Shaping Teacher Sensemaking: School Leaders and the Enactment of Reading Policy

CYNTHIA E. COBURN

A growing body of research has emphasized the social processes by which teachers adapt and transform policy as they enact it in their classrooms. Yet little attention has been paid to the role of school leaders in this process. Drawing on sociological theories of sensemaking, this article investigates how principals in two California elementary schools influenced teacher learning about and enactment of changing reading policy. It argues that principals influence teachers' enactment by shaping access to policy ideas, participating in the social process of interpretation and adaptation, and creating substantively different conditions for teacher learning in schools. These actions, in turn, are influenced by principals' understandings about reading instruction and teacher learning.

Keywords: *policy implementation; school leadership; content knowledge*

SINCE THE LATE 1970s, researchers have highlighted the ways that educational policy is reconstructed and reshaped as it is put into place in schools and classrooms (Berman & McLaughlin, 1978; Tyack & Cuban, 1995;

Weatherley & Lipsky, 1977). Early policy researchers attributed this phenomenon to a lack of skill and will on the part of implementers (McLaughlin, 1987; Odden, 1991) or to implementers' attempts to use policy to meet their own goals and agendas (Berman & McLaughlin, 1978; Weatherley & Lipsky, 1977). However, an emerging line of research known as the cognitive approach to policy implementation (Spillane, Reiser, & Reimer, 2002a) understands such reconstruction as a normal part of the social process of teacher learning and change. This research has shown that teachers come to understand new policy ideas through the lens of their preexisting knowledge and practices, often interpreting, adapting, or transforming policy messages as they put them in place (Coburn, 2001a; Guthrie, 1990; Jennings, 1996; Spillane, 1999; Spillane & Jennings, 1997; Spillane et al., 2002a) in a process that is influenced by the social and structural conditions of teachers' workplaces (Coburn, 2001a; Lin, 2000; Siskin, 1994; Spillane, 1999; Spillane et al., 2002a; Yanow, 1996).

To date, however, this line of inquiry has rarely focused on the role of school leadership in this process. In spite of consistent findings that the principal plays a key role in the success or failure of school reform generally (Berman & McLaughlin, 1978; Datnow, Hubbard, & Mehan, 2002; Fullan, 1991; Hall & Hord, 1987; Louis & Miles, 1990; Muncey & McQuillan, 1996), we know little about if or how principals influence teachers in their interpretation and adaptation of instructional policy.

In this article, I take up this challenge. Drawing on sociological theories of sensemaking (Vaughan, 1996; Weick, 1995), research on administrators' content knowledge, and the principal's role in school reform, I investigate how principals in two urban elementary schools in California influenced teacher learning about and enactment of changing reading policy. I pay particular attention to principals' understandings about what constitutes "good" reading instruction, how those understandings influence leadership practices, and how those leadership practices, in turn, shape the micro-processes of teacher interpretation and adaptation. I argue that principals influence teacher sensemaking by shaping access to policy ideas, participating in the social process of meaning making, and creating substantively different conditions for teacher learning. These actions are themselves influenced by principals' knowledge of both instruction and teacher learning. Reading instruction in California provides a fertile context for this study because during the time of the study, California was in the midst of its third major shift in reading policy in two decades. The intensity of this change, as well as the differences in fundamental assumptions about teaching and learning it implied, threw into relief the often subtle processes by which principals influence teachers as they adapt, adopt, and transform reading policy in their classrooms.

THE COGNITIVE APPROACH AND SCHOOL LEADERSHIP

The cognitive approach to policy implementation has tended to focus primarily on the micro-processes that characterize teachers' implementation of instructional policy. Drawing on sociological theories of sensemaking (Vaughan, 1996; Weick, 1995), researchers have argued that how teachers come to understand and enact instructional policy is influenced by prior knowledge, the social context within which they work, and the nature of their connections to the policy or reform message (Coburn, 2001a; Spillane et al., 2002a). Sensemaking theorists argue that school and classroom culture, structure, and routines result, in part, from "micro-momentary actions" by teachers and other actors in the school (Porac, Thomas, & Baden-Fuller, 1989). Action is based on how people notice or select information from the environment, make meaning of that information, and then act on those interpretations, developing culture, social structures, and routines over time (Porac et al., 1989; Weick, 1995). The meaning of information or events—in this case, messages about reading—is not given but is inherently problematic; individuals and groups must actively construct understandings and interpretations. They do so by placing new information into preexisting cognitive frameworks, also called "worldviews" (Porac et al., 1989; Vaughan, 1996; Weick, 1995) or "working knowledge" (Kennedy, 1982) by some theorists. Kennedy (1982) defined working knowledge in the following way:

Working knowledge is the organized body of knowledge that [people] use spontaneously and routinely in the context of their work. It includes the entire array of beliefs, assumptions, interests, and experiences that influence the behavior of individuals at work. It also includes social science knowledge. The term *working*, as used here, has two meanings. First, it means that this is a special domain of knowledge that is relevant to one's job. Second, it means that the knowledge itself is tentative, subject to change as the worker encounters new situations or new evidence. (p. 2, emphasis in original)[1]

Thus, teachers and others draw on their existing working knowledge to interpret new instructional approaches, often reconstructing policy messages in ways that either reinforce preexisting practices or lead to incremental change (Coburn, 2001a; Guthrie, 1990; Jennings, 1996; Shifter & Fosnot, 1993; Smith, 2000; Spillane, 1999; Spillane & Jennings, 1997).

But teacher sensemaking about instructional reforms is not solely an individual matter: It is influenced by patterns of social interaction with colleagues (Coburn, 2001a; Hill, 2001; Spillane, 1999), the conditions for learning in the school (Coburn, 2001a; Vaughan, 1996), and local workplace norms that shape the range of appropriate responses and structure priorities

(Lin, 2000; Siskin, 1994; Vaughan, 1996; Yanow, 1996). Finally, teacher sensemaking is influenced by the nature of teachers' connections to policy messages: their degrees of depth (Coburn, 2004), pervasiveness (Coburn, 2004), specificity (Hill, 2001), and voluntariness (Coburn, 2004).

Far less attention has been paid to the role of school-level administrators in this process. To date, there is only one study that examines school leaders' sensemaking about policy. In a study of principals' responses to accountability policy in Chicago, Spillane and his colleagues (2002) find that, like teachers, school leaders interpret and adapt policy in ways that are influenced by their preexisting understandings and their overlapping social contexts inside and outside of school. In so doing, school leaders shape how district accountability policies unfold in schools in crucial ways. These findings echoed those from earlier inquiries into district administrators' sensemaking that showed that district administrators interpreted and adapted state instructional policies in ways that were influenced by their own understandings about subject matter and appropriate instruction (Spillane, 2000a, 2000b; Spillane & Callahan, 2000). However, this line of research has yet to link school leaders' sensemaking with classroom-level implementation, and evidence linking district administrators' sensemaking about policy to classrooms is weak.[2]

Research on principals' content knowledge provides further evidence that knowledge of specific subjects can influence leadership practices. Researchers have found that principals' content knowledge influences the way they observe classroom practice (Nelson & Sassi, 2000; Nelson, Sassi, & Driscoll, 1999; Nelson, Sassi, & Grant, 2001), provide feedback to teachers (Nelson & Sassi, 2000; Nelson et al., 2001), and structure learning opportunities for faculty (Burch & Spillane, 2003; Nelson et al., 2001). However, these studies have not been done in the context of implementation efforts and thus do not address questions about the role of school leaders' sensemaking in policy implementation. And they do not investigate the connection between leadership practices and teacher interpretation and enactment of reform.

Studies in the broader school change literature, however, suggest that leadership practices are likely to influence teachers' implementation of policy. Research on the principal's role in school reform suggests that principals influence the implementation of instructional reforms by fostering a collaborative work environment (Blase & Blase, 1999; Blase & Kirby, 2000; Little, 1982; Louis & Kruse, 1995; McLaughlin & Talbert, 2001; Murphy, 1994), providing professional development and ongoing information support (Blase & Blase, 1999; Blase & Kirby, 2000; Hall, 1998; Hall & Hord, 1987; Louis & Kruse, 1995; Murphy, 1994), instructional supervision and assistance (Blase & Blase, 1998; Hall, 1998; Hall & Hord, 1987), and monitoring

and evaluation (Hall, 1998; Hall & Hord, 1987; Louis & Miles, 1990; Marsh & Odden, 1990). However, these studies do not make explicit links between these leadership practices and the microprocesses of teacher learning. Thus, we know little about how or why these practices influence change in teachers' classrooms. Furthermore, the studies do not address how school leaders' sensemaking shapes strategic choices in leadership practice.

This study brings these three bodies of literature together to investigate the connections among principals' sensemaking, their leadership practices, and teachers' interpretation and enactment of policy. In so doing, it contributes to the cognitive approach to policy implementation in two ways. First, it builds on and extends initial work on school leaders' sensemaking by linking it with research on school leaders' content knowledge, demonstrating that school leaders' preexisting understandings about reading influence how they come to understand the meaning and implications of reading policy. Second, the study brings school-level leadership more fully into the teacher sensemaking equation by demonstrating how principals draw on these conceptions of policy ideas as they act in ways that shape teachers' sensemaking and ultimately if and how teachers' respond to policy with changes in classroom practice. The study also contributes to studies of school leadership. By providing insight into the mechanisms by which leadership practices influence teacher interpretation and adaptation, the study provides a more nuanced understanding of the conditions under which particular leadership practices provide conditions that are more or less conducive to substantive implementation of instructional reforms.

METHOD

This study uses an embedded, cross-case design (Yin, 1989), as this is a primary strategy of documenting organizational processes as they unfold. I focused on the experiences of principals and teachers in two urban elementary schools in California, examining the ways in which principals influenced teachers' interpretation and enactment of policy messages about reading. Focusing on two schools allowed for the depth of investigation necessary to capture the subtle processes of teacher-principal interaction. Although not generalizable, the in-depth investigation made possible by the small number of cases provides the opportunity to generate new hypotheses or build theory about sets of relationships that would otherwise have remained invisible (Hartley, 1994).

I selected two urban elementary schools that had a self-identified focus on reading instruction and similar student demographics but had principals with very different understandings about reading instruction. These two

Table 1

Demographic Profiles of Stadele Elementary and Baldwin Elementary

	Stadele Elementary	*Baldwin Elementary*
District	West Bay Unified	East Bay Unified
Number of students	692	524
Student race/ethnicity	43.4% Asian	2.9% Asian
	28.5% Latino	11.5% Latino
	12.9% African American	82.8% African American
	12.3% Filipino	0.4% Filipino
	2.9% White	1.3% White
	0.1% Pacific Islander	0.2% Pacific Islander
Percentage of students who qualify for free/reduced-price lunch	67.0	88.9
Percentage who are English-language learners	47.8	14.3
Number of certified teachers	32	27
Teacher race/ethnicity	56% White	36% White
	24% Asian	7% Asian
	10% African American	36% African American
	5% Filipino	4% Filipino
	5% Latino	14% Latino
		4% American Indian
Ranking on California Academic Performance Index (1998-1999)	6 (out of 10) for all schools	2 (out of 10) for all schools
	7 (out of 10) for similar schools	7 (out of 10) for similar schools

Source: Ed-Data 1998-1999 (http://www.ed-data.k12.ca.us).

schools—Stadele Elementary and Baldwin Elementary[3]—serve highly diverse student populations with substantial portions of students living in poverty. See Table 1 for demographic information on the two schools. Two veteran school principals led the schools. Stadele Elementary was led by Catherine Tanaka. In her first principalship, Catherine Tanaka had been at the school for 5 years at the time of the study. Baldwin Elementary was led by Bernadette Moore, who was in her ninth year at the school, having served previously as a middle-school assistant principal.

To understand school leaders' roles in teacher sensemaking, I relied primarily on in-depth interviewing (Spradley, 1979) and sustained observation (Barley, 1990). I observed discussions about reading during professional development, faculty meetings, grade-level meetings, and informal interactions between principals and teachers. In all, I spent more than 150 hours

Table 2
Distribution of Interviews and Observations at Stadele Elementary

Name	Role	*Years of Experience*	*Sex/Race*	*Leadership Team?*	*Number of Interviews*	*Hours of Classroom Observation*
Helen	2nd grade	29	F/Asian	N	1	0
Tom	2nd grade	7	M/White	N	2	0
Marisa	2nd grade	4	F/Asian	N	12	33
Stephanie	2nd grade	5	F/White	Y	4	5
Margaret	2nd grade	3	F/Asian	N	0	0
Evie	1st grade	36	F/White	N	3	5
Sharon	1st grade	34	F/White	N	10	23
Francine	1st grade	3	F/African American	N	0	0
Elise	1st grade	1	F/White	N	7	25
Yumi	1st grade	3	F/Asian	N	1	0
Talia	1st grade	2	F/Latina	N	1	0
Judith	Kindergarten	33	F/White	Y	2	0
Vanessa	Reading Recovery	31	F/White	Y	2	5
Graciela	Reading Recovery	14	F/White	Y	2	5
Lorraine	Reading Recovery	17	F/White	N	1	5
Laura	4th grade	34	F/White	N	2	0
Christine	4th grade	34	F/White	N	2	0
Ellen	Reform coordinator	7	F/White	Y	5	NA
Catherine Tanaka	Principal	5	F/Asian	Y	3	NA

Note: NA = not applicable.

observing teachers interacting with school leaders and each other in both schools. I supplemented observations with repeated, semistructured interviews with classroom teachers, resource personnel, and the principals. In all, I conducted 57 interviews with 18 classroom and resource teachers in Stadele Elementary and 29 interviews with 12 classroom and resource teachers in Baldwin Elementary. I also conducted 3 interviews with Ms. Tanaka and 4 interviews with Ms. Moore. I used multiple classroom observation to understand teachers' reading practices, spending nearly 210 hours in classrooms across the two schools. See Tables 2 and 3 for further information about the distribution of interviews and classroom observations.

Data collection and analysis occurred simultaneously throughout the study year (Miles & Huberman, 1994; Strauss & Corbin, 1990). I used initial codes to identify emerging themes and highlight areas for further data

Table 3
Distribution of Interviews and Observations in Baldwin Elementary

Name	Role	Years of Experience	Sex/Race	Leadership Team?	Number of Interviews	Hours of Classroom Observation
Jeff	2nd grade	2	M/White	Y	1	0
Deanna	2nd grade	13	F/White	N	6	33
Sally	2nd grade	20	F/African American	N	1	5
Sylvia	2nd grade	31	F/African American	N	1	0
Vivian	1st/2nd grade	25	F/Asian	N	5	30
Stephen	1st grade	5	M/Asian	N	1	5
Chloe	1st grade	3	F/White	N	10	31
Erminda	1st/2nd grade	2	F/Latina	N	0	0
Bettina	1st grade	1	F/White	N	0	0
Cherise	1st grade	14	F/African American	Y	1	5
Anita	Resource teacher	30	F/White	Y	2	NA
Eloise	Kindergarten	29	F/Asian	N	1	0
Bernadette Moore	Principal	9	F/African American	Y	4	NA

Note: NA = not applicable.

collection. After all data were collected, I used NUD*IST qualitative data analysis software to code observations and interviews. I developed codes inductively through iterative coding (Miles & Huberman, 1994; Strauss & Corbin, 1990). I began with codes that described, with little interpretation, the nature of principals' interaction with teachers around policy messages about reading. By grouping together categories and using the constant comparative method (Strauss & Corbin, 1990), I moved to progressively higher levels of abstraction until I ended up with the categories used in analysis (described in more detail in the body of the article).

To understand the relationship between principals' interactions with teachers and changes in classroom practice, I compared the content and nature of conversation in formal meetings and informal interaction, with evidence of teachers' response to messages from classroom observations, at times supplementing this information with evidence of practice from teacher interviews and meeting observations. Finally, to understand the relationship between principals' understandings and their own sensemaking about policy messages, I drew on typologies of administrator understandings about teacher learning developed by Nelson (1998) and Spillane (2000a) to code

principal interviews. I then systematically drew links between principals' understandings, as revealed in interview data, and the leadership practices that I observed throughout the year at each school. I created further data displays to confirm patterns, always being alert to disconfirming evidence (Miles & Huberman, 1994).

Several methodological features of the study ensure that the patterns reported here represent patterns present in the research site. These strategies include intensive immersion at the research site (Eisenhart & Howe, 1992; Lofland & Lofland, 1995), efforts to explore countervailing evidence (Miles & Huberman, 1994), systematic coding of data (Miles & Huberman, 1994; Strauss & Corbin, 1990), and sharing findings with key informants at the school site and incorporating their insights into the final analysis (Eisenhart & Howe, 1992; Miles & Huberman, 1994).

SCHOOL LEADERS AND TEACHER SENSEMAKING ABOUT READING POLICY

Since 1995, the state of California has been in the midst of a major reading policy effort that has sought to move away from earlier state policy, characterized by some as "literature-based" approaches to reading, toward what has come to be known as the "balanced approach" to reading instruction. Backed by tremendous material resources, the initiative has been quite comprehensive. From 1995 to 1999, for example, the state legislature passed 12 bills allocating nearly a half a billion dollars to improve reading instruction, with much of the money targeted toward teacher professional development, curricular materials, and accountability systems (California State Board of Education, 1999). As a result, teachers and school leaders in the two study schools were confronted with multiple policy messages about reading instruction, including new standards, new textbooks, new assessments, new standardized tests, and multiple professional development opportunities on K-3 reading instruction.

School leaders played an influential, although at times indirect, role in shaping what and how teachers learned about these shifting policy ideas. They influenced how teachers understood and enacted policy messages by shaping teachers' access to some policy ideas and not others, by influencing the social process by which teachers constructed their understandings of reading policy, and by fostering very different conditions for teacher learning in the school. However, each of these leadership practices was, in turn, shaped by school leaders' understandings about reading instruction and how teachers learn. In the section below, I begin by describing these under-

standings. I then illustrate how these understandings shaped leadership activities in ways that influenced how teachers understood and enacted policy ideas in their classroom.

School Leaders' Understandings About Reading and Teacher Learning

In the past two decades, the professional knowledge base for reading instruction has been highly contested. Several movements in reading instruction emerged and spread, only to be challenged and recede from view. These movements were notable because they were rooted in fundamentally different epistemological and pedagogical assumptions. Bernadette Moore, principal of Baldwin Elementary, and Catherine Tanaka, principal of Stadele Elementary, had understandings of reading instruction that were consistent with different historical paradigms. They also had understandings about teacher learning that were consistent with their understandings of student learning. I explore each principal's understanding of reading instruction and teacher learning in turn.

Bernadette Moore. At the time of the study, Bernadette Moore had been the principal at Baldwin Elementary for 9 years. For 7 of those 9 years, Ms. Moore had focused school improvement efforts on literacy generally and early reading instruction in particular. Among the teaching faculty at the school, Ms. Moore was considered an authority on reading instruction. She had experienced success (as measured by standardized test scores) teaching reading at both the primary and intermediary grades during her many years as an elementary teacher. And she actively participated in professional development programs that she brought into the school.

Ms. Moore's understanding of reading instruction was rooted in the basic skills approaches to teaching reading that predominated in the United States from the late 1960s until the mid-1980s and the behaviorist theories of learning at its base (Coburn, 2001b; Kamii, Manning, & Manning, 1991; Pearson, 2000; Stahl, 1998). Ms. Moore characterized her approach as "somewhat traditional." She saw reading as a sequence of skills to be mastered, and she argued that students learned best when teachers break up complex processes into small, discrete chunks and "deliver" them in the proper sequence, taking care to allow for ample opportunities to practice. Ms. Moore felt that this approach to reading should be encouraged through a specific set of instructional practices. First, she argued that the best way to ensure proper sequence and coverage of all the necessary reading skills was to follow the textbook, which she characterized as an "instructional system." She explained,

It's really important for [teachers] to follow something. That way, you don't leave out the skills. . . . [If teachers don't follow the textbook], it won't be developmental in the sense that . . . you [won't necessarily] teach, say, consonants before you teach vowels or long vowels before short vowels. . . . And it's not efficient. You're not going to finish [the material you need to cover] by the end of the year.

In addition, Ms. Moore thought that teachers should meet with students in homogeneous reading groups. When students are not in reading groups, they should be working in learning centers on "reinforcement" activities that provide students with the opportunity to practice what they learned in reading group. Finally, Ms. Moore also advocated ongoing assessment. She saw assessment as critical both to determine pacing decisions and to make sure that teachers met all students' needs:

[Assessment] needs to drive your instruction. I mean, there's no sense in working on contractions when your students don't know the sounds of anything. So let's stop and get that taken care of, reteach if necessary, and then we can move on.

Like her understandings of student learning, Ms. Moore's understanding of teacher learning also seemed to be rooted in behaviorist theories of learning.[4] For Ms. Moore, teacher learning was like student learning; it was not so much an active cognitive process involving rethinking or reconceptualization as a process of receiving new information and having opportunities to practice in the classroom. Thus, although she was a strong advocate for the power of professional development to improve teachers' skills and invested significant resources over several years to bring professional development on early reading instruction to the faculty, the task of professional development, in her view, was mainly to provide adequate information. For example, Ms. Moore asked one professional development provider to create a comprehensive binder of information about good reading practices that new teachers could read when they came into schools. Similarly, Ms. Moore emphasized the need for teachers to read the teacher's manual as a way to learn new techniques emphasized by the new reading series. She said, "Teachers don't always read the textbook. If they would take the time to read through it, they'd be familiar with the new techniques." In general, Ms. Moore saw knowledge for teaching reading as largely residing outside of the school and thus focused more attention on bringing in external experts (in the form of consultants or materials) rather than seeking ways to build on expertise that might exist in the school. Finally, as with student learning, Ms. Moore often talked about breaking complex materials down into manageable chunks of knowledge so that teachers would be more likely to understand and be able to work with them.

Catherine Tanaka. At the time of the study, Catherine Tanaka was in her fifth year as principal of Stadele Elementary School. Prior to becoming a principal, she worked in the professional development office of the district, where she had developed expertise in school climate and mathematics instruction. When she first came to Stadele, she spent several years working to develop teamwork among the faculty and an overall climate conducive to learning throughout the school. She also devoted resources to professional development on problem solving in mathematics. But in the 2 years prior to the study, the school had turned its attention to reading instruction, participating in a regional reform effort that encouraged schools to engage in whole-school inquiry processes centered on a focused effort. The school faculty decided to use the process to move toward standards-based instruction, starting in reading instruction.

At the start of the school's reform work with reading, Ms. Tanaka did not consider herself an authority on reading instruction. It had been many years since she had been in the classroom, and she had devoted much of that time developing expertise in mathematics instruction. Thus, she saw herself as learning about reading instruction alongside her teachers. Because of her strong foundation in mathematics, she tended to construct her understandings of reading instruction by analogy to what she knew about mathematics instruction, often drawing on views of teaching and learning that seemed rooted in the sociocontructivist theories of learning guiding mathematics reform during that time.[5] For example, she emphasized that reading instruction should involve teachers teaching students strategies for decoding and making meaning of the text in a manner similar to the way they sought to teach children strategies to solve mathematical problems. This view contrasted sharply with the more traditional notion of reading as mastering a sequence of skills espoused by Ms. Moore in at least three respects. First, rather than seeing the learner as primarily a recipient of information, Ms. Tanaka viewed learners as actively constructing their understanding. For example, she described the task of reading comprehension as "not just reading a book and answering some comprehension questions . . . or just regurgitating information" but "creating meaning from that text" using inference and critical thinking. Second, this view of how children learn had different implications for instruction. Rather than an emphasis on teaching as transmission, Ms. Tanaka viewed good instruction as modeling, facilitating, and guiding. Ms. Tanaka felt that teachers should model strategies for students using such approaches as "think alouds." Similarly, teachers should encourage students to become meta-cognitive about their own use of strategies. In responding to a question about what good reading instruction would look like in a classroom, Ms. Tanaka explained that teachers "could talk about their

thinking and share strategies [for decoding and comprehension] with students. And conversely, [have] the students talk about their thinking. Then we could see what strategies they were using and add to them." She characterized this approach as getting students to "think about their thinking." Finally, Ms. Tanaka differed in her view of the proper sequencing of instruction. Although Ms. Moore felt that both decoding and comprehension skills should be taught in a particular order, Ms. Tanaka argued that it was important to target instruction to the developmental needs of particular children. To do this, teachers needed to have a much more interactive approach to instruction. Classrooms should be places where one would see "a lot of discourse interaction between the kids [and] with the teacher and the kids." By listening carefully to students, teachers could better build on student thinking.

Ms. Tanaka's understandings of teacher learning were also rooted in socioconstructivist theories of learning.[6] She saw instructional change not as giving teachers new knowledge but as a matter of instigating shifts in the ways teachers think about instruction. For Ms. Tanaka, the main shifts in thinking needed to come around teacher expectations rather than in reading content. She said, "It comes down to people examining their personal values. And until people are willing to open themselves up to that scrutiny, you really can't effect significant change." Ms. Tanaka argued that teachers were most likely to shift their thinking as they learned from each other. Thus, she attempted to encourage teacher learning by providing teachers opportunities to talk with their colleagues about matters of instruction. She explained,

It's been so valuable to provide the time for teachers to really talk about teaching and learning, even though it's uncomfortable. . . . It provides a way for them to reflect on their practice. Because if your work looked different than somebody else's, then it was: Why? Asking yourself, why? Talk[ing] about, is this really what we want to get out of the task? Is this really measuring what we want to measure out of the task? If kids are really understanding what we're teaching? That stuff is really important.

She also tried to encourage teacher learning by modeling high expectations for students and by asking strategic and probing questions. Finally, rather than seeing the task of teacher learning as bringing external knowledge in, Ms. Tanaka tended to see teacher learning as something that could happen as teachers inside the school shared their knowledge and challenged each other to learn and change.

Leadership Practices and Teacher Sensemaking

School leaders' knowledge about reading instruction and teacher learning proved significant because it influenced key leadership practices, which, in

turn, shaped how teachers responded to reading policy in their classroom. More specifically, school leaders drew on their own understandings of reading instruction as they interpreted the meaning and implications of policy messages. They enacted this interpretation as they made decisions about what to bring into the school, participated in the social construction of meaning, and designed opportunities for teachers to learn about new instructional approaches.

Shaping access to policy ideas. School leaders mediated teachers' connections to policy ideas about reading instruction by bringing in and privileging some policy messages while filtering out others. For example, Bernadette Moore arrived at Baldwin Elementary in 1990 as the school was grappling with recent state policy that aggressively promoted literature-based approaches. Literature-based instruction was premised on theories of student learning and promoted instructional strategies that were at odds with what Ms. Moore knew from her teaching days. In fact, the approach was so far from what she knew and believed that Ms. Moore admits she had a hard time understanding its logic. Reflecting on the literature-based textbooks adopted by the district, she recalled,

There wasn't much there that I saw that looked familiar to me. Like that whole space that said "decoding: these are the skills in this story that it covers." I didn't see that presented in the way I was used to seeing.

After a visit from the textbook representative failed to satisfy her concerns, Ms. Moore responded by spending funds to purchase packaged phonics approaches and train teachers on them to supplement what she saw as a lack of attention to phonics in the state-adopted reading series. She also brought in a researcher from a local university to provide professional development on approaches to decoding that she saw as distinct from literature-based instruction. In this way, Ms. Moore drew on her understandings of appropriate instruction to buffer teachers from policy messages about literature-based instruction (Rallis & Goldring, 2000) while bringing in and intensifying messages about traditional approaches to decoding that were at that time somewhat marginal in the policy environment. As a result, most teachers in the school had little access to literature-based instruction throughout the early 1990s beyond the state-adopted textbook and a single district workshop on how to use it. Of the 10 teachers I interviewed, only 1 had participated in professional development related to literature-based approaches, and she did this on her own initiative prior to coming to the school. Similarly, there was

little evidence of literature-based approaches in teachers' classroom instruction (see Coburn, 2001b).

Ms. Tanaka also drew on her emerging understandings about reading instruction as she made key gatekeeping decisions about policy messages. For example, during the 1998-1999 school year, the school was presented with multiple opportunities to participate in professional development, and Ms. Tanaka had to decide which to pursue. In one example, after participating with a team of four teachers in 4 days of professional development on reading instruction that brought in speakers representing different ideologies and emphasis, Ms. Tanaka chose which aspects of the event the team would present to the faculty. They ended up emphasizing information on reading comprehension strategies over explicit approaches to teaching decoding, even though the latter was emphasized prominently by state policy at the time. In this way, Ms. Tanaka and her team provided access to those policy messages about reading that were congruent with her vision of high-quality instruction and did not provide access to others.

The foregoing examples emphasize how the content of school leaders' knowledge shaped decisions about what to bring in and keep out of the school. But the depth of their understandings was also important. When school leaders had superficial understandings of the content of policy messages, they made decisions that at times created incongruity for teachers. For example, Ms. Tanaka, in an effort to promote comprehension strategies instruction, had the Reading Recovery teachers in the school provide a series of workshops on an assessment tool called the running record. Although the running record is congruent with the notion that children should learn strategies for reading, it is a tool intended to understand what strategies children use for decoding, not comprehension. Teachers ultimately were confused about why they were learning about running records when they were trying to identify and develop tools to assess reading comprehension. Ms. Tanaka later confirmed that she did not initially understand that running records focused on decoding.

Shaping social construction of meaning. Beyond shaping access, school leaders also played an important role in shaping how teachers came to understand and interpret the meaning and implications of new policy ideas about reading. When teachers encountered policy ideas, the meaning and implications of particular ideas, approaches, or materials were not always self-evident. Thus, they had to construct an understanding of the policy ideas to move forward with them. Teachers often constructed these understandings in direct or indirect interaction with their colleagues. Directly, they constructed them in conversation with their colleagues (see on this point also Coburn, 2001a;

Hill, 2001). Indirectly, they drew on their understanding of what they saw or thought other teachers were doing.

When the social construction of policy happened in social interaction, it tended to involve negotiation among and between different teachers' interpretations of the approach. That is, teachers put forth and modified different interpretations of what a policy idea might mean, whether the approach was appropriate for "kids in this school," or how to integrate it into the classroom. For example, after attending a professional development session that suggested that teachers work one-on-one with students for reading instruction (using a workshop model), first-grade teachers spent several grade-level meetings constructing their understanding of what it might mean to use individualized approaches to teach reading. Teachers put forth different understandings, from having students sitting in reading groups but reading different books to teachers meeting with students once a week individually to listen to them read. Through this back-and-forth conversation, teachers constructed an understanding that provided enough hooks to link this new structure for reading instruction with what they already knew and understood about teaching reading. Based on their understanding, they subsequently decided as a group that the idea was not feasible given the current structure of their reading program.

Both principals played an important role in this social process of meaning making and interpretation. They were active participants with teachers in the sensemaking process during formal meetings and informal conversations. Principals' interpretations were often influential in shaping how teachers came to understand and enact messages. For example, during the year of the study, teachers in Stadele Elementary were simultaneously grappling with a new textbook series and the release of new state standards in reading. Teachers struggled to construct an understanding of the relationship between the two. Ms. Tanaka, in staff meetings and in private conversations with teachers, repeatedly framed the meaning of the new reading series as one of many tools that could be used to meet the standards, positioning the standards as the curriculum rather than the textbook. In one meeting, she said,

There is the core curriculum and the standards, and then there is the adoption [reading series]. With the adoption, [the district] picks the materials that are closest to the standard, but no publisher can be the be-all or end-all. . . . There are other options. . . . You're supposed to teach to the standards. The adoption is one way to support it, but not the only way.

Teachers repeated this construction of the meaning and significance of the reading series vis-à-vis the standards as they discussed with each other how

to use the reading series. Importantly, they referred to this construction both in formal meetings when Ms. Tanaka was present but also in informal conversations when she was not. For example, in justifying her decision not to use the new textbook series, one teacher explained,

Ms. Tanaka has allowed us—if we're successful, if we're meeting the standards—to teach how we want to teach. So just because we have [the new reading series], Ms. Tanaka has not said you have to throw everything you do out.

In a sense, Ms. Tanaka's construction authorized teachers to use the reading series in a wide range of ways or not at all, as in the above instance, as long as teachers geared their instruction to the standards. And, as the year went on, teachers took advantage of this flexible stance toward the textbook, which resulted in enormous diversity in the way teachers came to use the reading series. A minority of teachers chose to use the textbook and follow it in order. However, others used the supplementary set of phonics readers but not the main textbook. Still others used the textbook as a source of stories that they could fit into their thematic units but did not use the lesson structure or instructional approaches advocated by the textbook. Finally, at least four teachers in the early grades chose not to use the new textbook series at all.

Consistent with prior research on district administrators (Spillane, 1998, 2000b; Spillane & Callahan, 2000), both principals constructed their understanding about policy ideas by drawing on their preexisting knowledge of reading instruction. For example, at the time of the study, Baldwin Elementary was at the end of 2 years of professional development on an approach to reading called guided reading instruction. The professional development promoted a set of specific instructional approaches that were rooted in a view of student learning as involving the active construction of meaning from text. Ms. Moore came to understand guided reading through her strong basic skills frame. As predicted by cognitive learning theorists, she gravitated to aspects of the approach that seemed familiar—the use of homogeneous reading groups and learning centers—and tended not to notice aspects of the approach that challenged her assumptions, particularly its view of learning. In this way, she appropriated what Grossman and others (Grossman, Smagorinsky, & Valencia, 1999; Newell, Gingrich, & Johnson, 2001) characterize as the "surface features" of practical tools associated with the approach, without an understanding of how practical tools such as homogeneous reading groups and learning centers contribute to the underlying conceptual basis of the approach (e.g., homogeneous groups as a way for teachers to target instruction to students' zone of proximal development).[7]

Ms. Moore's understanding of guided reading influenced how she framed her expectations to teachers. She characterized the approach as involving a shift in the ways students are to be grouped in the classroom (using three reading groups plus learning centers) or as particular instructional strategies (use whisper read rather than round robin reading) rather than involving a shift in how students learn to read. In one meeting, she said to teachers,

One of the things I'm worried about is that I go into people's classes all the time . . . and I see people using round robin reading. We need to see something different. . . . We did all this work with [guided reading], but I'm still seeing round robin reading. . . . We've spent nearly $100,000 in this school on staff development on reading, and we need to be using it.

This construction of the approach influenced teachers' efforts to construct their understanding of guided reading in two key ways. First, it focused teachers' attention on some aspects of the reform and not others. Thus, in their conversations with one another, teachers tended to focus on those aspects Ms. Moore emphasized—grouping arrangements and particular activity structures—rather than the nature of instruction that was to occur in the context of those organizational structures or the underlying theory of learning. Second, Ms. Moore's understanding of guided reading set boundaries within which teacher sensemaking unfolded. Because Ms. Moore did not recognize the ways in which guided reading approaches challenged some of her conceptions about reading instruction, she promoted guided reading alongside other instructional approaches that were in conflict with it in specific ways. For example, guided reading emphasized careful attention to matching text to child. That is, teachers were advised to select stories for instruction that were at students' instructional reading level (i.e., where students can read the materials with 90% to 94% accuracy) and that provided the opportunity to develop skills that met that group of children's needs (Fountas & Pinnell, 1996). However, although Ms. Moore advocated using guided reading, she also expected teachers to follow the grade-level textbook and use it in order, with the goal of covering the entire text by the end of the year. She explained,

I want people to think about: What is your strategy for finishing this book? So I had them calendar the entire book. . . . [This] tends to give teachers a road map to show [when] I need to be moving on. Don't let the kids kind of throw me off.

These two approaches—teaching students at their instructional level and covering the textbook—were in conflict in two respects. The textbook

included stories that tended to be quite a bit above the reading level of most children in the school. Thus, it was not possible to both use the text and use stories at students' instructional reading level. In addition, the text was not necessarily sequenced in ways that responded to children's individual needs as promoted by guided reading.

Ms. Moore's construction of both guided reading and textbooks created strong boundaries within which teachers' sensemaking unfolded as teachers needed to find ways to both use the textbook and match the text to the child. Thus, teachers' discussion about guided reading with one another tended to focus on how to balance textbook coverage with meeting student's individual needs while using the guided reading structure. And early grades teachers constructed a range of approaches to using guided reading that attempted to meet both these charges. One teacher used the textbook for whole-group instruction in the morning and pulled guided reading groups in the afternoon, essentially constructing two parallel structures for reading instruction that were rooted in different instructional approaches and met different goals. Another taught a unit from the reading series one week and did guided reading groups the next, each with completely different structures for organizing the classroom and instructional strategies. Several first-grade teachers followed the textbook for whole-class instruction in comprehension, spelling, and vocabulary but used daily guided reading groups to focus on decoding on students' reading level. Two other second-grade teachers did not use guided reading at all, focusing all their attention on the reading series.

Thus far, I've emphasized two ways that principals' construction of policy ideas shapes teachers' sensemaking processes: by defining the reform in ways that focus attention on some aspects of the reform and not others and by creating technical limits that frame the boundaries within which teachers' sensemaking can unfold. But there is also a third way: by providing the overarching interpretative frame that teachers adopt as they construct their understanding of the approach. For example, as mentioned earlier, Stadele Elementary was involved in professional development on reading comprehension strategies during the study year. Catherine Tanaka, who had previously been active in mathematics reform, came to understand reading comprehension strategies by analogy to mathematics reform—seeing similarities in the emphasis on explicit instruction in strategies and meta-cognition. She repeatedly framed the approach to reading strategies as being "like" the work they had done in the past on math problem strategies. In one faculty meeting, she explained to teachers,

In math, you teach strategies like guess and check. You are teaching children to think, which is different from teaching the information on the page. . . . I've seen teachers in

primary have kids explain their thinking with math. They do it with their story problems. We need to do this in reading starting in pre-K. . . . We need to help kids learn how to understand what they are using in reading like we do in problem solving.

This construction of reading comprehension strategies was important because it provided teachers with an interpretive frame through which they themselves could construct their understanding of the approach. Teachers in the school subsequently and repeatedly made the connection between comprehension strategies and problem-solving strategies in their own discussion. For example, shortly after the professional development, teachers in the second-grade team talked about how reading comprehension strategies were really about having children explain their answer like they do in math problem solving. While jointly scoring student work on a performance task, the teachers had the following conversation:

> *Teacher 1:* (referring to a student's answer identifying the problem in a story) This
>   one is good.
> [discussion clarifying which paper they are looking at]
> *Teacher 2:* (*disagreeing*) But a performance task needs to be more than a one-liner.
>   We discussed this the other day [at the professional development]. [It] needs to
>   talk about what did you learn and why?
> *Teacher 3:* I agree, but not many [students] did that.
> *Teacher 2:* We need to do more pre-teaching about how to include specific facts
>   from the story to justify.
> *Teacher 1:* I wonder if there are resources in [the textbook] for how to teach that.

After searching through the textbook for resources to help them teach students to explain their thinking, the teachers ultimately turned to a protocol for questioning developed to get at students' thinking in mathematics problem solving that many teachers used in mathematics lessons. They abridged the questions, and three of the six teachers began to use the approach in their reading groups. Thus, teachers' understanding of reading comprehension strategies as having students justify their answer guided teachers' experimentation with the approach in their classrooms. And classroom observations of these three teachers documented a consistent increase in the degree to which teachers asked children to justify their answers with evidence from the stories.

In summary, school leaders drew on their knowledge of reading instruction to construct understandings of policy ideas. They subsequently drew on these understandings as they interacted with teachers, focusing teachers' attention, creating technical limitations that bounded the range of appropriate responses, and providing interpretive frames that, at times, guided

teachers' sensemaking. In this way, school leaders influenced how teachers came to understand and enact policy ideas, at times in significant ways.

Shaping conditions for learning. School leaders also influenced how teachers responded to policy ideas by shaping the social, structural, and cultural conditions for teacher learning in the school. Their actions in this domain were, in turn, shaped by their understandings about how teachers learn. As discussed earlier, Ms. Tanaka saw teacher learning as best happening in social interaction. She argued that discussions with colleagues could raise awareness of alternative ways to do things and challenge teachers to reexamine their assumptions. Similarly, she believed that a principal could and should participate in this interaction around instruction, asking questions and encouraging teachers to question their assumptions. In contrast, interaction with colleagues played a limited role in Ms. Moore's view of teacher learning. Given the difference in understandings, it should come as no surprise that these principals put a very different priority on creating structures and a culture to encourage teachers to interact on matters of instruction. But they also influenced the way principals structured learning opportunities for teachers within formal meetings and professional development.

As discussed earlier, teachers made sense of new policy ideas in direct and indirect interaction with their colleagues. Thus, to the extent that school leaders shaped the nature of this interaction, they influenced the extent and ways in which teachers' engagement with policy ideas influenced their classroom practice. Ms. Tanaka and the school leadership team at Stadele Elementary devoted considerable resources to creating opportunities for teachers to meet. During the year of the study, teachers at the school met an average of 15 hours per month to work on issues of teaching and learning. In addition to formal opportunities, Ms. Tanaka nurtured an informal culture of conversation in which teachers sought each other out in informal settings to talk about their practice. She set the expectation that teachers would seek each other out around issues of learning and perpetuated this culture of informal conversation by participating in it. She often talked with teachers about matters of instruction, asking questions and probing their thinking. For example, during the year of the study, Ms. Tanaka was engaged in an ongoing conversation with teachers who taught bilingual English/Chinese classrooms about the appropriate balance between teaching reading in English and teaching reading in Chinese. She would frequently stop by classrooms, asking teachers about what they were noticing about students' development in reading instruction and how different approaches to instruction were working. Through this process, teachers and Ms. Tanaka jointly began to rethink their understanding of the relationship between first-language literacy in Chinese

and learning to read in English. Ms. Tanaka felt that it was vitally important to be in classrooms on a regular basis in this way because it "opens up opportunities for communication" and helps her "get a picture into [teachers'] thinking and where they are on the whole spectrum of standards-based reform."

In contrast, teachers in Baldwin had fewer opportunities to interact on matters of instruction. The leadership at Baldwin did not invest so large a percentage of their reform dollars in creating opportunities for teachers to work together. Therefore, during the study year, Baldwin teachers met an average of only 5 hours per month. Although there were some opportunities in the past for teachers to interact with one another in the context of professional development, the conversation did not continue after the professional development ended, as Baldwin did not boast the same kind of culture of informal conversation about matters of teaching and learning. There was no history of this interaction and the school leadership did little to model conversation about instruction as a value. Bernadette Moore spent little time interacting with teachers around matters of teaching and learning, focusing her interaction with teachers instead on matters of discipline and order. When she did talk about instruction, the conversation mostly took the form of her telling teachers what she wanted to see, rather than providing teachers with the opportunity to raise questions and reflect on their teaching. For example, Ms. Moore described an interaction with a teacher after a classroom observation in the following way: "[Her instruction] wasn't working, so I had to kind of instruct about what should be done and then go back and see if she was doing it."

Opportunities for teachers to interact around policy ideas mattered because when teachers made sense in social interaction, they had access to a range of interpretations that went beyond their own experiences and beliefs. In addition, as Catherine Tanaka suggested in an interview, these conversations sometimes surfaced deeply held assumptions. This happened, for example, when the second-grade team at Stadele Elementary worked together to score student reading comprehension assessments as part of a state-required self-study and ultimately began to question what they knew and believed about the nature of reading comprehension, asking, "What is reading comprehension?" "How do story maps encourage reading comprehension?" "What kinds of teacher questions really do encourage reading comprehension?" Finally, when teachers negotiated with one another about different ways of understanding policy messages, at times they developed new constructions of messages and new strategies for integrating approaches into their classrooms that extended and elaborated preexisting ways of doing things. In the absence of social interaction, teachers were more likely to

dismiss approaches without engaging with them, to construct understandings that reinforced preexisting ways of doing things, and to have great difficulty figuring out how to integrate new approaches in the particular context of their school or classroom.

Beyond patterns of interaction, principals influenced teacher learning in the ways they structured activities during formal meetings and professional development. Meetings and professional development in both schools tended to be quite structured, and although some activities engaged teachers, others seemed far removed from the classroom. In the words of one teacher at Stadele Elementary, "What we're supposed to do isn't necessarily the direction we choose, so sometimes it's hard to get a fire under us." In addition, school leadership often provided far too many things to do in the relatively small amount of meeting time, allowing little opportunity for teachers to slow down and carefully consider anything. Finally, especially in the case of Baldwin Elementary, school leadership often structured activities in ways that limited teachers' opportunities to learn. For example, during the year of the study, Baldwin was engaged in a state-mandated self-study. They were to pose an essential question (which Baldwin chose to focus on the quality of their reading instruction), collect and analyze student work, and formulate suggestions for improvement. Consistent with Ms. Moore's understanding that it is important to "downchunk" complex material into discrete chunks to facilitate teacher learning, the school leadership broke up large, open-ended questions for inquiry into a series of small subtasks for teachers to complete. But these small tasks—like counting the number of student work samples that were recreational as opposed to functional reading or tallying the number of students who passed spelling tests—felt very far removed from the real questions that teachers were grappling with in their classrooms. And without the overall sense of why they were doing these activities, teachers could not connect what they were asked to do with bigger questions about the efficacy of their instruction.

When the connection to the classroom was absent, when there were too many things to do in the given time, and when activities were decontextualized and routine, teachers in both schools tended to complete activities to satisfy the school leaders, the district, or the funder. For example, in response to a request for teachers to "reflect" on the data they gathered in the above activities, teachers at Baldwin had the following conversation:

> *Teacher 1:* What did we say we were going to do after the fall one?
> *Teacher 2:* (reading from old reflection) Comprehension, retelling, decoding, and phonics.

Teacher 1: Well, let's just say that we're using small groups, working at their instructional level. We could also say we're using [approaches from recent professional development].

Teacher 3: Really???

Teacher 1: Well, you just say it 'cause that's what they want to hear. Say we're using guided reading and shared reading.

This sort of compliance response, present in nearly half of all structured activities for teachers at Stadele Elementary and every structured activity at Baldwin Elementary during the study year, worked against teachers' engagement with policy ideas in ways that allowed and encouraged them to question their assumptions, challenge their frames, and rethink their practice. This suggests that it is not only the opportunities that school leaders provide for teachers to interact with one another that shapes how teachers interpret and adapt policy but also the ways school leaders structure teachers' activities during these opportunities.

DISCUSSION AND IMPLICATIONS

In the past decade, the cognitive approach to policy implementation has persuasively made the argument that the problem of policy implementation is, at least in part, a problem of teacher learning (Cohen & Ball, 1990; Cohen & Hill, 2001; Spillane et al., 2002a). Researchers have elaborated the ways in which preexisting knowledge and practices, patterns of interaction, and the larger context shape how teachers come to understand and enact instructional policy in their classroom (Coburn, 2001a; Guthrie, 1990; Jennings, 1996; Spillane & Jennings, 1997; Spillane et al., 2002a). This line of work has contributed to our understanding of policy implementation by providing an analysis of the micro-processes of teacher interpretation and adaptation of policy messages and focusing attention on the learning demands that ambitious instructional policy places on teachers. Yet it has paid relatively little attention to the role of the school principal in this process (Spillane et al., 2002b, is an exception).

This article addresses this aspect of the implementation process, arguing that principals influence teachers' sensemaking about instructional policy both directly and indirectly. Directly, they influence what teachers find themselves making sense about by shaping access to some policy messages and not others. Principals have greater access to policy messages than most classroom teachers. They are the ones who attend district meetings, receive state and district directives, and participate in networking events associated with reform efforts, learning about new materials, approaches, and ideas

associated with changing policy. As they interact with these policy messages, principals make key decisions that shape which messages they bring in, which messages they emphasize with the staff, and which they filter out. Other researchers have noted that school leaders play a buffering role for teachers, shielding them from outside pressures (Firestone, 1985; Gamoran & Dreeben, 1985; Rallis & Goldring, 2000). This study suggests that although school leaders do buffer some policy messages, they bring in and intensify others as they contract with professional development providers, purchase curriculum materials that emphasized one approach rather than another, or intensify pressures by focusing attention on them or integrating them into other school activities. In this way, school leaders mediate state policy such that teachers in different schools may encounter the same policy in ways that differ substantially in content, focus, and intensity.

School principals also influence teacher sensemaking indirectly as they participate with teachers in the social construction of the meaning and implications of policy ideas. Prior research has argued that sensemaking happens in social interaction, highlighting the way that teachers' interaction with their colleagues influences how they interpret, adapt, and enact policy messages in their classrooms (Coburn, 2001a; Hill, 2001: Spillane, 1999). Here, I extend these findings by illustrating how cross-role interaction between teachers and school leaders shapes teacher sensemaking. In this study, school leaders' interaction with teachers played an influential role in their sensemaking processes. But it also took a somewhat different form than sensemaking with colleagues. Rather than being involved in the ongoing negotiation of the technical and practical details of implementing policy approaches in the classroom, school leaders influenced the direction of the conversation and set the parameters within which teacher-teacher sensemaking unfolded. They did this by focusing teachers' attention in particular ways and by bounding the range of appropriate responses. They influenced the content of teacher sensemaking by providing interpretive frameworks, or ways of understanding policy messages, that teachers adopted and used as they constructed their understanding of the meaning and implications of policy. In participating in teacher sensemaking in these ways, school leaders shaped the course, focus, and direction of sensemaking between teachers rather than directly shaping the resulting understandings or enactment in the classroom.

Finally, principals influence teacher sensemaking indirectly by drawing on their knowledge about how teachers learn to create conditions that are more or less conducive for engaging with policy messages in consequential ways. Prior research has highlighted the key role of teachers' professional community in reform implementation (Little, 1982; Louis & Kruse, 1995; McLaughlin & Talbert, 2001; Murphy, 1994), arguing that principals can

foster this community by supporting professional learning opportunities for teachers (Berman & McLaughlin, 1978; Hall, 1998; Hall & Hord, 1987; Louis & Kruse, 1995), participating in professional development themselves (Berman & McLaughlin, 1978; Blase & Blase, 1999), and providing ample opportunities for teachers to meet with one another (Louis & Kruse, 1995; Louis & Marks, 1998; McLaughlin, 1993; Newmann et al., 1996). This study provides nuance to these findings, suggesting that it is not these practices in and of themselves that facilitate substantive implementation. Rather, it is the nature, quality, and content of the interaction in the course of these activities that shapes the degree to which teachers engage with policy in ways that transforms their practice or that reinforces preexisting approaches. In this study, both principals invested substantial resources in professional development for their teachers as promoted by prior research and writing. Both principals were active participants in the professional development themselves. But, as was the case with Ms. Moore during the era of literature-based reform and Ms. Tanaka during the period when state policy promoted systematic and explicit phonics instruction, school leaders did not always promote professional development that was consistent with or emphasized by the prevailing state policy. Furthermore, as occurred with Ms. Moore and her school's efforts to move toward guided reading, school leaders did not always provide guidance to teachers about the approaches promoted by professional development in ways that supported full implementation in the classroom. Similarly, although there was a substantial difference in the degree to which Ms. Moore and Ms. Tanaka provided structural and normative support for teachers to interact around matters of instruction, providing this support was insufficient if the activities they designed for teachers undermined the possibility of sustained reflection and authentic consideration. In each of these instances, it was the substance of interaction, the nature of the messages principals promoted to teachers, and the conditions for conversation they created that shaped what teachers learned about policy ideas and how they subsequently enacted them in the classroom, not the leadership activity itself.

Ultimately, this study suggests that principals are themselves sensemakers. Principals draw on their own conceptions of what new policy ideas or approaches entail as they make decisions about what to bring in and emphasize, as they discuss approaches with teachers, and as they shape opportunities for teacher learning. These conceptions, in turn, are shaped by the nature and depth of principals' knowledge about instruction and teacher learning. Consistent with research on teacher sensemaking, principals often gravitated toward aspects of approaches that reinforced their preexisting understandings, paying less attention to aspects of reform that challenged fundamental epistemological and pedagogical assumptions. When school

leaders had a superficial understanding of policy ideas, they, at times, promoted approaches that were incongruous with policy or with other approaches they were simultaneously promoting. At the same time, when school leaders had understandings that were congruent with policy, their interaction with teachers provided ways to understand the approach that teachers drew on to construct appropriate responses in their classrooms. And when school leaders created activities that allowed teachers to engage with these ideas and each other around matters close to the classroom, they provided the opportunity for teachers to question their assumption and rethink their approach, at times in consequential ways.

These findings have a number of implications for policy. First, they suggest the need for greater attention to professional learning opportunities for school leaders focused on specific content. School leaders are often the forgotten element in plans for professional development associated with changes in instructional policy. For example, with all the resources devoted to professional development associated with the California Reading Initiative, none were earmarked for principal professional development.[8] But when principals do receive professional development, it often focuses on generic leadership strategies rather than on the content of the instructional policy. Both Ms. Moore and Ms. Tanaka participated in district-sponsored professional development related to literacy. But an analysis of the professional development materials indicates that this professional development focused on such things as analyzing reading scores on standardized tests and learning tools for strategic planning. Although these topics are no doubt important, neither principal was engaged in in-depth explorations of the meaning and implications of new approaches to reading instruction embedded in the reform. This lack of content-focused professional development may have significant implications for the ways that school principals interact with teachers around instructional policy, not only for principals who do not consider themselves content experts like Ms. Tanaka but also for those, like Ms. Moore, who do but whose approach diverges considerably with those approaches embedded in policy.

Content-focused professional development for school leaders must start with an in-depth exploration of the nature of subject matter and how students learn it. But it must also make links between new understandings of subject matter and administrative functions (Nelson, 1999). Among other things, this means exploring the connections between pedagogical ideas underlying new approaches to instruction and how school leaders frame those ideas in their discussions with teachers, how they make decisions about reform implementation, and how they decide what policy messages and approaches to bring in and emphasize and what to buffer. Finally, it must address how

teachers learn new instructional practices in a given content area and strategies for fostering that learning (Stein & Nelson, 2004).

Second, in addition to formal professional development, policy makers and purveyors of instructional materials must pay increased attention to providing guidance to local leaders of instructional reform who will work with teachers to learn new approaches and implement policy. School leaders often find themselves in the position to make decisions about how to engage teachers in reform activities and with new materials as part of policy implementation. How they construct these activities creates conditions that are more or less conducive for teacher learning. For example, Ms. Moore's decisions about how to orchestrate the state-mandated self-study process closed off rather than opened up opportunities for teacher learning in an activity intended by policy makers to foster reflection and learning. Policy makers and others can assist school leaders in this task by creating tools with ample guidance for local facilitation that school leaders can use to engage teachers with new materials and each other in ways that foster productive engagement. Tools could include protocols for examining data or looking at student work, tasks that help teachers analyze pedagogical approaches that are part of new instructional materials, and processes for jointly teaching lessons and reflecting on student learning. These tools could be accompanied by well-constructed facilitation guides that help scaffold school leaders' ability to make formal meetings and school-based professional development productive time for teacher learning and instructional improvement.

Finally, this study also suggests that higher education institutions pay increased attention to school leaders' content knowledge—their knowledge of how students learn to read, effective instructional approaches for helping students learn, and the range of curricular tools to support those instructional approaches. Leadership credential programs have a strategic opportunity to train a new generation of school leaders who are well versed in contemporary approaches to reading instruction and can think strategically about how to use that knowledge to engage in leadership practices that support change in instructional practices. Research on teacher learning suggests that learning about new instructional approaches in ways that reach underlying assumptions about student learning is a complex and often long-term process (Richardson, 1994; Richardson & Placier, 2001; Shifter & Fosnot, 1993; Smith, 2000). There is no reason to believe that this would be different for school principals. Yet it might be crucial to engage principals in this way if principals are to draw on these understandings to interact with teachers in ways that enable them to grapple productively with instructional policy focused on changing classroom practice.

NOTES

1. Emerging from the field of the sociology of knowledge, the concepts of "working knowledge" and "worldview" emphasize the integrated, situated, and embedded nature of the knowledge that individuals draw on in the course of their work. It encompasses but also goes beyond such constructs as from educational psychology and teacher education as conceptions about the nature of subject matter (Thompson, 1992), conceptions of how students learn (Thompson, 1992), subject matter knowledge (Fennema & Franke, 1992), pedagogical content knowledge (Shulman, 1986), and leadership content knowledge (Stein & Nelson, 2004). Thus, the concept of working knowledge acknowledges the degree to which beliefs and knowledge are intertwined and the degree to which aspects of knowledge do not exist as isolated or discrete categories (see, also, Fennema & Franke, 1992 on this point). In this article, I focus primarily on two aspects of working knowledge: school leaders' content knowledge and their knowledge of teacher learning. Drawing my inspiration from Shulman's work on teachers' content knowledge, I focus on three aspects of school leaders' content knowledge: subject matter knowledge, pedagogical content knowledge, and curriculum knowledge in a given subject area. Subject matter knowledge includes one's knowledge of the discipline—in this case, reading instruction (Fennema & Franke, 1992; Shulman, 1986). Pedagogical content knowledge includes knowledge of how to represent key aspects of a subject matter to the learner, including "an understanding of what makes the learning of specific topics easy or difficult, the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning . . . knowledge of strategies most likely to be fruitful in reorganizing the understanding of learners" (Shulman, 1986, pp. 9-10). Curricular knowledge includes understanding of the range of curricular resources and approaches that are available in a given subject matter and when it is appropriate to use which approach (Shulman, 1986, 1987). Consistent with conceptions of working knowledge, I view these forms of knowledge as encompassing both formal knowledge that is rooted in the profession's collective and accumulated wisdom and practical knowledge that is situated in particular contexts and rooted in personal inquiry and experience (see Carter, 1990, on this point).

2. Findings about the relationship between district administrators' sensemaking and leadership activities that influence classroom practice are largely correlational. Spillane and his colleagues have shown that districts with administrators that construct understandings of policy that are closer to policy intent have higher levels of overall implementation (Spillane, 2000b; Spillane & Callahan, 2000). But they are unable to ascertain whether there is any causal relationship and do not provide evidence about the mechanisms underlying this pattern.

3. School, teacher, and principal names are all pseudonyms.

4. Two authors have developed complementary typologies that categorize administrators' knowledge of teacher learning into different paradigms. Nelson (1998) and Spillane (2000a) suggested that administrators who understand teacher learning in ways rooted in behaviorist theories of learning have the following understandings: Teacher learning is the transmission of knowledge from experts to novice, learning is a matter of absorbing new information, knowledge is treated as discrete chunks, and instruction for teachers involves telling, showing, and providing opportunities for practice.

5. Research by Stein and Nelson (2004) suggested that this kind of reasoning by analogy from one subject matter to another is not uncommon. In their research, they document how district leaders in New York City District #2 drew on their understanding about how to develop systemic professional development in literacy—an area in which they had a lot of experience and expertise—to develop systemic professional development in mathematics. However, Stein and Nelson argued that there are limitations to this sort of reasoning by analogy. It does not take into

account differences in the nature of the subject matter that have implications not only for approaches to teaching and learning but also for ways to structure teacher learning.

6. Nelson (1998) and Spillane (2000a) suggested that the following are characteristic of administrator understandings about teacher learning consistent with the socioconstructivist paradigm: Teacher learning involves conceptual change rather than simply adding new information, knowledge as constructed in a community of people, role of external experts is not to provide knowledge but to facilitate reflection, social interaction between peers as critical for teacher learning, and school leaders' role as asking questions to stimulate reflection.

7. Grossman, Smagorinsky, and Valencia (1999) talked about new instructional approaches—such as those associated with new policy approaches in reading instruction described here—as *pedagogical tools* that teachers and others can draw on in their teaching. They identify two types of pedagogical tools: conceptual and practical. Conceptual tools are "principles, frameworks, and ideas about teaching and learning" (p. 14) that teachers draw on, often heuristically, as they make decisions about instruction. Practical tools are "classroom practices, strategies, and resources," such as activity structures, materials, and ways of organizing the classroom. Grossman and her colleagues theorized that it is possible to implement new approaches in ways that appropriate the practical tools without the accompanying conceptual tool, as in the instance described here. However, it is also possible to appropriate a conceptual tool—the underlying theoretical basis at the heart of the practical tool—with or without its practical application. The distinction between appropriation of practical tools and appropriation of conceptual tools is consistent with the distinction made by Spillane and his colleagues (Spillane, 2000b; Spillane & Callahan, 2000) between "form-focused" understandings of policy ideas and "function-focused" understandings.

8. Interestingly, there were resources devoted to professional development of district leaders and school board members (California State Board of Education, 1999).

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Cynthia E. Coburn is an assistant professor in the School of Education at the University of California–Berkeley. Her work uses organizational sociology to understand the relationship between instructional policy and teachers' classroom practice in urban public schools.