Reading Recovery programs are examples of such university-produced knowledge for practice. Other externally-developed knowledge for practice involves new theories of learning or instruction, such as reciprocal teaching, cooperative learning, or peer instruction. Knowledge for practice also includes assessments, strategies for research and evaluation, or other inquiry tools such as running records to score students’ reading progress.

Knowledge of practice conveys yet another form of knowledge and image of teachers’ learning. This second form of knowledge comprises neither formal nor practical knowledge. Knowledge of practice is generated when teachers treat their own classrooms and schools as sites of inquiry and examine them in terms of such broader social and political issues as equity, patterns of student achievement, or school supports for students’ futures. Knowledge of practice may be produced by teachers themselves, or may involve data and analysis provided by outside evaluators or researchers—working with or without teachers’ involvement.

Knowledge in practice—a third kind of knowledge—is what teachers come to understand as they reflect on their practice, and is situated in their own classrooms. It is practical knowledge. Action research and other forms of classroom-based inquiry support teachers’ learning of this sort. Knowledge in practice is individual knowledge, stimulated by teachers’ own questions about their own classrooms. (Knowledge in practice, as used in this paper, is the product of deliberate inquiry rather than the tacit knowledge born of experience.)

Calls for reform in teaching and learning implicate all three forms of knowledge.
Without knowledge for practice, teachers lack the new ideas, skills and perspectives they need to evaluate, enrich or change their practices. Yet, without knowledge of practice, teachers are constrained in their ability to exploit external knowledge, situate it in their particular school workplace, or even understand the need for new ways of doing things. Teachers often do not know what they need to know to address questions of whole school change and to move a faculty forward in a consistent manner. Knowledge of practice enables a faculty to see problem areas in their practice, and to identify opportunities for inquiry and innovation. Knowledge of practice points a faculty to needed external resources and areas for internal improvement.

However, absent teachers’ knowledge in practice, new ideas may have only uneven or marginal effects on individual classrooms, since they may not reflect the needs and issues specific to any one classroom setting, or since any individual teacher may or may not be interested in how his classroom is located in school-level data. Knowledge in practice informs individual teacher action and reflection, and guides teachers in tailoring resources to best support their everyday work.

**Engaging multiple forms of knowledge**

Most strategies or policies concerned with enhancing teachers’ knowledge and learning are single-focus and disjoint. R & D efforts aim to provide teachers with the latest in best practices but pay little attention to teachers’ motivation or capacity to use that knowledge or sustain changes associated with it. Action researchers focus on teacher-produced knowledge about their classrooms. Yet these individual efforts are seldom seen in terms of the broader school context, or as parts of a whole picture of practice at a site. Reform strategies such as site-based management or school improvement programs center attention on school level knowledge for action, but focus little if at all to the content of those changes and the knowledge resources necessary to support them.

What would a strategy look like that attended simultaneously to all three knowledge domains as sites and sources of teachers’ learning? The Bay Area School Reform Collaborative (BASRC) provides opportunity to see how different forms of knowledge can or do work together to support teachers’ learning and change. BASRC, a 5-year reform effort involving schools throughout the 118 district Bay Area region, seeks to “reculture” schools in ways that support whole school reform.

BASRC strategies aim to change the way schools do business. Merrill Vargo, BASRC’s executive director, likes to ask people to complete the sentence: “The problem with schools today is…….” BASRC’s design for reform finishes the sentence “their culture” and posits a missing element in schools’ cultures as evidence-based decision making centered on a focused reform effort. BASRC’s overall strategy uses a cycle of inquiry to inform school reform efforts, and marshals diverse forms of knowledge to support teachers’ learning and change.

1 The Center for Research on the Context of Teaching at Stanford University’s School of Education has evaluated BASRC since 1996.
The initiative exposes teachers to diverse forms of knowledge for practice. Much of it is content knowledge—resources and technical assistance in such domains as literacy, mathematics, technology and writing. These knowledge resources generally are carried to schools and teachers through so-called Support Providers, organizations contracted by Leadership Schools using their BASRC funds.

The initiative also attends to the learning skills teachers will need in order to make effective use of that content knowledge. In an effort to foster teachers’ capacity and comfort in generating knowledge of practice, teachers receive training in asking probing questions, in developing an accountability framework to guide their school’s cycle of inquiry, and in constructing standards against which to measure their school’s progress in their focused reform effort. They practice these skills in many BASRC events. For example, regional meetings of hundreds of Bay Area teachers, administrators, parents, support providers and funders were convened to score schools’ portfolio applications for BASRC Leadership School status. Subsequently, regional preparation and reviews Leadership Schools’ Reports of Progress immersed teachers in use of rubrics to evaluate process on five dimensions of whole school change.

A number of teachers told us that evaluating the portfolios with teachers from around the Bay Area “was the best professional development I have ever had.” One said, for instance, “Just reading about other schools and using that rubric forced us to use it well. It taught me about standards and accountability, skill I could take back to my school.” Critical friends visits—a BASRC strategy that brings two or three schools together to consider each others’ practice—involve teachers in both giving and receiving critique of practice and school culture. As one teacher put it, “[our Critical Friends] enabled us to look at evidence from a different perspective; we learned about gaps and about what we didn’t know.” Affinity groups engaged teachers from across the region in research on topics of their choosing. Through summer institutes for faculty teams from Leadership Schools, BASRC gave teachers tools in other areas important to their success in generating knowledge of practice in their schools—how to run a meeting, how to facilitate a discussion, how to deal with the “politics of data.”

Teachers’ skill in and experience with generating knowledge of and in practice was stimulated initially by their schools’ preparation of the Portfolio Application for Leadership School status. BASRC required schools to provide evidence of their status along five dimensions of whole school change and in support of the “focused effort” they selected to frame their reform efforts. Subsequently, BASRC’s requirement that each Leadership School develop and carry out a “Cycle of Inquiry” to inform their school’s reform efforts and to provide data for what BASRC calls an “accountability event,” where the school reports its progress annually to its community—faculty and parents.

BASRC’s strategy places as much emphasis on developing teachers’ learning and inquiry skills as it does on connecting them with relevant content knowledge. These tools and learning skills, BASRC hoped, would equip teachers to begin to ask questions about their own practices, gather evidence to address those questions, and situate reform
efforts in their analyses. In other words, BASRC provided teachers with exposure to and practice with the skills and experience they would need to generate knowledge of and in practice at their own school site.

How did teachers use new knowledge to support learning and change?

What happened as a result of BASRC’s efforts to reculture schools around habits of inquiry and whole school change? Across BASRC Leadership Schools we observe different patterns and processes of teachers’ knowledge use, and so of their learning, change efforts and outcomes associated with them.

Not all schools or teachers were able to receive or use knowledge resources in the same way; schools and teachers also differed in the ways in which they approached engaging or generating forms of knowledge in their reform efforts. Some teachers or schools were relatively sophisticated in their thinking about inquiry-based reforms; some teachers wondered out loud “What’s a data?” Few schools had experience with the school-based cycle of inquiry and accountability BASRC required—they were experienced in accounting for compliance’s sake, but not for their own community of practice.

Over the course of the Initiative’s four years, we have begun to see in Leadership Schools different overall patterns of teachers’ knowledge use as well as varied patterns of relations among forms of knowledge. Associated with these different patterns of knowledge generation and use, we find different consequences in terms of changed practices at school and classroom levels. Four general patterns emerged across BASRC Leadership Schools: First Steps, Beginning Inquiry, Getting Comfortable with Inquiry, A Cycle of Inquiry. I sketch them below and highlight the processes of knowledge use and learning we observed in Leadership Schools.

First Steps in using knowledge to support learning and change. One pattern could be called “First Steps.” For some Leadership Schools, BASRC involvement comprised the faculty’s first efforts to think about whole school change—either in substantive or strategic terms. First steps were apparent especially in secondary schools where schools rarely thought in whole school terms, but rather in terms of departments, student academic placements or grade levels. Common to secondary schools are so-called Christmas Tree reform efforts, which collect multiple but usually unrelated reform efforts.

The evidence and inquiry BASRC requires of its Leadership Schools was both foreign and threatening to many teachers. “Why are we doing this data collection stuff?” one teacher asked as she began her involvement with BASRC and was introduced to expectations for assessment and analysis. “We’re not methodologists,” said another. This teacher, like many if not most of her colleagues, knew nothing about how to develop standards for assessment, how to go about systematic inquiry into the consequences of
practice, or even now to construct the indicators that would be most meaningful to practice and action.

In schools taking their first steps toward whole school change based in a cycle of inquiry, teachers engaged support providers to provide assistance with their focused effort and made tentative, usually difficult and painful, efforts to think about what evidence and inquiry at the school level would mean or require. Teachers in these schools attended BASRC workshops on accountability and standards, but often found them inadequate in the light of their inexperience and anxiety about inquiry at the school level. These faculties often turned to their support providers for help with figuring out what measures would be meaningful in their schools, and strategies for collecting evidence about their work.

A major element frustrating the inquiry process in “first step” schools was a contrary normative climate of the school which made teachers’ work and student outcomes largely a private matter, and cast accountability as something done to, not for, the school. As the solid arrow in Figure 2 suggests, the learning most evident as schools began their journey as Leadership Schools was about new forms of practice. For many teachers, it was the first time in many years they had taken a hard look at what they were doing and thought about alternatives. For example a veteran teacher, working in a tough elementary school setting told us that BASRC

> opened my mind to certain strategies—and I have been teaching for more than a quarter century…but I didn’t realize there were other outlets—that I could use much better strategies. So I became a strategy-seeker… I was open to the fact that it’s not my way or the highway any more. I am opening up new approaches to my students…

Another teacher commented on the expanded view of her work and career promoted by BASRC’s various assemblies, institutes and other learning opportunities: “Being a part of BASRC has forced me to see some areas of professional growth that I wasn’t aware of before.” Another said: “BASRC has provided the intellectual challenge that I need in my work. A couple of years ago, I was really thinking [of leaving teaching] and BASRC was a good vehicle for me to get recommitted…so now it’s become challenging and intense.”

As these comments suggest, in schools just getting started with the challenges of using and generating knowledge, much of the “learning” we heard about was at individual rather than at school levels. Notice, too, that sources of knowledge for teachers in “first steps” schools were external, located in BASRC workshops or institutes, or brought into the school by the Support Providers hired with BASRC funds.

**Beginning school-level inquiry and change.** For many if not most of the BASRC Leadership Schools, their BASRC involvement was their first venture into looking at their school level practice. A second pattern we observed in Leadership Schools could be called “Beginning school-level inquiry and change.”
These schools had gotten started with their cycle of inquiry, and were struggling with questions about appropriate indicators for their focused effort, sources of data, and strategies for data collection. We see norms about evidence and uses of data changing from the culture of privativism seen in First Steps schools, to openness on faculty’s part to consider new ways of looking at their practice at the school level. Teachers in schools just beginning remark on what they have learned about the power of data to illuminate their own practice and student accomplishments school wide.

*We are starting to ask what are our data and inquiry strategies really telling us about our children? What do we want to know about our children? We have finally been able to ask ourselves: What do we really want them to know about and be able to do when they go out the door at the end of the year?*

Teachers in schools just beginning substantive engagement with a cycle of inquiry were having some of their first conversations about data, using new language, and working to generate evidence of practice as a faculty.

In many of the Leadership Schools at this point, teachers tell us that this was the first time that “every single teacher” had some form of assessment data for his or her class, and that for the first time, baseline data were collected across the school. Teachers also point to the changed lens they have now: “I never could see what a good school this is because I was so into my own classroom. I never had the broad picture. And until I saw that, when I could really sit down and see the whole school, that’s when the light went on. You know, we have some holes, we have some gaps, but boy, we’re okay!”

In schools described by “Beginning school-level inquiry” we saw how BASRC affiliation helped faculty deal with the politics of data.

*The data part of this has been hard for our school… a real challenge… we have some teachers who will pass any child who breathes. We have to be very creative in how we look at data…BASRC is a real help [as a shield]. BASRC says “data, data, data.”*

BASRC’s requirements about evidence and accountability allowed teachers eager to generate knowledge of practice make objective fact of what before had been seen as personal and subjective evaluation, where it was seen at all—most especially problematic evidence about particular classrooms or student groups. Teachers commented on how BASRC’s status as “outsider” and BASRC requirements for Leadership Schools enabled their schools to wade into the difficult waters of equity, outcomes and ties to practice.

Where schools began to see the value in site-level data, most remarkable to us was the shift in teachers’ discourse. The language of inquiry and data thread through faculty conversations. Teachers use evidence-based standards comfortably, and we hear new standards brought to evaluation and planning sessions. For example, this snippet of
conversation among members of the leadership team at a BASRC school reflects serious effort to take a hard look at data and learn from it:

Do all students meet or exceed the standards? What plan should we make to figure out who isn’t or is and why? We need to understand how to say a particular student meets or does not meet the standard. We should be able to explain why one child got a particular stamp on their head and another did not. If standards aren’t understood by teachers, then it’s a problem for our school.

We would not have heard this conversation among this faculty the year before, when they were grappling with how to address new expectations for accountability and decision-making associated with their Leadership School status. We hear this discourse as evidence of the emergence of a “community of explanation,” where teachers share language and understandings about the meanings of evidence and social facts.  

In some “beginning inquiry” schools, these conversations have started to make their way into change in practice at school or classroom levels, but as the dotted arrow in Figure 3 suggests, these effects were the exception. The problem most pressing in terms of knowledge generation and use in “beginning inquiry” schools is the character of the community of practice in the school. Many reform-minded faculties in these schools wrestled with rifts in their community; not all teachers bought into the “whole school” character of the reform. Moreover, in some schools—most especially high schools—reform leaders acknowledge that not all of their colleagues really believed that “all students could perform at challenging standards,” a central tenet of BASRC’s whole school reform vision.

In these schools, the community of explanation was emergent only, since teachers viewed the same disappointing data about student performance in different ways—some see it as warrant to reexamine practice and others view it as evidence about students’ abilities and motivation. Yet, in schools such as these, the sites and sources of teachers’ knowledge and learning are moving, if only in tentative ways, inside the school. Outside knowledge resources remain important to teachers’ thoughts about how to change, but energy in these communities focused more at this stage on establishing priorities for data collection and reform.

**Getting comfortable and capable with data.** A third pattern of relations among knowledge, learning and change could be called “Getting comfortable and capable with data.” Some Leadership Schools entered the Initiative already comfortable with inquiry and experienced with school-level reform. 

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2 Donald Freeman (1999) elaborates the notion of “community of explanation” and ways in which it is congruent with but different from a community of practice.

3 Many of these schools had received funds under an earlier California reform effort that was a significant BASRC ancestor in its focus on inquiry and whole school change: Senate Bill 1274.
But for most of the Leadership Schools where we found faculty comfortable with using evidence from their own inquiry to rethink their practices, we saw significant learning on the part of individual teachers and the faculty as a whole. We also found faculty struggling with their inquiry processes, but around different issues than were schools less experienced with inquiry. In some schools, the learning most important was about inquiry itself. For example, at the end of their first year of inquiry a high school faculty realized that they had chosen the wrong measures to assess their focused effort. In their second year, they returned to questions of indicators and evidence, but with concrete experience about internal validity to guide their decisions.

In this and other schools, we saw that the cycle of inquiry often was not sequential as a “cycle” image might imply. Faculty had to revisit first questions before proceeding to data collection and analysis. Faculty gained confidence and competence as data collectors and analysts. One teacher said, for instance: “It’s hard to know what is good evidence. But the more you do it, the more you are able to identify what’s good evidence.”

An elementary school teacher’s remark speaks volumes about the new knowledge and skill teachers have acquired through BASRC, in this instance the reading assessment tool of running records.

*It will be interesting to compare running records across teachers to see whether the evaluations are reliable— we all need to be speaking the same language and looking at kids work in the same way... next year we want to get people to the table understanding data... it will be a “so what” year. We have been working on collecting data to take action.*

In many schools, we see that the results of their inquiry process have led to new knowledge and understandings about practice in their school and classrooms. For example, an elementary school faculty looking at student work samples based on BASRC rubrics saw both examples of “high levels” of instruction in some classrooms, but also identified issues of coordination within and across grade levels. Based on this knowledge the faculty took steps to “evaluate where our kids are and what we are going to do to move them forward.”

Teachers’ new knowledge of their practice motivated more inquiry and commitment in some instances. Faculty in a number of Leadership Schools told us that “there is a lot of buy-in [to reform] from doing these assessments.” Teachers formerly resistant to collecting baseline data, or engaging in the assessment effort at all, are energized by seeing growth in their students as well as by identification of concrete problem areas for the school to grapple with. What had been generic “problems” became more concrete—they took on names and faces. They also became more amenable to action as teachers began to agree of the nature of the issues facing the school and a range of possible responses. Teachers in schools comfortable with new learning skills and norms of discourse readily admit that such conversations did not and could not have
taken place prior to their involvement with BASRC—nor could have expressions of collective responsibility for all students in the school.

This teacher’s comment makes apparent, for instance, how teachers’ problem-solving skills developed through the BASRC rubrics can affect faculty discourse and attention:

We gave a writing sample to all students last fall. All staff learned how to score it. From that experience, all teachers, even art teachers, realized how important writing is. It was interesting to hear history teachers debate with the art teacher about whether [student work] was a 3 or a 4 [on a rubric of 1 to 4, with 4 being high]

An elementary school made substantial progress in their students’ achievement once they disaggregated scores by ethnicity and reevaluated the literacy programs they were using. In two years, the school’s Limited English Proficient students moved from 44% scoring at grade levels on a reading comprehension test to 73% achieving at or above grade level. In this and in other Leadership Schools, we find positive signs that changes in practices at school and classroom levels are reflected in student achievement. Eleven of the first cohort of 14 Leadership Schools report student achievement gains in their annual Review of Progress. 4

Sites and sources of teachers’ learning found in these schools “Getting Comfortable” are both internal and external. Faculties have begun to internalize norms of inquiry and habits of evidence. Teachers ask for data to support decisions and inform discussions about practice. By their language and action, faculty in schools described by these relationships between knowledge, learning and change appear to have become communities of explanation. (Freeman 1999)

**Cycle of inquiry, learning and change.** In a few of the Leadership Schools we see a fourth pattern of relations between knowledge generation, use and change. In these schools, the Cycle of Inquiry has begun to mature into an accepted, iterative process of data collection, analysis, reflection, and change. These schools function as “learning organizations,” and themselves constitute teachers’ essential site and source of learning.

[Figure 5 about here: Cycle of Inquiry]

As the double-headed arrows in Figure 5 suggest, learning is ongoing and recurrent and the three forms of knowledge are strategically interrelated. These schools appear to be “recultured” in the way BASRC’s theory of change envisioned. The whole school is both the site of inquiry and the focus for change; the community of explanation incorporates most of the faculty, not just a smaller group of reformers. Discourse about

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4 Two of the remaining schools also report gains in student achievement but since they have only two years, rather than the required three years, of data using the same measures, their growth cannot yet be “counted.” The third school reports neither decline nor growth, but is “holding steady.”
students’ standards-based achievement and expectations about evidence are commonplace rather than exceptional. The sites and sources of learning are internal and external—and mutually informing.

Knowledge for practice is both sought and filtered through knowledge of practice. Teachers’ new knowledge of their practice enables them to see ways in which they need to improve, and the kinds of resources [or knowledge for practice] they need to begin making those improvements. One teacher commented, for example, that the links between their focused effort on literacy, and their students’ work has allowed them to “see connections” they had not seen before, and make much more specific demands for assistance from their support provider.

Teachers in such schools have become particular and demanding in terms of what their school needs by way of knowledge resources from the outside, and in what form they should be provided. Knowledge of their practice has made them more powerful as consumers, as the double-headed arrow implies.

We observe a number of other things in schools whose patterns of relations among knowledge, learning and change resembles those depicted in Figure 5. We see that teachers’ generation and use of knowledge of practice often comes before systematic production of knowledge in practice. A hunch based in this observation is that the collective experience of inquiry at the school level may stimulate more inquiry at the classroom level. Teachers’ involvement with and acceptance of inquiry at the school level both lends cachet to the norms and mental attitude teachers need to do the work in their own classrooms, and provides the experience, skills, and comfort necessary to ask tough questions of one’s own practice—and to share the results.

In a few schools, school level inquiry is making its way into classroom-based inquiry and change. For example, a high school science teacher who had long assumed the disappointing achievement of many students in his culturally-diverse classes was a consequence of indifference or laziness was provoked by literacy data collected at the school level to take a look at his own class through that lens. What he found forced him to fundamentally reevaluate his practice. He discovered that a significant number of students in his science classes read a level insufficient to grasp the material. Yet, as the dashed arrow suggests, teachers’ systematic collection and analysis of their classroom data to inform both their practice and school level decision making is not yet routine in any BASRC Leadership School.

In schools comfortable with inquiry, we also find instances of teachers using inquiry tools to address issues that confront the school. For example, in the face of concern about the relationship between the assessments the state was soon to require, and those the school was using to assess their progress, a teacher did research on the overlap, congruence and conflict between them. She found “potentials for overlap and a different way of looking at this” and so turned a problem into an opportunity for the school to deepen its work. This teacher's response to a challenge signals an inquiry stance new to the school and extraordinary in most communities of practice.
The inquiry and action we see in Leadership Schools comfortable and confident with learning from their own site and practice are contrary to the norms of privacy and individualism characteristic of schoolteaching (Lortie, 1975). They mark a changed school culture, and generate a number of questions based in institutional traditions. Why would such things as portfolio readings or critical friends’ visits translate into new forms of inquiry at the school level? Why would site level data about problematic patterns of achievement among students encourage teachers to face up to their own effectiveness and look at the gap in their classrooms between intention and accomplishment? Why would teachers expose their own uneven student results to their colleagues?

Communities of practice

We find some answers to these questions in the character of the school’s community of practice and relations among teachers. These communities of practice have become communities of explanation by virtue of their collective inquiry; they also are learning communities where reflection about current practice and habits of inquiry prompt change at schools and classroom levels. They are communities of teacher learners where learning and change are a social process of active participation in inquiry. (Rogoff, 1994; Wenger, 1998)

BASRC Leadership Schools suggest how patterns of knowledge use and learning define the culture of the community of practice at the school-level [See Figure 6]. We see seven interrelated elements of the school’s community of practice that influence whether or how teachers could use knowledge for practice, whether or how they developed knowledge of or in practice.

[Figure 6 about here: A Community of Teacher Learners at the School Level]

In schools where we find teachers using data about their students and their practice to inform their decisions about directions for their school and about the sorts of external resources that would be most useful, we find that a majority of the faculty hold clear and shared goals for their students and their performance as a faculty. Faculty conversations about priorities for their school’s reform effort, evidence to support their strategy, portfolio application and designing a cycle of inquiry to assess their progress fostered clarity and buy-in on school goals. They also stimulated active communication within the faculty, across grade levels and departments. Faculty communication continued to address these classroom-specific concerns, of course, but in addition regularly engaged whole school issues, most especially patterns of student performance and faculty responses to disparities by students’ ethnicity.

Communities of teacher learners explicitly adopted what Cochran-Smith and Lytle (1999) call an inquiry stance toward their own practice as well as toward their broader workplace environment. In these communities we found instances where “problems” were transformed from “immutable facts” to subjects for inquiry and problem solving. This transformation was most apparent in high school faculty where explanation for poor student performance moved from those based in beliefs about students’ attitudes,
backgrounds or capacities to the “fit” between what their students needed to learn and achieve and what was provided them.

Communities of teacher learners possessed and used a number of resources. They developed the learning skills necessary to pursue inquiry and analyze evidence; they had a growing body of knowledge about aspects of their practice and continued to add to that understanding. These skills and knowledge were broadly distributed across the faculty community, not merely the assets of an isolated sub-group of teachers.

Communities of teacher learners also had a store of knowledge about “best practices” and were able to distinguish on technical grounds among alternative practices available to them. They knew not only what kinds of resources best suited their school, they also knew where to build or rebuild their own core technical capacity. This technical knowledge, combined with knowledge of their school site and classrooms, combined to make teachers adept at evaluating the kind and quality of knowledge for practice available to the school, and was central to what Donald Schon called the “reflective transfer” of knowledge from outside the school (Schon, 1983).

Finally, communities of teacher learners were communities open to the environment. In one or another form, they had boundary spanners, individuals active in the context outside the school who brought new ideas as well as challenges into the community.

These elements of the communities of teacher learners we encountered among BASRC Leadership Schools were mutually reinforcing and deeply interdependent. Technical skills alone did not enable a community of practice to be learners, or teacher learners to make productive change in their practice. Teachers required common values about inquiry, goals for their school, and shared conceptions of “good” work and a “good” colleague.

The high levels of social participation are signal to communities of teacher learners. (See Rogoff, 1994; Wegner 1999) We saw how communication and coordination among teachers extended the shared understanding [or community of explanation in Donald Freeman’s terms] that generated both action and inquiry. Communities of teacher learners used active participation to forge common ground about the meaning of the evidence they generated, and agreements about a course of action at both individual and organizational levels. Further teachers’ quest for shared goals and common perceptions of the facts of the matter, involved both individual accommodation and learning. Individual teachers’ learning, in this sense, is part and parcel of their involvement in reflecting on and inquiring into the practices of their school community.

**BASRC’s strategy stimulates communities of teacher learners**

Many of these elements of a community of practice where teachers are learners
often are thought to be outside the purview of policy, and to operate in the domain of school leadership—most particularly, school-level clear goals, communication, stance toward learning and inquiry. Certainly, we find, with the rest of the research community, that leadership matters. Strong principals were a feature of most all of the Leadership Schools successful in forging new relationships, making progress with a Cycle of Inquiry and whole school change. However, we also find clear evidence in our interviews, observations and surveys of BASRC’s influence on the development and functioning of all elements of communities of teacher learners in Leadership Schools.

A number of principals note change in their faculty’s norms of communication and attitudes of sharing and exchange. One said, for example: “I see my staff asking one another more questions. They check things out from the resource lab. A teacher will walk in to get materials, have a dialogue with the teachers and before you know it, one will be stopping by another’s classroom.”

Principals’ survey responses also credit BASRC involvement with substantial change on a number of critical dimensions of teacher community. “High standards for all students,” “Teachers’ consensus” on student outcomes and areas for whole school change tap the presence of “Clear and shared goals” depicted in Figure 6. Similarly, “Teacher Leadership” and “Staff discussions” tap dimensions of active communication among faculty. “Working with outside change agents” provides an indicator of “Boundary spanning,” and “use of data as a basis for decision-making” captures principals’ views about change in their faculty’s inquiry stance, learning skills, and knowledge both about their practice and appropriate resources to enhance their work.

[Table 1 about here]

Principals also report that they have some distance to go in order for their schools to be characterized by a community of teacher learners.

[Table 2 about here]

In a nutshell, Leadership School principals say that their school’s involvement with BASRC has resulted in important changes in their schools’ cultures—but that especially in the area of “consistent standards for all students,” and inquiry stance, much change has yet to take place.

Support providers also see new, stronger communities of practice taking form in Leadership Schools. One said, for example, “What difference do I see in BASRC schools? The main difference I see is that those schools and the district, to a lesser extent, are slowly turning towards gathering and using evidence in a formal accountability system. I think teachers, individuals, have been turning that way.... And it’s been neat to get a whole school community to pay attention and give [data and consequences] that level of priority.”

Teachers’ comments and our observations of faculty meetings and planning
sessions point to the emergence of a significantly different community of practice in many Leadership Schools. These new communities of practice have formed around the knowledge resources associated with BASRC—new skills and capacities, new knowledge of the school as an educational setting—and the community itself serves as a resource to generate new practices and invent ideas for reform. A number of teachers commented, for example, on how the diverse perspectives within their community enable them to see gaps in understanding that would otherwise be invisible. One said, for example:

*I know that I’m not perfect, but my standards are higher because of my colleagues. Also, I found out that there are many different ways to do something amazingly well… [through our teacher community] I found out that a person who writes a whole lot differently from me can be amazingly successful… and although I found out that I need to improve a lot I also found a couple of ways that work.*

Teachers also comment on the power of distributed expertise within the teacher community. One middle school teacher said, for example:

*By sticking together, someone comes up with something and we try it. When you start in this [teaching] business you are isolated and think in the box. [Because of the teacher community in my school,] I have learned to think outside the box. We have hit a lot of curves, but we feel like we are a group can work through them. When you talk together it is a powerful problem-solving group. There are things to be gained from this [community of practice] that cannot be gained from working alone.*

Many teachers attribute the stronger teacher learning communities at their schools to the tools and processes they learned at BASRC’s Summer Institutes, most especially skills in facilitation, reflective dialogue and conflict resolution—pragmatic skills important both to generating new knowledge and understanding about practice and to making effective use of the knowledge resources available to members of the Bay Area School Reform Collaborative.

**Lessons for policy about sites and sources of teachers’ learning**

This paper began by complicating questions of what teachers need to know in order to improve practice and how they can learn it. It draws upon our evaluation of BASRC to provide elements of a descriptive theory of how different forms of knowledge relate to one another, how teachers interact with these forms of knowledge and with each other to foster learning and change.⁵ The patterns of knowledge use and elements of teachers’ learning communities associated with BASRC’s experience contain important lessons for reformers.

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⁵ Thank you to Donald Freeman (1999) for reminding me about the value of descriptive theory as policy guide.
Patterns of knowledge use. Looking across the different patterns of knowledge use and generation in BASRC Leadership Schools, it is evident that forms of knowledge are path dependent. We notice that the knowledge teachers bring into the school and the knowledge and learning generated at the school site builds on what they know and can do. Wesley Cohen and Daniel Levinthal (1990) use the term “absorptive capacity” to signal the critical role prior knowledge plays in an organization’s ability to use external knowledge to remain vigorous and stay ahead of the competition. Their conception of how organizations identify and use knowledge corresponds with our observation that what teachers already know mediates between external knowledge and teachers’ capacity to use it effectively— or even to recognize— relevant external knowledge resources.

This view of knowledge, teachers’ learning and educational change makes it evident why “solutions” cannot be “imported” into schools or classrooms with any significant effect if internal capacity in the form of prior knowledge is not already there. Without foundational, situated knowledge of and in practice, teachers lack effective hooks to pull new ideas into their workplace. In other words, what teachers know about their own practices, and about their school as an educational environment, shapes fundamentally what and how much they can learn from knowledge for practice.

These diverse but interrelated images of knowledge complicate policy investments in teachers’ knowledge since they implicate different sites and supports for teachers’ learning. A successful school reform effort, in this view, would need to supply or foster knowledge of all three sorts—for, of and in practice—in order for teachers to learn what they need to know to initiate, deepen and sustain change.

Communities of practice. A description of relations in a community of practice illuminates age-old problems of knowledge use. Change agents and reformers have long been frustrated that teachers too often make little or only superficial use of the knowledge resources available to them. Knowledge resources evidently are not self-enacting nor do they necessarily engender learning. And learning does not necessarily lead to productive change in practice. What happens to knowledge brought into or produced by a community of practice depends fundamentally on the character of that community and relations among its members.

BASRC’s experience highlights the many ways in which a community of practice is both the medium and source of learning, reflection and new knowledge about practice. It also illustrates the situated character of the community of explanation created at a school. In each of the Leadership Schools where we found a community of teacher learners we found a community of explanation—we heard language and understandings particular to and shared by that community.

One important implication of the central role we see for communities of practice is their centrality to reformers’ visions of how to stimulate and sustain change. Policies need to consider how strategies can provide occasion, tools and resources for building a community of teacher learners. BASRC’s design is remarkable in that it provides teachers with the tools they need to learn how to learn, to forge new conversations and
accommodation among faculty, and with a “focused effort,” the work essential to constructing shared goals and understandings. Few reform policies keep communities of practice in their vision or acknowledge the pivotal role of a community of explanation to knowledge use, learning and change.

Another important implication of the situated character of these communities is that they cannot simply be regrouped or combined with other communities without attention to the [re]building of shared understanding and language. Policies aiming to bring different communities of explanation together—be they different school communities or more obviously diverse communities such as researchers and practitioners, policy makers and practitioners, or knowledge providers and knowledge users—must attend at the outset to building common understandings. BASRC accomplished some of this in its first years through the Portfolio Review process, where parents, educators, researchers, business people and others first spent time together calibrating their responses to schools’ portfolios and talking about why they saw the same evidence in divergent ways. Only after some level of mutual understanding was achieved did the group move onto their common work. Teachers’ assessments of these Portfolio Reviews as “the best professional development I’ve ever had” lay in the process of participation and joint sensemaking it entailed. These strategies for developing shared understandings and standards for good work not only created new communities of explanation among individuals based in other ones, they also play a critical role in generating a regional understanding of the goals and elements of school reform in the Bay Area. BASRC experience illuminates the trap of de facto assumptions about common language and explanations across communities of practice. Simply convening stakeholders from different organizational or institutional communities may be efficient, but likely will accomplish little by way of learning and progress absent opportunity for them first to have conversations about their different perspectives and understandings.

A related lesson: BASRC’s experience also suggests how teachers’ participation in multiple communities of practice/explanation can promote more durable structures for knowing and learning. Teachers from Leadership Schools who have participated in conversations throughout the region have been able to hear multiple perspectives on practice and reform and integrate them into their own. Participation in multiple stakeholder groups enables teachers to take them into account as they go about work in their own school communities. Access to multiple communities makes teachers’ own understandings more durable because they are more cosmopolitan and so less vulnerable to external “shocks” to their beliefs such as new or contradictory ideas about practice.

BASRC’s experience and the practical theory of learning it suggests stand in direct contrast to professional development or school reform policies that frame teachers’ learning as solely an individual matter. We see in BASRC Leadership Schools that learning is a social process, where the process in critical ways is the product, and where the knowledge generated by the community is more than a sum of individuals’ learning. Communities of practice generate knowledge and understanding that is different in kind from that produced by individuals alone. Likewise, individuals’ learning is matter of their participation in a community of practice engaged in reflection and inquiry. In sum, observations of relations among teachers and forms of knowledge in BASRC schools
suggest a different perspective for policy, one rooted in communities of practice as sites and sources of teachers’ learning.

References


Table 1
**LEADERSHIP SCHOOL PRINCIPALS’ REPORT OF CHANGES ASSOCIATED WITH BASRC INVOLVEMENT**
(N=63)

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<th>Strongly Agree</th>
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<td>Teachers’ consensus on desired</td>
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<td>Working with outside change agents</td>
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These data are from a Winter 1999 survey of all Leadership School principals.
Table 2
PRINCIPALS’ REPORT OF EXISTING CONDITIONS IN LEADERSHIP SCHOOLS
(n=63)

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<td></td>
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<tr>
<td>This school has consistent standards for all students.....................</td>
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<td>Teachers are engaged in systematic analysis of student data...............</td>
<td>2% 8% 27% 38% 27%</td>
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<td>Teachers in this school regularly examine school performance.............</td>
<td>2% 16% 22% 41% 20%</td>
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<tr>
<td>Teachers take steps to solve problems, they don’t just talk about them...</td>
<td>3% 8% 23% 30% 36%</td>
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