Improving Reading Achievement
Through Professional Development

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Christopher-Gordon Publishers, Inc.
Norwood, Massachusetts
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Building Capacity for the Responsive Teaching of Reading in the Academic Disciplines: Strategic Inquiry Designs for Middle and High School Teachers’ Professional Development

Cynthia L. Greenleaf and Ruth Schoenbach

Key Ideas

✓ For all students to continue to develop as readers beyond the early grades, plentiful opportunities to read and to learn strategic approaches to reading, with the support and guidance of knowledgeable teachers, are necessary. Yet for many reasons, secondary teachers are reluctant to teach reading in their subject area classes.

✓ Those of us responsible for teachers’ professional learning must design effective learning environments for teachers, providing strategic opportunities, tools, resources, and collaborations to assist teachers in developing key capacities necessary to “teach for understanding” in the complexity and diversity of modern classrooms.

✓ By engaging secondary teachers in a variety of inquiries into their own and their students’ reading practices, we can assist teachers in constructing richer and more complex theories of reading, in seeing in new and more generous ways their students’ capacities to read and learn, in drawing on and developing their own resources and knowledge as teachers of reading, and in transforming their classrooms into places where students develop new identities as capable, academic readers.

For

• Teacher educators
• Administrators, teachers, researchers
These kids just can’t, or don’t, or won’t read.

I don’t know anything about teaching reading.

Besides, teaching reading is not my job.

These and similar laments are likely to be familiar to anyone who has talked to middle or high school teachers about the ways their students’ reading proficiencies affect their teaching goals or their expectations for student learning. Delivered with sighs of resignation or frustration, these words give voice to the theories that subject area teachers hold about their students’ reading abilities and attitudes, about their own capabilities and knowledge to serve as reading mentors, and about the roles and responsibilities they hold as educators. Contributing to teachers’ sense of futility, an expanding curriculum and increased public scrutiny in recent years have lodged teachers between the rock of standards and accountability and the hard place of students’ actual preparation to read and learn in the subject areas. Given these pressures and teachers’ beliefs about their own or their students’ limitations, it isn’t surprising that many teachers find ways to engage students in learning science, history, math, or even English without relying on students’ reading of class texts.

We know that for students to continue to develop as readers beyond the early grades, they need plentiful opportunities to read and to learn strategic approaches to reading with the support and guidance of knowledgeable teachers (for a recent review of this research see Snow, 2002). Despite this knowledge, for decades reading educators have documented that little in the way of comprehension instruction actually occurs in intermediate or secondary classrooms (Durkin, 1978; Snow, 2002). For decades, middle and high school students’ reading proficiencies have fallen far short of the mark for a democratic society that depends on a knowledgeable citizenry for increasingly complex dialogue, debate, and decision making (Donohue, Voelkl, Campbell, & Mazzoe, 1999; Mullis, et al., 1994). A considerable body of scholarship has documented secondary teachers’ apparent resistance to teaching reading in the subject areas (Alvermann & Moore, 1991; Pajares, 1991; Richardson, 1990).

Our view, however, is that the teachers whose voices open this chapter are misreading the motivations and capacities of their students and underestimating what they themselves can accomplish in the classroom, based on their limited access to the literacy proficiencies that students exhibit outside school and on their own limited conceptions of reading and its relationship to disciplinary
thinking. How can we help subject area teachers rethink their assumptions, engage students more deeply in reading, and help students draw on their out-of-school experiences to develop the advanced literacy required to be lifelong learners and participants in a democratic, information-based society? This is the complex problem we are addressing in our work with middle and high school teachers and teacher educators from our own region and around the country.

We have found that by engaging teachers in a variety of inquiries into their own and their students' reading practices, we can assist teachers in constructing richer and more complex theories of reading, in seeing in new and more generous ways their students' capacities to read and learn, and in drawing on and developing their own resources and knowledge as teachers of reading. We have seen teachers transform their classrooms into places where students develop new identities as capable, academic readers. In this chapter we will present a case for an inquiry-based approach to teacher learning that is strategically designed to transform teachers' classroom practices by building key teaching capacities and a deeply experiential knowledge of reading. In designing inquiries for professional development, our goal is to build generative knowledge for teachers—that is, knowledge that enables teachers to create, or generate from their deep understanding of reading, informed and helpful instructional responses to students' reading and thinking in the academic disciplines.

We will describe the professional development tools and approaches that we have been creating, implementing, and studying in collaboration with teacher colleagues, highlighting the key principles of theory and design upon which they are based. We will share the accumulating evidence that this way of working initiates powerful and ongoing teacher learning, changes in teaching practice, and positive literacy growth for students. Finally, based on the lessons we have learned and our experiences in this work, we will offer some recommendations for professional development practice.

A Program of Research and Professional Development

Since 1995, we and our colleagues in the Strategic Literacy Initiative have engaged in collaborative inquiry with various communities of middle and high school teachers to develop tools to assist them in becoming teachers of strategic reading in the context of
their ongoing subject area teaching. These tools include an instructional framework, Reading Apprenticeship, which draws on the metaphor of apprenticeship to signal the talent and expertise that both teachers and their students bring to the work of reading, as well as the collaborative relationship that is at the heart of their learning together (Schoenbach, Greenleaf, Czikó, & Hurwitz, 1999, describes the Reading Apprenticeship framework and documents our progress in this work with teachers and students). Over the past eight years, with teacher partners we have developed case studies of students carrying out reading tasks, studies of teachers’ work to implement Reading Apprenticeship approaches in various subject area classrooms, and videotapes of classroom literacy events and interactions that serve as resources for professional development. In response to the voices that opened this chapter, our work aims at helping teachers to understand that students bring many reading strengths to academic reading tasks, that teaching reading in their disciplines is part of teaching their disciplines, and that they can apprentice students to more powerful ways of working with class texts by drawing on what they know as more expert readers and on what students know as resourceful and strategic adolescents (Greenleaf, Schoenbach, Czikó, & Mueller, 2001).

For several years we have provided a yearlong series of professional development sessions for approximately 300 middle and high school teachers from our local region, as well as several national institutes for an additional 50 to 150 teacher leaders from other states and regions. Teachers who volunteer for this professional development come to the Strategic Literacy Initiative in cross-disciplinary school teams and meet in a learning network with several other school teams to develop cross-disciplinary and cross-site perspectives on reading instruction. To further develop teacher leadership capacity, we engage teachers who have completed their first year of professional development in a continuing professional development network, at which they work in both subject-specific groups and school teams to develop tools and resources to support the work of teacher colleagues. To bring resources and tools to the preparation of beginning teachers, we conduct a collaborative teacher education consortium for colleagues in preservice education. Our scope of work focuses broadly on designing and studying many ways of engaging communities of middle and high school teachers in inquiry modes of teaching and learning, in order to help teachers embrace and develop the work of apprenticing students to discipline-specific ways of reading.
Design Matters: The Research Base for Inquiry-Based Professional Development

The professional development approach of the Strategic Literacy Initiative derives from new conceptions of teaching that have emerged over the past 30 years as researchers have studied teachers’ thinking and decision-making processes in the dynamic flow of teaching events and practices (Darling-Hammond & Sykes, 1999). In this research, variously carried out by cognitive scientists, learning theorists, and teachers themselves, teaching has been shown to be a highly complex undertaking. Teachers carry out curriculum or lesson plans in interaction with their students, who are themselves dynamically responding to teaching and learning opportunities. Through myriad and instantaneous appraisals of student responses to lessons, teachers make decisions and carry out instructional actions that shape students’ opportunities to learn, evaluate students’ performance and capabilities, and orchestrate students’ interactions with one another and class materials, including texts.

Based on this understanding of teaching as interactive thinking and decision making, educators have increasingly begun to recognize the importance of teachers’ abilities to understand the thinking and learning processes of their students. Defining teaching as a complex and responsive interaction with learners, David Cohen and Deborah Ball write that “‘teaching’ is what a teacher does, says, and thinks with her learners, concerning materials and tasks, in a particular social organization of instruction, in environments, over time” (Cohen & Ball, 2000, p. 5, emphasis added). To be effective, teachers need to acquire the capacity to listen to and interpret student thinking and learning processes.

This capacity is particularly important in teaching key domains like literacy, where the challenge of helping the diverse students in modern classrooms develop into proficient, academic readers offers a particularly clear view of the complexity of high-quality teaching. Reading has long been understood as a complex, interactive process of constructing meaning with text. In addition to a cognitive task, reading is an essentially social and communicative task. Yet students in U.S. schools come from a variety of economic, linguistic, cultural, and ethnic backgrounds, bringing significantly different experiences and expectations about how to initiate and sustain conversations, how to interact with teachers and peers, how to identify and solve different types of problems, and how to go about particular reading and writing tasks (Greenleaf, Hull, & Reilly,
In addition, they have experiences with and proficiencies in home and community language and literacies that are generally not tapped for classroom learning (Alvermann, 2002; Jimenez, 2000; Kamil, Intrator, & Kim, 2000; Lee, 1995; Moje, Young, Readance, & Moore, 2000; Moll, 1992).

The variability of reading tasks and the proficiencies needed for successful performance of school literacy tasks adds to this complexity. Proficient reading of particular texts is influenced by the specific contexts and situations in which reading occurs as well as the social functions that it serves (Moje, Dillon, & O'Brien, 2000). All texts are also shaped by specific conventions and structures of language, and proficient reading of all texts therefore demands the knowledge of these conventions to navigate layers of meaning (Cope & Kalantzis, 1993). In addition, reading becomes increasingly specialized through one’s school career, reflecting the broader literate, scientific, or historical conversations that characterize the academic disciplines (Applebee, 1996; Borasi & Seigel, 2000; Lemke, 1990; Wineburg, 1991).

Based on these understandings, literacy researchers have argued that for our diverse learners to successfully carry out academic reading tasks, teachers will need to make explicit the tacit reasoning processes, strategies, and discourse rules that shape successful readers’ and writers’ work (Delpit, 1995; Freedman, Flower, Hull, & Hayes, 1995; Pressley, 1998). To be effective, teachers must have a deep knowledge of the reading process and the demands that subject area texts place on readers. Furthermore, teachers must learn to tap the language and literacy proficiencies that their students display outside the classroom (Moje, Young, Readance, & Moore, 2000). Describing the kind of responsive teaching that is needed to help students grow as readers beyond the early grades, Alvermann et al. (in press) write, “This teaching involves interactive responses between teachers and students—a process where teachers actively listen as their students express what they know and how they know it, and where teachers help students when they are confused.”

The Need to Build Teacher Capacity for Responsive Teaching

Given this conception of teaching as responsive and interactive, a consensus among educators has been growing as to what constitutes high-quality professional development (Guskey & Huberman,
1996; Sparks & Hirsch, 1997). Professional development is recognized as high quality if it engages teachers as learners over time, offers teachers the resources necessary to gain skill and knowledge, creates opportunities for teachers to reflect on their teaching and their students’ learning, and recognizes (as well as builds) teachers’ expertise. Inquiry methods are thought to be a particularly promising way to build teachers’ understanding of the learning issues facing students in the classroom (Shulman, 1986). To effectively teach a variety of learners, many scholars of teaching argue that teachers should take a stance of inquiry toward their own teaching because such a stance offers a way of actively learning while teaching (Ball & Cohen, 1999). To these theorists, high-quality professional development engages teachers in inquiry modes of learning—“reading” students to know more about what they are thinking and learning, examining longstanding beliefs and assumptions about learning, and gaining a repertoire of teaching practice that enables teachers to anticipate the many likely responses students will have to particular assignments and classroom situations.

Yet traditional pedagogies of teacher professional development transmit ideas and conceptions stemming from research in reading to teachers in a delivery mode, focusing much of the professional development time on specific instructional techniques. These traditional pedagogies may build declarative knowledge, knowing about reading. However, remaining as they do on the outside of reading and merely referring to reading activity rather than taking place within or alongside reading activity, these traditional methods cannot build the kind of situated and generative understandings of the domain that can guide the moment-by-moment actions that teachers take in the classroom. Similarly, training focused on helping teachers to carry out instructional techniques alone does not, in its typical form, offer teachers practice in addressing the problems that are likely to come up in response to real students carrying out real reading tasks.

Similarly, because diversity is the norm in our communities, schools, and classrooms, it is necessary but not sufficient for teachers to know about particular cultural, linguistic, or socioeconomic groups of students. Teachers will also need to know how to tap into the resources that all students bring into the classroom, to learn from students how to best guide their learning (Cazden & Mehan, 1989; Lee, 1995). To help all students succeed with academic tasks, teachers must be able to help students from all backgrounds build from the familiar to the unfamiliar, from the known boundaries of their culturally shaped, everyday lives to the unknown terrain of broader academic and scientific and civic participation. To do this,
teachers will need new conceptions of learners—specifically, conceptions of students as strategic and resourceful theory builders—as well as ways of learning from the students in their classrooms in order to guide students responsively toward more proficient, engaged, academic reading. To develop this generative conception of students and this kind of navigational capacity, middle and high school teachers need greater access to student thinking, supportive tools and procedures for inquiring into student thinking and reading, and guided practice conducting these inquiries and linking them to instructional decision making.

To develop a rich and generative repertoire of classroom practice, teachers also need access to experientially rich demonstrations of specific teaching approaches, with opportunities to make connections between these approaches and their own understandings of the domain, of student learning, and of their own teaching goals and approaches. They need access to one another through a professional dialogue about teaching and classroom lesson design that is linked to the broader enterprise of helping all students to develop as readers. This collaborative work in the professional development community sets a purpose and goal for individual teachers' investigation of and engagement in new practices. Teachers need encouragement to take risks and experiment in the classroom, to approach their own teaching practice and the teaching practice of their peers as an inquiry into instructional purposes, actions, and outcomes. To approach teaching as an inquiry, they need frequent opportunities to reflect on their classroom teaching with the collegial support of their peers and knowledgeable professional development facilitators.

We cannot mandate the kind of insightful and responsive teaching that researchers have described as effective, high-quality teaching for today's students; we can only invest in developing teachers' capacities to carry out the complex actions that such high-quality teaching demands. Also, given the many demands on teachers' time and attention, we have the obligation to work as strategically and effectively as possible in developing these capacities. To do so, those of us responsible for teacher professional learning must turn our collective attention to the task of designing effective learning environments for teachers. Such learning environments will provide strategic opportunities, tools, resources, and collaborations to assist teachers in developing the key capacities necessary for teaching for understanding in the complexity of modern classrooms.

The professional development approach we describe in this chapter is grounded in these understandings. Our inquiry methods are designed to assist teachers in developing generative knowledge of
academic reading, insightful responses to students' thinking and reading, and an effective classroom repertoire of comprehension strategy instruction. In contrast to traditional training approaches, the strategic opportunities we give teachers to experience and inquire into reading and student thinking help teachers to build not only their knowledge about reading—the concepts and linguistic labels deriving from the work of reading researchers—but also the ability to anticipate problems that may occur and to draw on their own and their peers' know-how when approaching texts and literacy tasks with their diverse students.

We take teachers' and students' convictions about reading and the ways they approach reading tasks as a starting place for inquiry. Responding to "these kids can't, don't, or won't read," we ask, "What do we mean when we say 'these kids can't read'? What do we mean by 'reading'? What do students actually do when faced with the reading tasks they encounter in school? What experiences, knowledge, and resources do they bring to their reading? What do we do when we read challenging texts? What do we know and do as readers that we can use instructionally in the classroom? What are some instructional practices we can adopt or develop to build on students' strengths and draw on our own experience as readers to help students develop into strategic, independent readers of a variety of texts?"

These inquiries are supported by specific tools and protocols designed to situate and support teachers' thinking in its context of use—that is, in the complexities and challenges of reading academic materials and interpreting student responses to academic reading tasks. Through a variety of strategically designed inquiries, teachers practice the actual thinking, interpretive work, and instructional decision making that they must do in the classroom, thereby building critical capacities for teaching. Over time, teachers develop knowledge about reading and student learning that is deeply grounded in experience and that can be drawn upon in responding to students and texts in the dynamic activity of teaching. In the sections that follow, we describe the inquiry activities that we continue to design to build teachers' capacity to apprentice young people to the advanced literacies of the disciplines.

**Inquiry Designs for Building Teachers' Generative Knowledge of Reading**

This inquiry, which we call "capturing our reading processes," is one of many ways that we routinely engage teachers in reading challenging texts and in surfacing and sharing—and often
developing—their knowledge and strategic capacities as readers. Imagine this scenario: A diverse group of urban middle and high school teachers is gathered around conference tables in interdisciplinary school teams, silently reading the first two paragraphs of *Father's Butterflies* by Vladimir Nabokov. We chose this fictional memoir of a Russian childhood steeped in the study and classification of butterflies to present English-speaking readers with particular challenges. Liberally sprinkled with Latin genus and species names as well as French, German, and Russian expressions, it demands that the reader engage any and all word and language analysis skills at his or her disposal. Moreover, Nabokov's densely layered sentences, with their embedded parenthetical remarks and dependent clauses, challenge the prose reading fluency and sentence-processing capacity of every English reader we've met. The topic *lepidopterology* (the study of butterflies), though familiar to some, is usually obscure enough to most of the teachers in the room to present them with background knowledge and conceptual challenges. In our years of using this text with teachers, they have variously experienced Nabokov's tone as comic, pedantic, obsessive, reflective, and arrogant. Entering this text can therefore present, for various readers, considerable affective challenges as well.

After reading the introductory paragraphs, the teachers are invited to write in response to the following questions: What did you do while you were reading to make sense of this text? Even if you were unaware of it at the time, what comprehension strategies did you use? What comprehension problems did you encounter? What comprehension problems still remain? The teachers write for several minutes but soon begin to talk in low voices to one another, intrigued with the reading experience they have just had. They want to know, “Did you understand this? Could you figure out what he’s trying to get across?” At this point, the professional development facilitator asks for a few responses to the writing prompts in order to model an inquiry conversation aimed at getting readers to share not only *what* they did to make sense of *Father's Butterflies* but *why* they were moved to do so, how they carried these various strategies out, and the results of their strategic actions.

One reader offers, “I got to the end of the first sentence and realized I had no idea what I had read. I had to go back and reread it, taking out all the stuff in parentheses and all the parts of the sentence in between the commas. Then, once I got the core idea of the sentence, I could fill the detail back in.” “Why did you omit those particular parts of the sentence?” the facilitator inquires. “Because I guess I know that what is in parentheses, or between commas, is usually detail or an illustration of an idea. I needed to find
the heart of the sentence first, and all the detail was getting in the way.” “That seems like important knowledge you bring to your reading. Did it help?” the facilitator presses. “Oh yeah. I got the idea, and I even got a sense of the rhythm of Nabokov’s writing. That helped me as I went on with the piece.”

After a few of these interactions, the facilitator encourages teachers to converse in small groups, sharing their problem-solving processes and probing more deeply into one another’s reading. In each group, a recorder is charged with capturing the variety of approaches taken by the various readers on poster-size paper. Later the groups will share their work publicly, and a core set of strategies along with the variety of individual approaches to reading—the wonderful and particular knowledge and experiences, the sheer inventive strategic capacity of readers in the group—will surface, to everyone’s interest and amazement. Teachers will turn to colleagues across the room with curiosity: “You mean you really saw that image when you were reading that passage? What brought that to mind?” “How did you know this was a memoir? What were the cues? How come I didn’t see that?” “When you decided that Nabokov was trying to earn his emotionally distant father’s attention, how did that affect you? Did you reread it from the beginning with that idea in mind?” “As a science teacher, did you find this easy to understand? You mean you really struggled as much as I did? Why?”

Frequently, problems of motivation and engagement emerge. Teachers will confess that they were tempted to put the text aside because they were not interested in it or because they found Nabokov’s tone insulting. Alternatively, someone will find Nabokov’s apparent arrogance a personal challenge and engage in a spirited debate with the text. Almost always, after a good deal of conversation focused on strategy use, a brave soul will reveal that he was worried that the others were reading the piece easily while he struggled with it, and he feared that his own lack of reading proficiency or knowledge would be exposed to his colleagues. Many heads will nod, revealing teachers’ secret fears of exposure. The parallels to student reading experiences in school become a felt presence in the room.

We have adapted and designed a variety of inquiries to surface and analyze reading processes with various texts—routines for thinking aloud while reading, for talking to (interacting conversationally with) the text, for keeping dual- and triple-entry journals reflecting on reading processes as well as texts, for surfacing and analyzing the knowledge demands of texts, and for identifying the interpretive practices at play when readers steeped in various
disciplines approach a text. (Many of these inquiry processes are described in chapter 9 of Schoenbach et al., 1999.) Over several sessions, teachers will have opportunities to carry out reading-process inquiries and analyses in subject area groups, working to surface the particular mental habits that an informed reader needs to develop in one's own discipline. In addition, teachers will often work across subject areas to identify the many ways that a skillful, academic reader needs to approach various reading tasks and materials. In the company of a naive reader of science from another subject area, for example, science teachers can begin to see the important role that only they can play in guiding students' science reading in more purposeful and strategic directions. These inquiries into challenging reading offer teachers practice in carrying out the very processes that they can and should promote in the classroom to support students' reading engagement and growth toward more proficient academic reading. These inquiry practices can also build key capacities for generative, responsive teaching of reading.

Building Richer Conceptions of Reading: Making the Invisible Visible (and Developing a Language for Talking About It)

As college graduates, most middle and high school teachers are proficient readers of many types of texts, even if they find particular texts challenging. However, many of these teachers believe that they cannot help students with reading because they are not reading specialists. Few middle and high school teachers see their own abilities to read subject area texts as a powerful resource for helping students to approach these texts independently, confidently, and successfully. Because most teachers have not thought much about the mental processes by which they make sense of texts in their fields, this knowledge—embedded in their own experiences as readers—is invisible and therefore unavailable to them and to their students. One very important reason, then, to engage teachers in collaborative inquiries into their own reading processes with challenging texts is that helping teachers to become more aware of the literacy proficiencies they bring to their subject area can open up powerful resources for students' learning in the classroom (Graves, 1990; Vacca, 2002). Working collaboratively with one another and with knowledgeable facilitators of these inquiries, teachers develop not only an awareness of their own reading processes but also a language for talking about their thinking and problem solving with others. They can draw on these resources to model their own strategic approaches to texts for their students, to name the reading strategies they see students using, and to facilitate students' acquisition of these strategies.
Building Empathy and Engagement: Acknowledging That All Readers Struggle and the Struggle Can Be Worthwhile

As busy adults and proficient readers, few middle or high school teachers regularly read texts that challenge and stretch their strategic capacities. Like many adults, they read in familiar genres and generally encounter ideas and concepts with which they are already familiar. Regular opportunities to grapple with challenging reading materials helps to build teachers’ appreciation for the difficulties that students face as readers. When teachers feel insecure with their colleagues because they read at a slower pace or have less experience reading particular kinds of materials than others, they readily recall and empathize with the students in their own classrooms. They begin to see that reading presents students not only with cognitive challenges but also with social ones. Experiencing challenge, becoming “struggling readers” themselves as they read, and benefiting from the social resources they encounter as they inquire with colleagues over time, teachers begin to recognize the importance of creating social support for students’ reading in their classrooms. They eagerly engage in conversations about how to turn students’ comprehension problems into instructional assets for the whole class. They share ways that they can work to convince students that all readers struggle to construct meaning with challenging materials like their course texts. At the same time, teachers often experience the exuberance that comes along with tackling a difficult text or a new subject. They are intellectually stimulated and recall their own love of learning. They come to understand that challenging, academic reading unavoidably entails strategic problem solving and that effort spent rereading and marshaling strategic resources pays off in increased comprehension, a lesson they become eager to help their students learn. They become sensitive to the need to help adolescents save face and tolerate ambiguity while also engaging in the vigorous but stimulating work of reading and learning.

Building Support: Fostering the Metacognitive Conversation Among Students

For some time educators have known that students learn best when they have opportunities to talk about their ideas and collaborate with others (NICHD, 2000; Snow, 2002). Researchers have demonstrated measurable effects on student achievement when teachers engage students in only a modest amount of increased classroom conversation (Alvermann et al., 2002; Applebee, 1996; Nystrand & Gamoran, 1991). Talk about how we read in subject areas has been
linked to increases in students' reading achievement (Duffy et al., 1994; Fielding & Pearson, 1994). Even so, this kind of talk is rare in middle and high school classrooms. In the Reading Apprenticeship framework of adolescent literacy development, the metacognitive conversation is at the heart of the work that teachers and students do together as they engage in reading and inquiry; how we read and why we read accompany classroom conversations about what we read. In reading process inquiries in the professional development setting, teachers gain experience participating in metacognitive conversations in which they make their own thinking processes evident to others and also have access to the ways their colleagues think and solve comprehension problems with texts. Teachers can draw on this experience as they begin to promote and support metacognitive conversations in their own classrooms. As teachers learn to engage in reading-process analyses and metacognitive conversations in professional development sessions over time, they take increased responsibility for facilitating these inquiries with their colleagues. To further assist teachers in fostering metacognitive conversations in their own classrooms, we may ask them to pair up and practice how they might introduce and facilitate a reading-process inquiry with their students, using their course texts as reading materials during professional development sessions.

*Inquiry Designs for Developing Teachers' Insight Into Student Learning*

To help teachers develop insight into students' struggles with texts, we have designed a variety of inquiries into students' thinking and reading. These inquiries illuminate students' thinking during the process of reading and comprehending and give teachers practice interpreting and responding to students' attempts to make meaning with challenging texts. A key resource for these inquiries is a set of literacy learning cases, drawn from our early work with teachers to carry out detailed case studies of student readers and to characterize the resources and instructional needs these students brought to their reading. The student literacy learning case materials—video and text-based "close-ups" of ninth-grade students struggling with and making sense of various texts—give teachers a chance to hear individual students talking about their reading histories and habits and to see students reading a variety of academic and recreational texts and responding to an interviewer's questions about their reading.
These cases not only give teachers clarity into students’ reading missteps and challenges but also offer a closer look at the strengths and theories about reading that students use to make sense of school texts and reading practices. They are based on our prior work to develop a set of literacy learning cases for teacher professional development as part of a research study of literacy learners in post-secondary settings (Greenleaf et al., 1994). Because these materials are focused on the student and on learning rather than on the teacher’s perceptions of teaching events, they are formatted as intellectual puzzles rather than as narratives. Instead of offering a completed analysis of student reading, these case materials offer teachers selected data—excerpts of student’s videotaped reading performances, transcripts from literacy history interviews, descriptions of classroom contexts, and teachers’ reflections on the case study student—to analyze and interpret.

In many of the cases, teachers see students read expository texts, such as magazine articles about popular sports or music figures, that students have chosen for recreational reading. By analyzing the reading strategies and strengths that students bring to their recreational expository reading, teachers are able to generate ideas for building on these strengths to help students understand the expository texts assigned in school. Across the various cases, teachers have the opportunity to see that students approach and read different texts quite differently, that reading is shaped by many situational factors, and that students’ reading of one text will not demonstrate the full range of reading strategies and skills they may actually have at their disposal. The case materials are designed to present contrasting views of students’ reading performances in different circumstances. They are crafted with the aim of unsettling teachers’ first impressions of students, driving them to look more deeply at how students are thinking and what resources they are bringing to reading tasks, and helping them to recognize what Rose (1989) has called “the incipient excellence” that characterizes many underperforming students in our classrooms.

One literacy learning case, for example, features Mario, a Nicaraguan immigrant, reading “True Love,” a short story by Isaac Asimov, as well as an expository article from Scholastic magazine for youth on the NAFTA debates, which were occurring at the time of the 1996 presidential election, when Mario was interviewed. In a literacy history interview excerpted for the case, Mario talks about the reading he does outside school in his native language—poetry by Ruben Dario, which he discusses with a Nicaraguan friend, and expository texts about Nicaragua, which his father proudly provides and discusses with him. In this interview, Mario also worries
aloud about being placed back into an ESL class after being in regular English because of the impact this may have on his future eligibility for college and the disappointment he fears his father may feel should he find out about Mario's ESL placement. As he reads the two school texts, Mario shows greater facility in both oral reading and interpretation with Azimov's short story than he does with the Scholastic article about NAFTA. In response to the interviewer's questions about any instruction he may have had with expository texts, Mario reveals that he has had virtually no opportunities to read in his world geography course or other social studies courses. Mario's unfamiliarity with English exposition and with the world knowledge that the NAFTA piece demands is palpable, along with his missing opportunities to learn to grapple with such texts. The world seems to close in around this young man, narrowing the opportunities he desires for himself. This case gives teachers the opportunity to elaborate their concepts about background knowledge and reading fluency, coming to understand how familiarity with specific text features influence their own and students' fluency with different types of text, and how students' opportunities to read in school have profound affects on their educational achievement and life chances.

In all of the literacy learning cases, diverse urban students share metacognitive insights into their thinking and reading processes. In our experience over the years of this work, teachers almost uniformly find this metacognitive talk intriguing. Many are surprised by the ninth-grade students' capacity to be reflective and want to begin tapping this potential resource in their own classrooms. In the process of interpreting students' reading performance and talk about reading, teachers express their own conceptions of reading and student ability. This provides an excellent opportunity to engage, challenge, and enrich teachers' theories, but only if we can create a professional conversation that is both supportive and rigorous. To support individual teachers in sharing and reflecting on these theories, to generate norms for collegial discussion, and to develop the habits of using evidence from the case data to support their claims and of exploring multiple possible interpretations of these data, we have developed a set of conversational routines, or protocols, for case inquiry.

Looking closely at an individual student's reading performance is unfamiliar territory for middle and high school teachers, who see 100 to 160 students per day in short class periods. These teachers need a variety of types of support to learn how to look productively at literacy learning case materials. First, if teachers are to appreciate the complexity of reading literacy and to be able to see
in the case materials the student readers' strengths and accomplishments as well as what students need to learn, teachers must read the texts they will encounter in the case materials, reflecting on their reading processes and looking closely at the kinds of knowledge and strategic comprehension these texts demand of readers. This is critical; without teachers reading and closely analyzing the reading, the case inquiries stay at a very global and unproductive level. At the same time, carrying out what is essentially a reading task analysis gives teachers practice in viewing the text from the point of view of inexperienced learners and in seeing in it the possibilities for instruction.

Teachers also need practice perceiving the assets students bring to reading, breaking a well-ingrained if functional habit of perceiving only students' deficits. Taking an inquiry stance toward student performance in order to see how students are making sense of school tasks runs counter to a very strong, existing teacher schema for "reading" student performance, particularly in the context of professional development enterprises. Generally, teachers view student performance in such settings either as examples of learning problems or as models of instructional interventions, as either problems or their solutions. We try to break this framework.

Through a deliberate and facilitated process of making observations from the case data (evidence) and separating these observations from their possible interpretations, we help groups of teachers to surface, articulate, and explore their assumptions about the meaning of student reading performances. We develop this capacity further by asking teachers to identify the strengths these students bring to their reading in the case materials, explicitly focusing on recognizing students' assets as well as instructional needs and goals toward which teachers might productively work. Collaboratively, teachers work on designing classroom applications that build from students' strengths to meet their learning needs. In various ways, including role-playing, planning lessons, and writing reflections, we ask teachers to practice drawing insights from these cases and making connections between these individual student literacy cases and their own classrooms and students. These inquiries into individual students' reading performances build teachers' capacities to support the reading development of their students in a number of ways.
Developing More Generous Conceptions of Students: Accessing and Interpreting Diverse Students’ Reading and Thinking Processes

In diverse urban classrooms, where teachers work with students from multiple cultural, linguistic, and socioeconomic backgrounds, teachers need to be able to respond in supportive and productive ways to students’ very diverse conceptions of reading, subject matter, and learning. Apprenticing students into complex mental activities like discipline-based reading requires teachers to access student thinking and to have considerable insight into the competencies, misconceptions, and missteps that underlie students’ literacy performances. To teach in response to students’ thinking, teachers first need access to the ways in which students are making sense of their experiences in class, which is why the metacognitive conversation—with its various ways of routinely engaging teachers and students in talk about thinking and reading processes—is at the center of our instructional model. In addition, teachers need greater insight into students’ thinking and reading processes and a deeper understanding of learning and conceptual change.

To foster this deepening of insight, we work in the literacy learning case inquiries to slow down, inform, and often interrupt teachers’ automatic processes of evaluating students and making judgments about their capabilities with little consideration of the strengths and resources students bring to classrooms or of the difficulties that complex texts pose for student comprehension. Participation in these inquiry discussions provides the teachers with the experience and support to closely and critically “read” and explore the possible meanings of student performance on valued literacy tasks. We have seen that these inquiry processes help teachers to develop a more productive alternative to traditional ways of interpreting student reading and talk, basing claims on actual evidence from student performance, informed by teachers’ own experiences and knowledge as readers. These are the very ways of interpreting literacy tasks, texts, and student performances that teachers need in the classroom to engage responsively in collaborative inquiry into reading with their students, to demystify academic reading and thinking processes, and to help their students to participate more skillfully in the academic literacies that are at the heart of schooling.
Developing Pedagogical Content Knowledge: Reasoning About Sources of Reading Difficulty and the Challenges That Subject Area Reading Poses for Students

Engaging teachers in experiencing and analyzing the reading processes, texts, and reading tasks through literacy learning case inquiries assists subject area teachers to teach reading in ways that are consonant with their disciplinary teaching. They begin to read their texts with the anticipation of the possible sources of student difficulty as well as the opportunities that these texts pose for student learning and reading development. Building this kind of understanding, which Lee Shulman (1986) called “pedagogical content knowledge,” is an explicit goal of the case inquiry process. Teachers build pedagogical content knowledge about reading with inquiry into their own reading processes and with close attention to the demands that different kinds of texts make on them as readers. Close attention to the strengths and assets as well as the learning needs of the case study students then leads to a productive exploration of the ways in which promising classroom teaching approaches can build on student abilities to meet instructional needs. The case inquiry process and protocols resulting from this design work thus comprise a broad set of activities that link teachers’ inquiry into their own reading processes, their inquiry into texts, and their inquiry into student reading processes to their ongoing classroom work.

Designing New Tools to Support Teachers in Accessing and Reasoning About Student Reading and Thinking Processes

As teachers’ work in Reading Apprenticeship has developed over the past several years, we have designed other inquiry processes, in addition to the literacy learning cases, to offer teachers multiple opportunities to practice interpreting student thinking and reading and to further consolidate the links between these inquiries and their work in the classroom. In our professional development networks, as teachers begin to generate metacognitive conversations in their own classrooms, they routinely bring student work back to the professional development sessions to share with their colleagues. Inquiry questions support these opportunities to look closely at student work from the teachers’ own classrooms. Like the literacy learning case inquiry process, opportunities to explore student work begin with teachers actually trying out the reading and thinking tasks assigned to students. They respond to prompts that focus their attention on the work that students have been asked to accomplish: What reading knowledge or strategies does the student need to accomplish this task? What content area knowledge
or strategies does the student need to accomplish this task? What other knowledge or strategies does the student need, such as the ability to participate effectively in a small-group discussion, the ability to collaborate on a project, or the ability to provide feedback to another's work?

Based on their own experiences and insights into the demands of the tasks, teachers then explore the samples of student work. Some questions that guide this exploration and discussion are: What can we learn about the student's reading from this work sample? What knowledge, strategies, and schema is the student bringing to this task? What can we learn about the student's content area learning from this work sample? What knowledge, strategies, and schema in the content area is the student bringing to this task? What additional instructional support might students need in order to be more successful with this task? What will we need to do to apprentice students into important ways of thinking and doing discipline-based work? Finally, teachers are asked to reflect on their own learning from this opportunity to explore student work, expressing any new insights into student thinking and learning they may have gained and considering instructional implications for their work in the classroom. With supported opportunities to explore, interpret, and thereby develop insight into their own students' work with classroom texts, teachers continue to grow in their capacity to teach in response to student thinking.

Recently we have also begun to develop videos of classrooms where teachers are integrating Reading Apprenticeship approaches into their ongoing subject area teaching. To support a focus on student thinking and the metacognitive conversation, we are developing accompanying prompts and roles for teachers to take as they view these videotapes. Although there are many competing demands on teachers' attention in these classroom videos, we ask teachers to focus on two things: (a) What do you notice about students' reading or talk about reading? and (b) What do you notice about the supports for students' reading or talk about reading in this classroom? The videos offer many opportunities to see students engaged in reading or conversation. This way of viewing classroom videos underscores our focus on accessing, interpreting, and responding to student thinking as a way of supporting students' development as readers.
Inquiry Designs for Building Teachers’ Capacity to Make Effective Use of Comprehension Strategy Instruction

There is ample evidence, given the long history of reading comprehension research, that students benefit from explicit instruction in comprehension strategies (Pressley, 1998; Vacca, 2002). Yet evidence is also accumulating that the social environment of the classroom—whether and to what extent teachers and students collaborate on comprehending course texts, rather than the type of comprehension strategy instruction that students are given, per se—mediates students’ engagement with text and subsequent strategy use (Guthrie & Wigfield, 2000; Kucan & Beck, 1997; Moore, 1996; Rosenshine & Meister, 1994). Our work with teachers aims at helping them to develop a collaborative classroom environment in which metacognitive conversations about reading experiences can become routine and in which students have extensive opportunities to read with the support of the teacher and their peers. In such classrooms, instructional techniques for explicitly teaching comprehension strategies that have high leverage for developing students’ conceptions and approaches to reading become valuable tools, for teachers and students alike.

Building Teachers’ Capacity to Support and Deepen the Metacognitive Conversation

In the Reading Apprenticeship instructional model, metacognitive conversation is a means by which teachers gain access to students’ thinking in the classroom, a means by which they can begin to intentionally draw on the knowledge and experiences that students are bringing to their understanding of classroom activities. This routine practice, in turn, helps students to gain access to the knowledge and thinking of their teachers and peers. They begin to see that the knowledge and strategic resources they develop outside the classroom have a valuable place in school learning (Jordan, Jensen, & Greenleaf, 2001). With our teacher colleagues, we have been developing and adapting tools that help teachers to routinely foster metacognitive conversations among their students, based on the reading process inquiries we experience together in the professional development setting.

One of the tools that helps teachers to take these inquiry processes into the classroom is recording and displaying—and over time updating, evaluating, and modifying—Reading Strategies
Charts based on “capturing the reading processes” of the members of the class (including the teacher) during reading tasks. Think-aloud bookmarks that offer sentence stems to prompt particular mental moves (Davey, 1983) support students as they practice thinking aloud while reading a section of a text, and teachers can alter these bookmarks over time to focus students’ practice on new problem-solving strategies. Teacher colleagues have also developed various metacognitive prompts for reading logs and journals that accompany students’ reading experiences (Schoenbach et al., 1999, p. 68). These prompts, along with material resources such as self-stick notes or photocopied excerpts, are important supports for teachers in developing students’ mental engagement through other metacognitive routines like “talking to the text” (Jordan et al., 2001).

In professional development sessions, we make time for teachers to share the adaptive classroom routines they integrate into their work with subject area curriculum materials, focusing on routine ways of asking how members of the classroom community are making sense of these materials as well as what sense they are making. We encourage teachers to anticipate and plan the ways they will scaffold, sequence, and deepen these metacognitive routines over time in order to shape students’ thinking while reading subject area texts in more productive and discipline-specific ways. In these professional communities, teachers engage in learning and further developing routine ways to share their own reading processes with their students and to both draw on and develop their students’ resourceful problem solving with texts as part of their subject area teaching.

Building Teachers’ Capacity to Integrate Comprehension Strategy Instruction Into Subject-Area Reading

In professional development sessions, we offer teachers many opportunities to develop firsthand experience using instructional techniques such as ReQuest (Manzo, 1969), Question-Answer Relationships (Raphael, 1982), Reciprocal Teaching (Palincsar & Brown, 1989), as well as strategies such as visualizing, summarizing, predicting, clarifying text meanings, and making connections (drawing on prior knowledge). We engage teachers in these strategic approaches as we read modern fiction and nonfiction materials together. Encountering these approaches to strategy instruction while working in groups to comprehend an essay from Scientific American or Atlantic Monthly gives teachers an opportunity to assess for themselves how these strategies work to support the group’s learning. Teachers learn these strategic approaches in the very
context in which they will need to apply them, while working collaboratively with other readers to construct meaning with texts.

In doing so, they deepen their knowledge about the nuances of strategy application and use. For example, by exploring the use of Question-Answer Relationships (QAR) with challenging texts, teachers discover that categorizing a question as one of Raphael's (1982) question types—"right there," "putting it together," "text and me," or "on my own"—can be difficult. In fact, whether a question can be labeled "text and me" depends on the reader's storehouse of knowledge and experience. Working through these issues as they read together allows teachers to stumble on and think through problems that emerge in the practice of strategy instruction. They gain confidence as well as firsthand knowledge of the processes involved.

As teachers gain experience with these strategies, we encourage them to exercise their professional judgment about how well particular strategies serve their instructional ends. Teachers may respond to this invitation by adapting question frames to focus on key ways of thinking in particular disciplines or by selecting particular strategies for their utility in helping students to acquire particular thinking habits. For example, visualizing structures, processes, and interactions is important to learning in many branches of science. Focusing students' attention on creating mental images, drawing structures or processes, or walking through an interaction between objects can have high payoffs in increased comprehension when carried out with science reading. Similarly, helping students to ask discipline-based questions—for instance, "Is there a pattern here?" when exploring a math problem or graph, or "From whose perspective is this written?" when exploring a history text or artifact—may help students into discipline-based ways of thinking better than more generic questions focusing on who, what, when, where, and why. From the beginning, then, as teachers practice using comprehension strategies to support their own reading in professional development sessions, we invite them to adaptively integrate these strategies into their subject area instruction.

Ultimately, these invitations to inquire into the nature of reading and reading processes, into students' thinking and theory making, and into specific instructional approaches help teachers to begin to approach their own teaching as inquiry. Cycles of implementation, reflection, and refinement of teaching occur as teachers try out new approaches in the classroom and return to discuss their experience with their colleagues and to engage in additional inquiries and learning experiences. As teachers create metacognitive conversations in their own classrooms, they bring their work back to
professional development sessions to share. They are asked frequently to reflect on how things are going in their classrooms, to use evidence from their classrooms to gauge the quality of student reading and thinking, and to anticipate their next instructional steps. Teaching begins to resemble a cycle of inquiry as teachers innovate, reflect, and refine their practices. This type of long-term recursive learning is a key feature of high-quality professional development that enables teachers to continue to learn in and from their own teaching practice.

Evidence Linking Teacher Knowledge Growth, Classroom Change, and Student Achievement

Instructional capacity is partly a function of what teachers know students are capable of doing and what teachers know they are professionally capable of doing with students.... Every student and curriculum is a bundle of possibilities, and teachers whose perceptions have been more finely honed to see those possibilities, and who know more about how to take advantage of them, will be more effective. (Cohen & Ball, 1999, pp. 7–8)

Teaching takes place on the ‘outside,’ and learning mostly goes on ‘inside.’ So much professional development is focused on the outside, yet it needs to be focused on the inside. (Participant, National Institute for Reading Apprenticeship, September 2002)

We value the considerable intelligence and resourcefulness of the young people we serve, and we aim to empower these students to take on more powerful, participatory, literate identities in their various worlds of school, community, and work. Because of this mission, throughout our history as a project we have continually gathered evidence to measure the impact of our inquiry-based professional development practices on teachers’ knowledge, their classroom practices, and their students’ learning. In one multiyear study of subject area teachers who participated in a professional development network, we examined the impact of these inquiry methods on 29 participating teachers’ knowledge growth and change (Greenleaf & Schoenbach, 2001). We carried out close case studies tracing the changing thinking, instructional planning, and classroom practice of eight of these teachers over a period of two years. Data included interviews with teachers at the beginning and end of each year; teachers’ written reflections and evaluations; audio- and videotapes of teachers engaging in reading process analysis, text analysis, analysis of students’ reading processes, and collegial conversations about teaching practice at professional development
meetings; and, finally, classroom artifacts such as lesson plans, assignments, and student work. Growth in students’ reading engagement and comprehension was measured through pre- and postsurveys and administration of a standardized test of reading comprehension at the beginning and end of the year.

In this study, we found that participating teachers became more aware of the complex ways in which they themselves made sense of a variety of texts, and they gained new appreciation for the reading difficulties that students may face. They also developed a language for talking about invisible comprehension practices, which are at times difficult to articulate. They came to understand, by reading in the company of colleagues who may approach texts very differently, that their own ways of reading are learned conventions that can and must be taught to students. In turn, these changes helped teachers to create classroom environments that were characterized by high student engagement and self-direction, high expectations for student performance, frequent collaboration between teachers and students, and high accountability on the part of both teachers and students for student learning. Moreover, this pedagogy was motivated from within by teachers who now understood what reading entails and what texts demand, and who had the means to assist students in gaining this kind of strategic knowledge for themselves.

Students in these classrooms came to see reading as an active and strategic process. Taken as a group, students in these urban classrooms, who were behind their peers nationally, gained substantially more than a year’s expected growth on a standardized measure of reading comprehension (Greenleaf & Schoenbach, 2001). We continue to study the impact of our inquiry methods of professional development on teacher and student learning, and have recently undertaken studies of classroom teaching across the curriculum with teacher partners who are involved in ongoing professional development with us. We regularly report our findings in professional journals (Greenleaf et al., 2001) as well as on our Web site (www.wested.org/stratlit). These studies give us confidence that the inquiry learning we offer teachers develops a repository of experiences that informs and transforms teachers’ classroom practices. This learning is generative; the experiences teachers have and the kinds of thinking teachers practice together in these inquiries continue to enrich their thinking and inform their practices in the classroom beyond the professional development setting and over time.
Toward the Responsive Teaching of Middle and High School Teachers: Recommendations for Strategic Professional Development Design

We recognize that teachers will need a great deal of preparation for the kind of responsive teaching we envision, not least of which will be deep academic preparation in their disciplines. We offer these strategic designs for inquiry-based professional development as one contribution to the capacity building that is needed for high-quality teaching in our nation’s schools. Based on our experience, and drawing on the work of others who have contributed to our way of working, we can highlight some principles to guide the development of effective teacher professional development in reading. In addition to the qualities of effective professional development already recognized by the field—that it engages teachers as learners over time, offers teachers the resources necessary to gain skill and knowledge, creates opportunities for teachers to reflect on their teaching and their students’ learning, and recognizes (as well as builds) teachers’ expertise—we offer the following. Professional development that effectively builds teachers’ capacity to teach reading in response to student thinking does the following:

1. Takes teachers’ convictions (about themselves, the domain of reading, and students) and perceived needs (for quick solutions) as a starting point for inquiry

2. Draws on teachers’ expertise and prior experiences to build new understandings and practices

3. Engages teachers strategically in new inquiry experiences from which they can draw in the dynamic of teaching

4. Engages teachers in rigorous reading and metacognitive conversations about reading within and across academic disciplines

5. Focuses teachers’ attention on particular ways of thinking, reading, and interpreting student performance that contribute to high-quality, responsive teaching

6. Provides teachers with frequent practice in thinking in these new ways through multiple inquiry activities, all designed to build these important capacities
7. Provides teachers with practice in carrying out inquiry routines and instructional approaches with complex reading—that is, experience in doing the very things we promote for teaching students to become engaged and strategic readers.

8. Offers teachers multiple ways to encounter the domain of subject area literacy, thereby helping them to build flexible and generative knowledge of strategic teaching and reading.

9. Offers many points of connection to teachers' own classrooms through relevant and various classroom and student examples, including those from teachers' own experiences.

10. Acknowledges teachers as decision makers and builds the capacity for professional judgment through cycles of experiential learning, classroom innovation, and inquiry.

11. Models precisely those rich, collaborative, metacognitive, respectful, and reflective ways of learning that we envision for our nation's youth.

There is increasing evidence that teacher quality matters for student learning and achievement (Darling-Hammond, 2000; Laczko-Kerr & Berliner, 2002). Our studies of inquiry-based professional development for middle and high school subject area teachers demonstrate that with the support of well-designed inquiry activities, teachers are able to make profound changes in their teaching practice. These changes in turn provide powerful new learning opportunities to students that make a difference in student achievement. Through this kind of generative professional development, teachers learn to closely and critically read both their curriculum materials and their students' performances to inform their professional judgment and instructional actions. They develop the means by which to weigh competing ideas about literacy and classroom methodologies and move beyond the eddying currents of debate and mandate to take warranted action in the classroom. They become designers as well as implementers, informed professionals rather than mere conduits for other people's designs and agendas. The ability to educate all children to their highest potential rests on this kind of professionalism. This, rather than training teachers to faithfully reproduce lessons and teaching strategies in the classroom, holds the promise to build the kind of world-class, responsive, and professional teaching force that we so badly need in our nation's schools.
References


The work described in this chapter would not have been possible without the generous support of the Carnegie Corporation of New York, The William and Flora Hewlett Foundation, The Walter S. Johnson Foundation, The W. Clement & Jessie V. Stone Foundation, The Spencer and MacArthur Foundations' Program in Professional Development Research and Documentation, The Stuart Foundations, The Stupinski Family Fund, WestEd, and, of course, the many adolescents, teachers, schools, and districts in the Bay Area and around the country that contributed wisdom and meaning to our work. The statements made and the views expressed, however, are solely the responsibility of the authors.