Supported Teacher Collaborative Inquiry

By Tamara Nelson & David Slavit

Introduction

Drawing on the rich line of research that has emerged over the past 15 years, this article details the types of support necessary for the establishment and nurturing of teacher collaborative inquiry. Although teachers have the ability and drive to initiate change, it is often the case that complex layers of support are required to achieve this goal, some of which originate in the teacher community, but others that must emanate from those who can advocate and facilitate these teacher-led processes.

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This article lays out a theoretical framework for supporting teachers engaged in collaborative inquiry. While we make use of a specific professional development project employing *supported collaborative inquiry* to add context, we are not providing a case study or review of literature in this paper; rather, we articulate a framework to provide guidance for supporting teacher collaborative inquiry and to detail specific types of support which can serve as units of analysis for studies on teacher professional development. These supports are based in the inquiry process, which is not a typical element of teachers' work, and in the environments that support teachers engaging in the inquiry process. We theorize that not only is it limiting to solely consider the

teachers and their immediate work in the conceptualization and implementation of collaborative inquiry, professional development must look to provide teachers with opportunities for influencing the contexts and impacting the forces that originate outside their immediate work environment (Fullan, 2000; Giles & Hargreaves, 2006). Therefore, we will define *support for the teacher collaborative inquiry process* and *support for the inquiry environment* as being manifested in a complex web of interrelated strands of support that emanate from a variety of people and entities. Together, these supports frame the interface of teacher development in this setting.

Research on Teacher Collaborative Inquiry

Research on the ineffectiveness of traditional models of professional development, combined with new understandings about learning, provide a renewed perspective on supporting teacher growth (Tyack & Cuban, 1995). A vision of effective professional development is becoming "increasingly clear" (Borko, 2004); evidence suggests that experiences should involve the creation of opportunities for teachers to engage as learners, build pedagogical and disciplinary knowledge, and co-construct and enact new visions of practice in context (Linn, Shear, Bell, & Slotta, 1999; Loucks-Horsley, Hewson, Love, & Stiles, 1998; Putnam & Borko, 2000; Radinsky, Bouillion, Lento, & Gomez, 2001). When these components are enacted in a collaborative setting, Little (2003) has termed this "the optimistic premise of professional community." Various structures have been used to support teachers' professional growth in collaborative settings, including professional learning communities, lesson study, communities of practice, and peer observation. These structures encompass a collaborative and inquiry-based approach that can lead to a "pedagogy of investigation" (Ball & Cohen, 1999).

Teacher inquiry, discussed here as inquiry conducted *by* teachers (as opposed to *on* or *with* teachers), is central to the current educational research landscape (Ball & Cohen, 1999). In conceptualizing teacher inquiry as a collaborative process, we draw upon the notion of dialogic inquiry as described by Wells (1999):

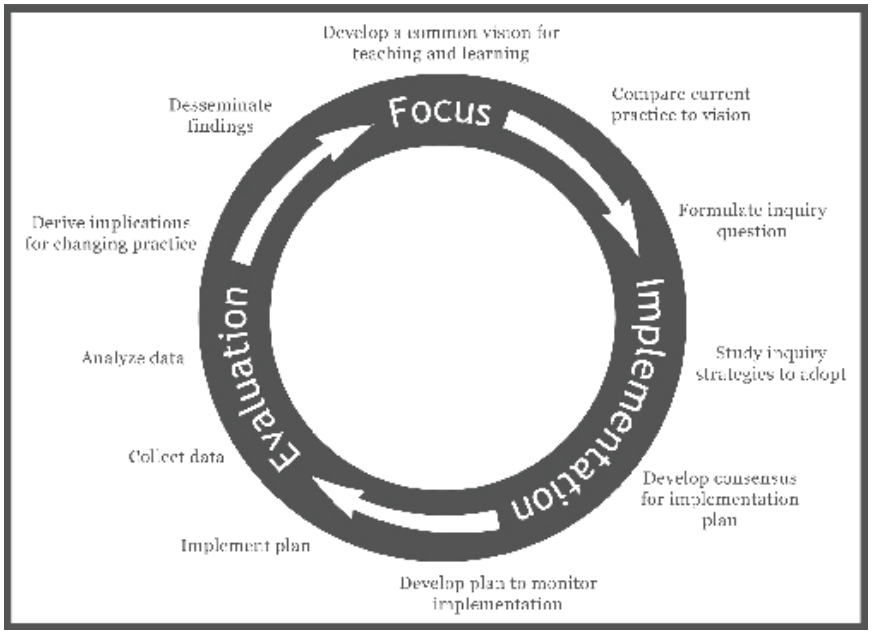
> Inquiry . . . indicates a stance toward experiences and ideas —a willingness to wonder, to ask questions, and to seek to understand by collaborating with others in the attempt to make answers to them. At the same time, the aim of inquiry is not "knowledge for its own sake" but the disposition and ability to use the understandings so gained to act informedly and responsibly in the situations that may be encountered both now and in the future. . . . Inquiry, then, is rooted in the understandings gained in the past as these are embodied in the culture's practices and artifacts and, at the same time, situated in the specific present of particular classrooms and oriented to the construction of new understandings. (p. 121)

We envision collaborative teacher inquiry as a cyclical process that fosters an ongoing dialogue about classroom practices and student achievement (see Figure 1). In this inquiry cycle, teachers determine a focus for the inquiry, then proceed

through stages of developing a plan for action, carrying out the plan while collecting and analyzing data, and determining the implications of their findings as they relate to their collective and individual situation. Research and evidence informs all stages of the inquiry, and advances or retreats across and within stages of the inquiry cycle are expected to occur.

Current studies on professional development acknowledge the effectiveness of situating teacher learning in the school context; however, teachers' reflections on their learning in relation to instructional decisions and student learning are quite often in isolation from professional peers or other supports (Little, Gearhart, Curry, & Kafka, 2003). Recent increases in the utilization of collaborative inquiry models purposefully incorporate the critical processes of reflection and collegial communication directly into the development experience (Dufour & Dufour, 2002; Gamoran et al., 2003; Hord, 1997; King & Newmann, 2000; Putnam & Borko, 2000). These models are usually situated in the school context and utilize the power of teacher-to-teacher collaboration, often with a facilitator or critical other, to analyze student data in relation to teaching practices. Emerging evidence does suggest that these initiatives can lead to effective, long-term teacher development (Grossman, Wineburg, & Woolworth, 2001; Little, 2003; Palincsar, Magnusson, Marano, Ford, & Brown, 1998). By working with colleagues in study groups, as critical friends,

Figure 1. A cycle for teacher inquiry. Each stage involves collaboration and each benefits from various types of support.



or in other collaborative settings, teachers "intervene in the isolation of practice, in which the only material for learning is one's own practice" (Ball & Cohen, 1999). Further, collaborative inquiry can provide a decision-making and problem-solving environment necessary to support long-term change (Giles & Hargreaves, 2006).

Recommendations by Darling-Hammond and McLaughlin (1995) and Hawley and Valli (1999) provide characteristics of effective professional development that support teacher learning and school improvement. They emphasize that professional development should be grounded in the work teachers do in support of student learning goals, engage teachers in inquiry and reflection, be collaborative, supported, and ongoing, and be meaningfully connected to other school and district initiatives. Also important for realizing the potential for teacher learning through collaborative processes is the establishment of norms and dispositions that allow for trust building and risk-taking (Little, Gearhart, Curry, & Kafka, 2003).

Fullan (2000a) extends this perspective by arguing that, if schools are to move toward the formation of learning communities, a "reculturing" must occur that involves examination and potential change in the collective norms, values, and beliefs that comprise the school's "persona." In addition to improvement in staff development and curricular reform, reculturing:

> involves going from a situation of limited attention to assessment and pedagogy to a situation in which teachers and others routinely focus on these matters and make associated improvements. Structures can block or facilitate this process, but the development of a professional community must become the key driver of improvement. (p. 582)

Fullan (1999, 2000a, 2001) argues that "restructuring," simply changing those formal elements of an organization, is not enough, and that the analysis of data should be the central activity in any reculturing process. But because both structure and culture have the potential to block teacher development, specific kinds of support can be needed in both areas for teachers to "routinely" use data in support of improving practice and fully engage in a reculturing process. Further, the scope of reculturing, whether it occurs at a local level amongst a group of teachers or extends to more systemic, organization-wide change, is highly dependent on supports embedded in existing structures and cultural norms. We argue that reculturing can only occur if teachers feel empowered to see beyond their immediate contexts and have the confidence and ability to attempt to influence, and not just be influenced by, the various forces that shape their immediate work and development. Steel and Craig (2006) link this empowerment to administrative support, asserting that administrators must build from teachers' existing competencies and willingness to "take action in the public domain" to provide "genuine encouragement to take on active roles beyond the classroom" (p. 680). Through empowered teacher leadership, teachers can effect change not only in their individual classrooms, but can also influence larger educational contexts.

In the rest of this article, we draw upon this literature as well as an ongoing professional development project to provide a theoretical framework for *supported collaborative inquiry* as a professional development model, with specific attention to the types of support needed in this process. We highlight teachers' ability to use data to improve practice, the essence of Fullan's notion of reculturing, to clarify and extend our discussion of support. Because reculturing often takes three to six years to truly emerge (Fullan, 2000b), we focus on those supports crucial to initial aspects of reculturing, including challenging existing beliefs and rethinking collaborative norms. The specific attention to the importance and nature of support needed in the teacher change process makes a new contribution to the professional development literature.

Supported Collaborative Inquiry

Defining "Supported Collaborative Inquiry"

We define the term *supported collaborative inquiry,* in the context of teaching, to refer to a model of professional development that enacts varied, explicit means of support for teachers co-investigating a commonly agreed-upon element of teaching and learning. Collaborative inquiry, in and of itself, rests on three pillars important to the teacher change process:

(1) The construction of a high-functioning, collaborative teacher community;

(2) The examination of beliefs and perspectives in the pursuit of a common vision of high quality learning and teaching; and,

(3) An understanding of and ability to effectively move through an inquiry process in support of a collaboratively agreed upon goal.

None of the "pillars" underpinning this process are typical to a teachers' daily work. Hence, teachers' willingness to participate in collegial conversations is a fundamental yet insufficient element. For substantive engagement in collaborative and dialogic inquiry leading to change, we assert that facilitation and support of the three pillars is essential. This facilitation should provide ongoing and explicit attention to the development of collaborative norms and trust building. This, in turn, can support the reculturing process by providing for more critical and reflective forms of communication about data related to classroom practices and student achievement. Additionally, due to various policies or competing forces, evidence exists that teachers must be cognizant of and attentive to the larger environment framing their inquiry in order for it to have any impact, or even be enacted (Ball & Cohen, 1999). Teachers may not have the time or expertise to fully manage, utilize, or even be aware of the complex web of contextual factors found in school, district, state, and other "external" initiatives and structures. But when support is present, teachers' collaborative inquiry can be an action-based professional

development model with high potential for teacher change, impacting immediate (e.g., the teachers' classrooms) and broader (e.g., school or district) contexts. And, while supported collaborative inquiry can take on a variety of forms, depending on the composition of the learning community and the nature of the inquiry process, we suggest that the following kinds of support are critical for all types of teacher collaborative inquiry.

Two Types of Support

Teachers engaged in professional development that utilizes a collaborative inquiry model require complex, interrelated strands of support. However, the *nature* of support is an emerging empirical and theoretical area in the literature on teacher collaborative inquiry. If reculturing based on data analysis is to occur, specific support for the collection, analysis, and discussion of data may be needed. An important consideration in an analysis of support lies in the locus and type of potential impact; in other words, from where does the support emanate, and what is its nature? From this perspective, we will discuss:

(1) *Support for the teacher collaborative inquiry process, and*

(2) *Support for the inquiry environment.*

Support for the collaborative inquiry process refers to those facilitative processes that support teachers as they negotiate their inquiry path and move through an inquiry cycle. These include the facilitation of dialogic processes that help teachers further their inquiry stance and increase their ability to function as a collaborative group. Support for the inquiry environment refers to facilitative processes that allow teachers to better negotiate those impacting forces which emanate from outside the teacher group. Such forces might include school, district, and state initiatives that can strengthen or limit the teachers' inquiry process.

Supported collaborative inquiry can enhance the professional growth trajectory of teachers by providing opportunities for the furtherance of inquiry in four important ways. First, support can increase the amount of time available to teachers, time necessary to co-construct a vision of high quality teaching and learning, to generate a common goal, or to collect and analyze data. This can be done in direct ways through the provision of specific time in the school day and year for collaborative inquiry, or it can occur with the presence of a dedicated facilitator responsible for supporting the logistics and facilitation of meeting times and schedules, freeing teachers up for responsibilities closer to the inquiry focus. Second, individuals who provide intellectual support can draw on resources to increase teacher awareness of existing research, suggest and oversee specific types of data collection and analysis, and provide a critical and reflective lens for the teacher team. Third, support can help to establish a productive set of collaborative norms and inquiry goals as well as assist in the actual logistics of the inquiry process. The use of protocols

to structure collaborative data analysis or other types of conversations and the establishment of norms of participation and collaboration are activities for which teachers may need support, and which are crucial to the inquiry process. Fourth, supported collaborative inquiry can influence teachers' abilities to vision, challenge beliefs, and broaden the critical lens framing the work. As stated earlier, if teachers are to participate in sustainable professional development, the impact of their inquiry needs to be conceptualized beyond the teacher group or immediate inquiry environment. We now discuss specific aspects of support for teacher development through collaborative inquiry.

Support for Teachers Engaged in Collaborative Inquiry

The intent of this article is to present a theoretical framework for supported collaborative inquiry. However, we will draw upon data collected in the first two years of a three-year professional development project to illustrate elements of the model and framework, with a particular focus on those supports which enabled opportunities for reculturing through the use of data-based inquiry.

PRiSSM: A Supported Collaborative Inquiry Project

Partnerships for Reform in Secondary Science and Mathematics (PRiSSM) was a three-year professional development project funded through a Title II-B U.S. Department of Education grant. At the time of this article, the project was just beginning its third year and had expanded from 45 teachers in Year 1 to approximately 150 teachers in the subsequent two years. The goals of the project included the development of self-sustaining professional learning communities (PLCs) amongst middle and high school mathematics and science "lead teachers" from six school districts in a variety of urban, suburban, and rural settings. During Year 1, the lead teachers developed inquiry and leadership skills in cross-building, cross-disciplinary PLCs of 4-6 members. The final two years of the project involved the lead teachers translating these experiences into the development of school-based inquiry groups with building colleagues. Project facilitators were designated to support each PLC in ways that emerged throughout the first two years. The facilitators for the PLCs included district-level mathematics and science specialists, teachers on special assignment, and regional-level specialists in mathematics and science education.

PLCs used school-based data to determine areas for instructional improvement, and negotiated an inquiry focus that bridged these identified needs and a negotiated vision of high quality learning and teaching. From this continuously negotiated vision, the PLCs worked to improve student learning by engaging in a collaborative inquiry cycle (Figure 1). Week-long summer academies for the lead teachers provided preparation for engaging in a collaborative inquiry process and, after Year 1, for engaging colleagues in this process. Most PLCs then met throughout the academic year at times that fit each group's context. Facilitators attended PLC

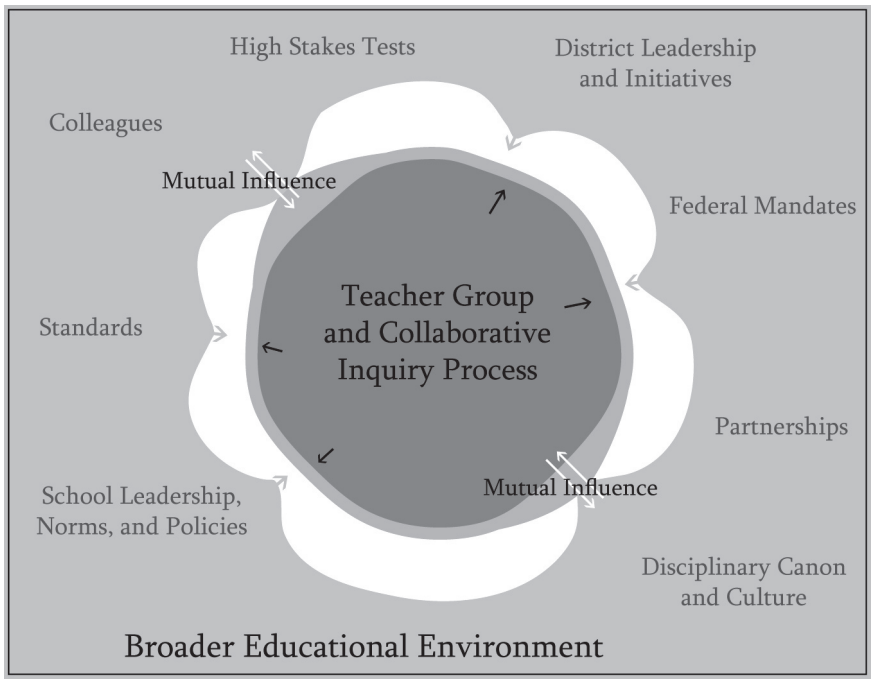
meetings as often as possible, providing tools and other supports that included conceptual frameworks, such as professional standards documents; research literature relevant to the group's inquiry focus; help in formulating agendas and facilitating meetings, as requested; protocols for dialogue or data analysis; and, assistance in meeting grant requirements for accountability.

To illustrate our theoretical propositions regarding support for teachers' collaborative inquiry, we draw upon PRiSSM data sources including teacher surveys and interviews, PLC meeting observations and artifacts, observations and artifacts from summer academies for the lead teachers (including sessions for building administrators), student work collected by participating teachers, and artifacts from planning meetings. Ongoing data analysis has involved specific attention to critical events which connect specific means of project support with teachers enacting data-based inquiry.

An important consideration when analyzing teacher growth in the context of supported collaborative inquiry is the recognition of various forces, both obvious and unseen, that affect the scope and impact of the teachers' inquiry. Figure 2 illustrates how these forces can both support and constrain the work of the teacher group, and how teacher groups might influence (and not just be influenced by) some of these less visible forces. Supports for the inquiry environment can be provided to teachers to increase awareness and better negotiate these forces.

Changes that extend beyond the teacher group may result from collaborative inquiry, such as a building principal deciding to go "school-wide" with the teacher group focus or collaborative inquiry process. If this is done without intellectual support or buy-in from school staff, then this may result in only a structural change to the daily routine; but if school leadership and other building colleagues are provided real opportunities to immerse in the inquiry process, reculturation is possible. Further, in the case of PRiSSM, some teachers and teacher groups moved "outside of the box" and explicitly impacted (and in some cases become part of) larger educational contexts as a direct result of their inquiry. For example, some teachers became part of school and district leadership teams as a result of their inquiry work, providing them unique opportunities to initiate cultural change. On the other hand, some teachers were held "inside the box" due to these external forces. In one case, a building principal appropriated the inquiry focus of the teachers to match the main building initiative, while other groups of teachers could not overcome their own focus on state assessments to consider other aspects of student learning. These circumstances had direct bearing on the growth trajectories of both the teachers and the teacher groups; more specifically, the ability to be cognizant of and interact with these forces were critical factors in the teachers' ability to initiate and sustain their inquiry focus. We now turn to a specific discussion of the two types of support for teacher collaborative inquiry, using the PRiSSM professional development project as context.

Figure 2. External supports and constraints on teacher groups engaged in collaborative inquiry.



Support for the Collaborative Inquiry Process

The most immediate supports for enacting an inquiry process are usually provided by a facilitator or "critical other"—someone external to the teacher group but internal to the inquiry process. Supports of this kind can be manifested in a variety of ways, including support in the creation of a common vision of high quality learning and teaching, construction of group norms and functioning, data collection and analysis, and reflection on the overall inquiry process. A facilitator, along with other individuals external to the teacher inquiry group (such as principals and other district personnel), can also support the inquiry process by providing tools and alternate perspectives that help shape purposeful dialogue about classroom practice and student performance. For example, the teacher community could be provided with protocols specific to analyzing large-grain test data or classroom-based assessments, reading research, or sharing beliefs and values. However, if the inquiry focus and process are to be defined and driven by teachers, a facilitator needs to know when and how to *not* take action. It is appropriate in teacher-led inquiry for teachers to struggle, as this is the only way reculturing can occur (Fullan, 1999). Advocating for or defining a focus, or providing resources and inquiry tools before the teachers have fully engaged in focusing and planning the inquiry,

The administrators' simultaneous need for accountability and efficiency present serious potential barriers to the reculturing process, and specifically to teacher work that truly utilizes a data-based, inquiry framework; inquiry is usually not efficient. Further, the administrators' current efforts and vision seemed to be based on general concepts of "best practices" not based in a particular content area; the construction of a shared vision of teaching and learning with the teacher teams, particularly at the secondary level, could be thwarted by content-related barriers, depending on the inquiry focus. It is important at all grade levels for administrators to be aware of the existing research base and construct a vision of teaching and learning that is grounded in specific content. Without such a perspective, constructing a truly shared vision of high quality learning and teaching with teacher teams in regard to goals, beliefs, and intellectual frameworks is nearly impossible.

While accountability can be an important form of support, we believe it needs to occur in an authentic form. Filling out time sheets for a principal or project director may do little to support the inquiry environment. But preparing a presentation of a group's inquiry activities for a school, project, or conference necessitates reflection on all aspects of the inquiry cycle and associated resources, challenges, and impacts. PRiSSM teachers reported that preparing for an annual "Showcase" for other project participants caused them to deeply consider what they had done and how they had done it. Additionally, encouraging and supporting teachers in presenting their collaborative inquiry processes and impacts at regional and national conferences can empower them in realms beyond their departments, schools, and districts. PRiSSM teachers presented at a wide variety of conferences, and all spoke of how it impacted their understanding of what they had done in their PLCs. Three teachers who presented at an international conference were initially resistant to the idea of writing a paper to accompany their presentation, but afterwards discussed the power and benefits of the experience. No longer was this an accountability issue, but rather a genuine opportunity to reflect on past work and share perspectives at a wide-ranging forum. As one teacher stated, "If we can do this again, we'll write the paper!" These forms of authentic accountability can serve to increase teacher voice and provide avenues for teacher leadership that extend beyond individual classrooms, departments, and schools.

The administrators' comments above, though not uniformly shared, show care and sensitivity to the theoretical notions previously connected to effective professional development. Specifically, the administrators have taken seriously the teacher-centered notions of individual and shared beliefs, building on existing practice, and collaborative inquiry. Their comments also reflect the important role of support by "outsiders," or individuals external to the teacher community, and the importance of reculturing efforts to extend beyond local, isolated groups of teachers. Besides directly supporting the teacher inquiry, the values and beliefs of administrators can lead to specific cultural traits in a building or district that foster collaborative norms, functioning discourse communities, and a shared vision of high quality

might be detrimental to the inquiry process, and could certainly remove ownership and buy-in from the teacher community.

A discussion of specific activities from the PRiSSM project provides an image of this kind of support for the inquiry process. PRiSSM teachers' efforts to engage in collaborative inquiry were supported by specific activities at each of two summer academies. For example, during the first PRiSSM summer academy, 45 teachers came together to share and construct a vision of high quality learning and teaching, and to begin to develop an inquiry focus. Very few of these teachers had prior experience engaging in an inquiry-based, collaborative community. They began the process by examining and studying data about their schools, students, and own department-wide and classroom-based practices. Later, they brainstormed what high quality learning and teaching would look and sound like in science and mathematics classrooms. Videos of classroom instruction were then used to further challenge their current visions and come to a deeper understanding of oft-spoken phrases such as "student-centered," "hands-on, minds-on learning activities," and "teacher as facilitator." The teachers, in their newly formed collaborative groups, then focused on gaps between their vision for high quality learning and teaching and their classroom and school data, attempting to identify one area on which they could focus their inquiry. These conversations and activities continued over the course of the academic year.

The importance of exploring beliefs, and ways in which this could be done with teacher colleagues and building principals, was specifically addressed through the modeling of various protocols and activities. Support also focused on developing theoretical frameworks and techniques for constructing and enacting teacher collaborative inquiry. Quantitative and qualitative data collection and analysis methods were explored, including examining student work, case study analysis, observational evidence, and large-scale student achievement data. Protocols for reading and discussing text were also modeled and practiced. Many teachers visited each others' classrooms or videotaped their teaching for later discussion and analysis. Though a variety of inquiry approaches were used, all groups decided to collect student work and other artifacts of their teaching processes to analyze relationships between their teaching and students' skills and/or conceptual understandings.

Collectively, these supports provided specific ways for the reculturing process to occur inside the teacher community through data-based collaborative inquiry. However, reculturing is usually thought of as a larger, more systemic process that emanates beyond small groups of individuals (Fullan, 2001). Further, teacher development can be limited if conducted without awareness of and involvement with contexts of schooling that extend beyond the immediate work of the teachers. For these reasons, it is important to also consider supports that impact and/or emanate from beyond the immediate work of the teacher community.

Support for the Inquiry Environment

Support emanating from outside the teacher inquiry group is more likely to impact the contextual and environmental factors that influence the inquiry process. These *supports for the inquiry environment* are extremely critical to the success, impact, and sustainability of a teacher collaborative inquiry, and are important in extending the reculturing process beyond the immediate work of the teachers.

In the past, the notion of support for teachers usually translated into dollars and materials for instruction, or providing specific trainings on curriculum, content, or focused areas of practice. An analysis of two chapters in the *Second Handbook of Research on Teaching* (Wittrock, 1986) shows that teachers traditionally had little say in the focus or content of professional development (Lanier & Little, 1986) and that principals have had limited engagement with teachers regarding beliefs and practice, instead identifying materials, time, and space as motivators and means of support (Feiman-Nemser & Loden, 1986). While the evidence previously cited suggests that these roles and norms are changing, administrators and professional developers must continue to transcend these limited notions of support and move into more intellectual realms that support the reculturing process, taking into account teachers' beliefs, dispositions, knowledge, and time demands, as well as principles of shared leadership (Bay, Reys, & Reys, 1999; Keedy, 1999). Specifically, professional development must more fully engage in the broader contexts of the educational environments it seeks to impact; professional development must look beyond the classroom. In the contexts of school systems, this means raising awareness and garnering support from key stakeholders such as building colleagues and administrators, district curriculum specialists, and superintendents. Policy and funding issues at the state and national levels also need to be considered. While not an easy task, establishing awareness and support of this kind can provide immediate resources to the inquiry work of the teachers, as just discussed. But perhaps more importantly, this level of awareness and support can offer credibility, broadened intellectual capacity, and movement toward sustainability for the work of the teachers by enhancing the environment and potential sphere of impact in which the work occurs. Though difficult to obtain, particularly for districts with limited financial and political resources, support for the inquiry environment of this kind can lead to reculturing at the systemic level (Fullan, 2000a; Gamoran et al., 2003).

So what does this kind of support look like? And how can it be identified, developed, and enacted? In the context of PRiSSM, 16 administrators attending the Year 1 summer and mid-year academies discussed the notion of teacher support with members of the steering committee in two 1-hour conversations. The administrators, who possessed various levels of administrative experience and knowledge of teacher inquiry, were given six attributes of effective PLCs (Dufour & Dufour, 1998) and asked to discuss their importance, and any means of support a building principal could provide. Accountability emerged as an area of great importance to the administrators. Specifically, this addressed teacher-to-teacher accountability in

the functioning of the group, and accountability to students in the development of "best practices." The latter was a much-discussed idea, usually spoken in the context of current building or district initiatives. Administrators also spoke of the need for "efforts to be teacher-led and not administrator-led," and suggested that teacher time was a key factor in this process. Administrators discussed ways of "making time to meet," including constructing master schedules to support collaboration, setting up peer observations, and allowing early release time to be used by teacher teams. Administrators acknowledged the difficulty in providing time for teachers to conduct collaborative inquiry. As one administrator stated, the work of the teacher teams needs to be "good, efficient, and effective." Accountability also surfaced in a different form in this context, as some administrators advocated for "building accountability for teams to document time" and products, possibly through meeting agendas and minutes.

While only a few administrators spoke of actual participation in the teachers' collaborative inquiry, many expressed the feeling that "as administrators we can assist them in identifying the research" and "digest data for the teachers to support critical thinking and reflection." However, many administrators also suggested that, while they knew the literature on "best practices," they were less familiar with research specific to mathematics and science teaching and learning, which made understanding the work of teacher teams in this area more difficult. Administrators were quite articulate regarding the role of collecting data, particularly student work, in the process of collaborative inquiry, but also highlighted the importance of teacher time for data analysis and reflection. As one administrator stated:

> It's easy to plan time to do the research and identify and implement the work of best practices, but then it is hard to plan and structure the dialogue and reflection that occurs after this. . . You don't always have time to complete the whole circle.

Whether the comments of these 16 administrators could be considered typical is unknown. However, their comments do raise important issues about the perspective of administrators in supporting teacher collaborative inquiry. Specifically, these administrators are at least aware of specific building-wide actions that could be taken to support teacher collaborative inquiry, and many appear ready to provide such support. Teacher time is perhaps the most valuable commodity in a school, and these administrators were keenly aware of the need to provide teachers with the necessary time for collaborative inquiry. Further, a teacher's ability to maintain such commitment to one's professional development can be difficult to sustain over a period of time, as time and resource support can be pivotal to the maintenance of this commitment. For example, while maintaining high excitement levels and seeing positive benefits to their experiences after two years of work in the PRiSSM project, several teachers began to reflect on the time and effort involved. As a middle school science teacher noted, "This is a very powerful way to analyze curriculum, to look at student work . . . but if I can't have the time within the regular school day then I can't continue doing it."

learning and teaching. Teachers in such environments might already possess various professional dispositions supportive of collaborative inquiry, and may more readily establish connections between their work and that of the larger school contexts.

While support from building administrators is essential, the locus of support must extend beyond the building level. District, state, and national contexts play important roles in the development and activity of a building-based teacher inquiry community (Gamoran et al., 2003). For this reason, a PRiSSM staff member with a long history of solid relationships and numerous successful partnerships with member districts was designated as district liaison to ensure that communication and awareness were maintained. Not only was this key to the solving of logistic and budgetary issues, but opportunities for opening up dialogue about the general goals of the project and the specific goals and needs of teacher teams arose with a variety of district personnel. At the minimum, this raised awareness of the teachers' activities in ways and with individuals otherwise unlikely. Further, participating districts were represented on the project leadership team through their designated facilitator and/or district representatives; thus, districts had a direct say in the negotiation of goals, activities, and overall direction of the project. Hence, a somewhat "invisible support," at least from the perspective of the teachers, was provided to the teacher communities through this work with key district administrators.

It is important to note that the supports articulated above can impact broader goals than those contained in the teacher inquiry. Administrators often speak of "building leadership capacity" among their staff, an essential ingredient in shared school leadership and a key to the reculturation process. One goal of supported collaborative inquiry could be to move every teacher in the inquiry team closer to the facilitator role, directly impacting the leadership capabilities of the members of that team. Not only does this support the sustainability goal of the teacher inquiry, but it can have much broader impact by supporting the reculturing process at the building and district levels.

Implications

Teacher collaborative inquiry is possible without support that is external to the teacher team. A dedicated, knowledgeable, passionate, and focused group of teachers can unite through a common line of inquiry to address important instructional and curricular concerns. Teachers can meet outside of the school day to carry out this process. Teachers can collectively facilitate the logistics of regular meeting times and the maintaining of quality, inquiry-focused interactions. Teachers can provide each other with a critical lens necessary to move the inquiry forward.

But these are extremely difficult and demanding challenges to face, particularly in our current era of high-stakes teacher accountability (Giles & Hargreaves, 2006). With teachers facing daily responsibilities for the education of 25-150 students and other pressing professional demands involved in the school day and year, finding

time, energy, and reason to participate in a collaborative inquiry process can be less than obvious, particularly given the presence of school- and district-mandated professional development initiatives that normally consume the intellectual and time factors that define a teachers' professional growth space. In these situations, the "emotional labor" of teaching can be stretched to the brink (Hargreaves, 1997).

This article has documented specific reasons for supporting professional work of this kind, as well as a framework for the kinds of supports necessary to encourage and facilitate these teacher-led processes. Specifically, we have discussed *support for the collaborative inquiry process* and *support for the inquiry context* as two important areas to be considered by professional developers, school administrators, and researchers of teacher professional development. Further, we have identified specific kinds of support in both categories that can advance the teacher inquiry process and extend the scope of impact beyond the teacher community. While "completing the whole circle" of an inquiry (if possible) is an important step in the reculturation of a teacher group, it is a single step in the reculturation of the larger school or district systems. Supported collaborative inquiry that leads to systemic reculturation is highly dependent on the awareness and support of colleagues and administrators in these contexts (Ball & Cohen, 1999; Thompson & Zeuli, 1999). Building- or district-based change, grounded in inquiry, is likely to fail without attempts at sharing beliefs and raising awareness outside of the teacher collaborative circle (Putnam & Borko, 2000). Supported collaborative inquiry, as described above, is a model of professional development that specifically provides for reculturation to emanate directly from the beliefs, motives, and work of classroom teachers.

As Grossman et al. (2001) state, "The simple fact is that the structures for ongoing community do not exist in the American High School" (p. 947). And while different structures are present at the K-8 level, similar issues related to community exist. Some of this can be attributed to political and economic disinterest, cultural norms, and mere tradition. But as Grossman et al. further explain, the presence of a community for teacher learning rarely exists, if it exists at all, inside the workplace. To take seriously the notions of supported collaborative inquiry included in this paper may require a serious reconceptualization of schooling and teacher professional development (a reculturing at this level), one that is dependent on funding and a more serious attention to the support of intellectual resources for teacher professional growth. Further, individual teacher growth (in both content and pedagogy), while highly important, must not be the only instructional criteria by which professional development is judged. Teachers' shared vision of practice or school culture should be the unit of analysis, not merely changes in individual practices or individual beliefs (Hargreaves & Fullan, 2000). In the context of policy implementation, Spillane, Reiser, and Reimer (2002) make this explicit:

> Implementation practice is not simply a function of an individual agent's ability, skill, and cognition; rather, it is *constituted in the interaction* of administrators, teachers, students, and their situation in the execution of particular tasks. Hence,

> the activity system, as distinct from the individual teacher's or administrator's knowledge structures, becomes the appropriate level of analysis. (p. 412, italics in original)

A teacher or teacher group's ability to influence, and not just be influenced by, broader educational forces is a first step in an empowerment process that can lead teachers to initiate or play major roles in systemic reculturation. We argue that such a movement leads teachers away from professional isolation and impacts more than the individual teacher in her or his classroom. But it is also a movement that can be led, but not fully achieved, by teachers' alone. Specific supports are necessary for this type of reculturation to be derived from teacher initiatives.

The perspectives in this article can serve to ground future research on teacher and administrator professional development, provide a framework for thinking about the necessary support for teachers engaged in collaborative inquiry, and provide specific guidance for policy makers, school and district administrators, and other stakeholders interested in supporting teacher development of this kind. While not simple to provide, support of this nature can serve to provide the time, guidance, and intellectual capacity for teachers to engage in authentic inquiry that can lead to individual and collective changes in instructional beliefs and practice.

Notes

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