

American Educational Research Journal

<http://aerj.aera.net>

Organizational Routines as Coupling Mechanisms : Policy, School Administration, and the Technical Core

James P. Spillane, Leigh Mesler Parise and Jennifer Zoltners Sherer
Am Educ Res J 2011 48: 586 originally published online 18 October 2010
DOI: 10.3102/0002831210385102

The online version of this article can be found at:
<http://aer.sagepub.com/content/48/3/586>

Published on behalf of



American Educational
Research Association

[American Educational Research Association](http://www.aera.net)

and



<http://www.sagepublications.com>

Additional services and information for *American Educational Research Journal* can be found at:

Email Alerts: <http://aerj.aera.net/alerts>

Subscriptions: <http://aerj.aera.net/subscriptions>

Reprints: <http://www.aera.net/reprints>

Permissions: <http://www.aera.net/permissions>

Organizational Routines as Coupling Mechanisms: Policy, School Administration, and the Technical Core

James P. Spillane
Leigh Mesler Parise
Northwestern University
Jennifer Zoltners Sherer
University of Pittsburgh

The institutional environment of America's schools has changed substantially as government regulation has focused increasingly on the core technical work of schools—instruction. The authors explore the school administrative response to this changing environment, describing how government regulation becomes embodied in the formal structure of four schools. Working at coupling government regulation with classroom teaching, school leaders transformed the formal structure, paying particular attention to designing new organizational routines. Analyzing the performance of these routines, the authors show how both government regulation and the technical core featured prominently, if selectively, and explore how routines enabled coupling by promoting standardization through alignment with common standards, by monitoring teacher and student performance, and by making aspects of instruction transparent.

KEYWORDS: school leadership, organizational theory, organizational change, educational policy, educational reform, instruction

Over several decades, local, state, and federal policymakers have pressed for substantial change in the technical core of schooling, classroom instruction, specifying what teachers should teach and acceptable levels of student achievement. Standards and test-based accountability have become staples in the environment of America's schools (Fuhrman, Goertz, & Weinbaum, 2007; Lipman, 2004; Malen, 2003). The evidence suggests that these environmental pressures increasingly make it beyond the schoolhouse door and into classrooms (Au, 2007; Clotfelter & Ladd, 1996; Herman, 2004; Mintrop & Sunderman, 2009; Valli & Buese, 2007). Classroom-level research suggests, among other things, that these policy pressures influence what teachers teach, marginalize low-stakes subjects, divert resources to students

based on their likelihood of passing the test, and increase the time devoted to teaching test taking skills as distinct from the content being tested (Booher-Jennings, 2006; Diamond & Spillane, 2004; Firestone, Mayrowetz, & Fairman, 1998; Jacob, 2005; McNeil, 2002; Smith, 1998; Valenzuela, 2004; Wilson & Floden, 2001). There is some evidence that high-stakes testing has increased student achievement, though there appears to be significant variation by state, grade level, and individual students' achievement level (Dee & Jacob, 2009; Jacob, 2005; Neal & Schanzenbach, 2010; M. Wong, Cook, & Steiner, 2009). Other studies, however, have reported that school accountability policies have had no lasting impact on student achievement (Fuller, Wright, Gesicki, & Kang, 2007; Lee, 2006) and raised fundamental questions about the validity of the test measures typically used to gauge effects (Koretz, 2008).

In this article, we focus on the response to this shifting policy environment at the school level. There is good reason for this focus, as the school administrative level has been portrayed as buffering classroom teaching from environmental pressure. Exploring *how* school leaders respond to a shifting policy environment, we describe the coupling process and in so doing contribute to new institutional theory by identifying organizational routines as coupling mechanisms. By administrative practice we mean the interactions among school staff in the performance of

JAMES P. SPILLANE is the Spencer T. and Ann W. Olin Professor in Learning and Organizational Change in the Human Development and Social Policy program in the School of Education and Social Policy at Northwestern University, 2120 Campus Drive, Annenberg Hall 208, Evanston, IL 60208; e-mail: j-spillane@northwestern.edu. He also serves as a professor of management and organizations and a faculty fellow at Northwestern University's Institute for Policy Research. His research interests include education policy, policy implementation, organizational change, school reform, and school leadership. With funding from the National Science Foundation, Spencer Foundation, and Institute for Education Sciences, his work explores the policy implementation process at the state, school district, school, and classroom levels and school leadership and management.

LEIGH MESLER PARISE is a doctoral candidate in the Department of Human Development and Social Policy in the School of Education and Social Policy at Northwestern University; e-mail: l-mesler@northwestern.edu. Her research interests include teacher quality, teacher learning and development, school leadership, policy implementation, and the effects of policy on school leaders, teachers, and students in urban schools. As a mixed-methods researcher, she hopes to inform policy by conducting both careful quantitative and qualitative work in schools.

JENNIFER ZOLTNERS SHERER is a research associate at the University of Pittsburgh in the Learning Research Development Center; e-mail: jensherer@gmail.com. She specializes in the reform of urban school districts, leadership practice, and the design of learning environments. As a qualitative researcher with a learning sciences background, she strives to integrate elements of theory, design, and practice into her work.

organizational routines rather than just school leaders' actions. Looking inside four schools, we describe how school leaders dealt with regulatory pressure by transforming the formal structure in an effort at "coupling" their schools' administrative practice with government regulation and with instruction. Formal structure refers to the designed organization including formally designated positions, chains of command, departments, programs, and formal organizational routines. We focus on school leaders' efforts to design organizational routines, examining how these efforts to transform the formal structure selectively shaped administrative practice. While there is a sizable literature showing that external regulations get inside schools and even beyond the classroom door, we know much less about *how* these regulations become embodied in the formal school structure (Coburn, 2004; Scott, 2005). To frame our work, we use "coupling" from new institutional theory, often used to account for implementation failure. Recent work argues for attention to coupling as a process (Hallett, 2010; Hallett & Ventresca, 2006; Sauder & Espeland, 2009).

We begin by describing the theoretical and empirical anchors for our work and then we discuss our methodology involving four elementary (K–8) schools. Reporting our findings, we describe how school leaders, in an effort at coupling administration with both the external environment *and* the technical core, worked to transform the formal structure through the design of new organizational routines. Focusing on the performance of these organizational routines, we show how both external regulation and the technical core figured in administrative practice. Our account contributes to new institutional theory by describing *how* regulation becomes *embodied* in the school's formal structure through organizational routines that selectively enable coupling among government regulation, administrative practice, and classroom practice. These routines worked at coupling government regulation with classroom instruction in at least three ways: by promoting standardization through alignment with common standards, by monitoring classroom instruction, and by making aspects of instruction transparent.

Theoretical and Empirical Anchors

Implementation scholars have used loose coupling and decoupling to account for the relatively weak influence of government policy on school and classroom practice. Scholars introduced the concept of coupling originally to challenge functional notions about how organizations operate and argue for attention to their institutional environment (Bidwell, 1965; Meyer & Rowan, 1977, 1978; Weick, 1976). Widely used, though diversely construed, coupling captures how organizations are made up of interdependent elements that are more or less responsive to, and more or less distinctive

from, each other (Orton & Weick, 1990). “Elements” refer to many things including organizational members (Hagan, Hewitt, & Alwin, 1979), hierarchical levels (Firestone, 1985), organizational subunits (Murphy & Hallinger, 1984), organizations and their environments (Weick, 1979), and an organization’s formal structure and its core technical work (Meyer & Rowan, 1977). Coupling denotes that the interdependent elements are “linked and preserve some degree of determinacy” (Orton & Weick, 1990, p. 204). Tight coupling refers to systems where there is “responsiveness without distinctiveness” among elements such as between two levels in an organizational hierarchy. Loose coupling refers to situations of “both responsiveness and distinctiveness,” whereas decoupling is used to refer to situations of “distinctiveness without responsiveness” (Orton & Weick, 1990, p. 205). Considering the focus of the current article, we examine how loose coupling and decoupling have been used to frame relations among the regulatory or policy environment, school administrative structure, and classroom instruction.

Institutional conformity can take precedence over technical efficiency as schools strive for legitimacy and resources from their environment. School administrators may respond to environmental pressures by making symbolic or ceremonial changes to the formal structure, preserving the organization’s legitimacy by conforming to institutional pressures, but avoiding any close internal coordination of instruction. The school’s formal structure can buffer its core technical work from the sort of external scrutiny that might uncover the uncertainties and variation in this work and thereby undermine the school’s legitimacy (Meyer & Rowan, 1978; Weick, 1976). As a result, classroom teaching can become loosely coupled or decoupled from both the institutional environment and the school’s administrative structure (Deal & Celotti, 1980; Firestone, 1985; Fuller, 2008; Gamoran & Dreeben, 1986; Malen & Ogawa, 1988; Malen, Ogawa, & Kranz, 1990).

A Changing Institutional Environment

Some scholars allowed for the possibility of tight coupling in the educational sector by recognizing that institutional sectors are neither fixed nor immutable (DiMaggio & Powell, 1983; Rowan, 2002; Rowan & Miskel, 1999). With respect to the education sector, Rowan and Miskel (1999) argued that, as the institutional environment of schools “becomes more unitary and as rules about work in the technical core become more specific” and “get attached to outcomes or other inspection systems,” they would have a stronger effect on work activity in schools (p. 373). They hypothesized that the emergence of a more elaborate technical environment in the education sector over the past several decades (e.g., standards and high-stakes testing) would lead to schools facing much stronger environmental pressures on their core technical work. There is some empirical evidence to support

this hypothesis with several studies documenting that government policies influence classroom teachers and teaching.

Of particular interest, given the focus of this article, is an emerging knowledge base that suggests school leaders are also responding to these shifts in their regulatory environment (Mintrop & Sunderman, 2009). Our primary interest is how changes in the modal patterns of governance in educational systems may achieve coupling (Cibulka, 1997; Fusarelli, 2002; Hamilton, Stecher, Russell, Marsh & Miles, 2008; Rowan & Miskel, 1999). Research suggests that school administrators, usually defined as the school principal, are heeding state policy in a variety of ways. Studies indicate that school leaders have adopted various academic programs to demonstrate their schools' efforts to improve (Diamond & Spillane, 2004), reclassified students in order to shape the student testing pool (Cullen & Reback, 2006), changed school lunches to increase students' caloric intake on testing days (Figlio & Winicki, 2005), implemented more frequent programs of testing to prepare students for high-stakes tests (Diamond & Spillane, 2004), and redirected resources to math and reading from other subject areas (Ladd & Zelli, 2002).

While school administrators, at least school principals, appear to be heeding changes in the policy environment, a critical issue for us is how school leaders respond to these changes. The literature reviewed here suggests that school principals are changing how they define their responsibilities to focus more on leading and managing instruction, especially in tested subjects. While school staff members in formally designated positions and their responsibilities are one aspect of the formal structure, they are only one. In this article, we reach beyond formal positions to consider how school leaders might be leveraging another aspect of the formal structure in response to a shifting policy environment. We examine how school leaders work to absorb policy pressures into their school's formal structure by designing organizational routines.

Scholars have argued for new applications of coupling in implementation research (Burch, 2006; Coburn, 2004; Fuller, 2008; Orton & Weick, 1990). Rather than construing coupling as a static feature of organizations, some argue for attention to coupling as a process: "something that organizations do, rather than merely as something they have" (Orton & Weick, 1990, p. 218). Instead of using tight and loose coupling to categorize relations among elements (e.g., institutional environment and technical core), these scholars argue for understanding efforts at coupling elements such as local conditions, politics, or leadership change (Hallett & Ventresca, 2006; Sauder & Espeland, 2009). Studying school leaders specifically, Hallett (2010) argued for looking at the coupling process—attempts to make two elements more or less responsive to and distinctive from one another. Heeding these calls, we examine how school leaders use organizational routines in efforts at coupling government regulation with administrative practice and with classroom instruction.

Organizational Routines: Formal Structure and Administrative Practice

An aspect of the formal structure of particular interest in this article is organizational routines, which we define as “a repetitive, recognizable pattern of interdependent actions, involving multiple actors” (Feldman & Pentland, 2003, p. 95). To count as an organizational routine, something has to be repeated over time, recognizable to organization members, and involve two or more staff members (Feldman & Pentland, 2003). Routines such as school improvement planning can structure day-to-day practice as they frame and focus interactions among staff (March & Simon, 1958; Nelson & Winter, 1982). Organizational routines serve various functions including enabling efficient coordinated action, reducing conflict about how to do organizational work, and storing organizational experiences (Argote, 1999; Levitt & March, 1988; March, 1991). At the same time, these routines can contribute to mindless action, deskilling, demotivation, and inappropriate responses to problems (Feldman & Pentland, 2003). Adopting routines that fit with the expectations of the institutional sector can also serve as a means of showing institutional conformity, thereby preserving the organization’s legitimacy (Meyer & Rowan, 1977). While some scholars stress the role of routines in preserving the status quo (Cyert & March, 1963; Nelson & Winter, 1982), others show how routines can be mechanisms for change (Feldman & Pentland, 2003; Sherer & Spillane, in press). We show how school leaders design and mobilize organizational routines as coupling mechanisms (Feldman & Pentland, 2003).

Following Feldman and Pentland (2003, p. 101), we view routines as having *ostensive* and *performative* aspects. The *ostensive aspect* is “the ideal or schematic form of a routine . . . the abstract, generalized idea of the routine.” These abstractions are essential if the ostensive aspect is to guide practice in different times and places (Blau, 1955). In this way, organizational routines are part of the formal structure of organizations just like formally designated positions or school improvement plans. Serving as a broad script for staff, the ostensive aspect of routines can enable and constrain activity or practice. The *performative aspect* refers to “specific actions, by specific people, in specific places and at specific times. It is the routine in practice” (Feldman & Pentland, 2003, p. 101). The performative aspect then refers to activity or practice—particular enactments of organizational routines such as school staff hiring or grade-level meetings. In our framing this is fundamentally about interactions, not simply actions. The ostensive aspect of organizational routines is part of the formal structure (i.e., the designed organization), whereas the performative aspect refers to administrative practice (i.e., the lived organization). We use this framing to attend to how school leaders worked to transform their schools’ formal structure and how these efforts played out in administrative practice. In doing so we show that rather than buffering instruction from government regulation, organizational

Table 1
School Demographics

School	Student Enrollment	Low Income (%)	Black (%)	White (%)	Hispanic (%)	Asian (%)	Limited English (%)
Adams	1,021	97	100	0	0	0	0
Baxter	1,127	66	7	47	22	24	38
Kelly	261	90	100	0	0	0	0
Kosten	1,569	73	8	40	19	34	48

routines were mechanisms for coupling government regulation, administrative practice, and instructional practice.

Research Method

Study Sites and Data Collection

Our theory building article is based on data from a study involving four public elementary (K–8) schools in Chicago: Adams, Baxter, Kosten, and Kelly.¹ These schools were selected purposefully in an effort to maximize variation on three dimensions we thought critical in examining school leadership (Glaser & Strauss, 1967). First, schools with new school principals often face unique challenges compared with veterans. At the start of data collection, the tenure of the principals at Adams, Baxter, Kelly, and Kosten was 10, 8, 5, and 1.5 years, respectively. The principal at Kosten left 3 months into our study and a new principal took over. Second, recognizing that the challenges of school leadership might differ depending on student achievement levels, especially in a high-stakes accountability environment, we selected schools that differed on this dimension: Three schools were performing well on student achievement tests compared to the district average, whereas the fourth school had lower performance. Third, believing that school leadership and management might differ depending on the makeup of the student population, we also selected schools that differed on this dimension. Whereas all four schools had a minimum of 60% of students receiving free or reduced lunch at the beginning of our study, more than 90% of students were eligible in two schools. Furthermore, the percentage of students receiving free or reduced priced lunch increased from 24% to 66% at Baxter and from 44% to 73% at Kosten from the early to the late 1990s, but it remained stable at the other schools. Finally, Adams and Kelly served predominantly African American students, while Baxter and Kosten served racially and ethnically diverse student populations (see Table 1).

We spent 50 to 70 days per school year collecting data from 1999 through 2001 in three of the schools and through 2003 in the fourth school

Table 2
Data Collection/Analysis

School	Staff Interviews	Meetings and Organizational Routine Observations
Adams	93	39
Baxter	48	25
Kelly	16	11
Kosten	62	56

(Adams). We decided to use our carryover funds to extend our work at Adams because the long-term principal left in 2001, affording us an opportunity to examine stability and change in school leadership arrangements when top management changes. In each school we interviewed all formally designated leaders (e.g., principal, literacy coordinator), school staff who were identified by colleagues as influential in their school though they had no formally designated leadership position, and a sample of teachers. For example, we interviewed 14 formally designated leaders across the four schools on two or more occasions. Data collection included semistructured interviews, semistructured observations of meetings (including videotaping; see Table 2), shadowing school leaders, reviewing documents, and surveys. Interviews were tape-recorded and transcribed, and videotapes were transcribed.

We developed school leader and teacher interview protocols as well as postobservation interview protocols to ensure comparable data were collected across the schools. Our semistructured school leader interview protocol, for example, focused on questions that were grouped around the following issues: (a) respondents' understanding of issues and initiatives at their school and school goals; (b) their roles, responsibilities, and day-to-day work activities; (c) change and innovation efforts in general and in mathematics, language arts, and science in particular; (d) authority and influence in the school; and (e) respondents' construction and understanding of students and parents. While key questions were asked of all respondents, interviewers were encouraged to use probes and follow-up questions (included in the protocols) as needed. Furthermore, while our instruments paid particular attention to teaching and learning, the technical core of schooling, protocols were structured so that interviewers asked broad questions at the outset of the interview so that respondents could identify the pertinent issues facing their school.

We observed a variety of organizational routines in practice (including faculty, grade-level, literacy committee, mathematics committee, and school improvement team meetings) and informal conversations in hallways and lunchrooms. By focusing on the performance of different organizational routines we were able to access and sample patterned administrative practice in

schools (Simon, 1976; Stene, 1940). Our observations were sampled based on three factors. First, we selected organizational routines that school leaders saw as central to their work as well as those mentioned by teachers in interviews. Second, recognizing that school life can differ depending on the day of the week or the time of the year, we conducted observations at different times during the school year, and we varied the days of the week on which we conducted observations. Doing so gave us access to meetings that were scheduled on different days of the week. Third, our sample of meetings ultimately depended on whether meetings took place. For example, contrary to the official accounts of school staff, some meetings rarely happened whereas others happened regularly. We used a similar strategy to select days for shadowing school leaders. We make no claims about the work of these school leaders writ large and in general based only on our observations of these meetings. Our meeting observation and field note write up protocol prompted observers to attend to (a) where and when (e.g., location, time), (b) what (e.g., stated purpose, topics covered, language used), and (c) who (e.g., who talks to whom, verbal and nonverbal exchanges).

Data Analysis

Data analysis involved three phases, with Phases 2 and 3 carried out specifically for this article. In Phase 1, data analysis was integrated with data collection, allowing researchers to refine data collection strategies in response to working hypotheses that emerged from ongoing analysis (Miles & Huberman, 1994). Using both open and closed coding, researchers wrote in-depth case studies intended to provide a comprehensive account of school leadership arrangements at each school. These cases involved multiple iterations based on ongoing feedback from the project team. We used NUDIST (now NVivo) to code emerging themes in the data into free nodes that were then compared and related to each other to form larger “parent” nodes that we stored into an index system. For example, one analysis project involved coding interview data for formally designated school leaders’ cognitive scripts for leading and managing instruction across different school subjects. Several patterns identified in Phase 1 became the basis for Phases 2 and 3, including the prominence of government regulation and organizational routines.

In Phase 2 we coded interview transcripts using HyperRESEARCH. We conducted closed coding of interview transcripts using five coding categories: biography, organizational routines, human capital, social capital, and roles and responsibilities. Using an open coding strategy (Strauss & Corbin, 1998), we then analyzed data coded under *organizational routines* and *roles and responsibilities*, identifying patterns and checking their prevalence across schools and respondents’ position. We used Excel to record these patterns and patterns from field notes and video transcripts using

the following coding categories: organizational functions (e.g., human development), organizational processes (e.g., decision making), mode of interaction (e.g., discussion), and instructional focus (e.g., mathematics).

In Phase 3, we coded the field notes and video transcripts of meetings using NVivo with two macrocodes: the technical core and policy. Under the technical core we used two sets of subcodes. The first set focused on school subjects including language arts and mathematics, whereas the second set focused on eight dimensions of instruction including content and topic coverage, grouping students, teaching strategy, assessing students, curricular materials, test preparation, classroom management, and student work. Under policy we used four subcodes: standards; tests; district, state, and federal regulation; and other. Reading the data generated under each code, we identified and tracked patterns over time and between schools. Our analysis focused on understanding whether and how formal structure and practice connected with policy and the technical core.

Organizational Routines as Coupling Mechanisms

The regulatory environment of Chicago schools was changing in the 1990s, a harbinger of things to come for most U.S. public schools. The Chicago School Reform Amendatory Act of 1995 gave much authority to a chief executive officer (CEO), who was appointed by the mayor. The CEO could place schools on probation because of low performance on the Iowa Test of Basic Skills (ITBS) for reading and mathematics. Schools on probation had to develop a supplemental school improvement plan that outlined specific strategies to improve student achievement. If a school did not make adequate progress, the CEO could have the school reconstituted, ordering new local school council elections and replacing the principal and faculty. In 1996, the CEO put 109 elementary schools (20%) on probation because fewer than 15% of their students performed at or above national norms on the ITBS (K. K. Wong & Anagnostopoulos, 1998). Beginning with the 1996–1997 school year, the district also ended social promotion, requiring students who failed to achieve a certain test score to attend summer school and, if they still failed at the end of summer school, refusing to promote them. These policy shifts give us a sense of an institutional environment that was offering more elaborate and specific guidance about instruction tied to particular consequential outcomes for both schools and students, which was the sort of change Rowan and Miskel (1999) predicted would result in environmental pressures having a stronger influence on school and classroom practice.

Exploring how leaders in four elementary schools made sense of this changing environment, we develop and support two assertions. First, we argue that school leaders transformed the formal structure by designing new organizational routines in an effort at coupling administrative practice

with government regulation and with dimensions of the technical core. Turning our attention from the formal or designed organization to the organization as lived, we next consider the performance of these organizational routines. Second, in examining administrative practice, we argue that government regulation and the technical core figured prominently and often together in the performance of organizational routines. In practice, organizational routines addressed substantive technical efficiency issues; these routines were not purely symbolic. Our theory building account shows how routines enabled coupling by promoting standardization of the technical core, transparency, and monitoring performance.

Transforming Formal Structure by Designing Organizational Routines

State and district standards and student assessments were especially salient for school leaders in the four schools. Furthermore, principals, assistant principals, and curriculum coordinators' accounts suggested that rather than buffering teachers and instruction from government regulation they worked to ensure that teachers attended to these environmental pressures. School leaders reported transforming the formal structure in an effort to couple government regulation with the technical core. While school leaders did not use the term *coupling*, their accounts captured efforts to make their school's formal structure and their administrative practice more responsive to, and less distinctive from, aspects of their environment and dimensions of instruction. These efforts to change the formal structure included creating new leadership positions and/or changing the responsibilities of existing positions and rewriting school improvement plans. The design of organizational routines, however, figured most prominently and consistently across the four schools in school leaders' accounts of their efforts to transform their school's formal structure.

While organizational routines were not part of our initial conceptual frame, they emerged early in our data collection as an especially prominent feature in school leaders' efforts to transform their schools. Hence, we begin by examining school leaders' efforts to transform the formal structure by designing organizational routines. Of course, these efforts could be mostly symbolic as school leaders transformed the formal structure to give the appearance of attention to government regulation while in practice still buffering day-to-day administrative practice and classroom instruction from any substantive change. However, we found this was not the case when we examined the performance of organizational routines in the schools we studied.

Designing organizational routines as coupling mechanisms. Leaders in the four schools worked at coupling the formal structure with government regulation and with *some* dimensions of the technical core by designing and redesigning organizational routines. Also, they reported that these

efforts were in part a response to a changing policy environment, and, as we show below, aspects of this policy environment figured prominently in their efforts to redesign their schools' formal structure.

District probation policy coupled with feedback from a board of education visit in 1996 prompted Adams principal Dr. Williams and her literacy coordinator to design the Five Week Assessment routine. This routine aligned curricula with government standards and tests and regularly measured student progress. As part of this routine, students in Grades 1 to 8 were tested every five weeks on mathematics, reading, and writing. The literacy coordinator recalled,

We were just kind of casually saying that for the majority of our teachers they all work very hard, but some of them get very low results when it comes to these achievement tests. And we were trying to figure out why. . . . We decided not to ask anymore, "Are the teachers working," but, "Are the children learning?" So this [routine] was a way to find out, "Are they learning?" (Interview)

Based on an analysis of the ITBS,² school leaders and a group of teachers created benchmarks for student achievement and developed tests to assess student performance on them. The routine measured progress in terms of what skills students had mastered, thereby indirectly monitoring what content teachers covered in their classrooms.

In addition to a writing component, school leaders designed the Five Week Assessment to be responsive to the topics assessed on the reading and mathematics ITBS. Every five weeks this routine generated student performance data on a subset of ITBS skills. The literacy coordinator explained,

The [standardized] tests . . . didn't give us much information about what we could do to improve our scores . . . because we received the results well after we could do anything about it. We thought that a more frequent assessment . . . would tell us where the children were. (Interview)

Dr. Williams claimed that the routine enabled teachers to see "assessment as a tool for letting them know what they need to work on in the classroom. That was the goal" (Interview). School staff reports suggested they accepted the parameters set by ITBS as the criteria for answering the question, "Are the children learning?" School leaders used the results of the Five Week Assessment to target intervention strategies for underperforming classrooms, monitor progress on the school's goals for instructional improvement, and focus professional development. In addition, the routine made teaching practice more transparent as student performance was regularly measured for every teacher in Grades 1 to 8. Ms. Richards, who replaced Dr. Williams as principal in 2001, explained,

We're still doing the Five Week Assessment, once that assessment is completed and graded and has been graphed and given back to the teachers, then we come back together with the teachers, with the grade levels and talk about the progress that was made. This last, well, the 15th week results were not as well as we expected. . . . So we had a meeting with every grade level and we just talked about the results of the test. (Interview)

The Five Week Assessment was intended to regularly connect classroom teaching with state assessments by getting teachers to use the topics covered in the state tests *and* students' mastery of these topics to guide the content they covered in their classrooms.

Principal Williams worked with her staff to align the school's instructional program with state standards, designing and implementing organizational routines as mechanisms to bring teachers together and standardize the curriculum across grades. The Five Week Assessment was one of a series of interconnected organizational routines at Adams. Other routines (designed to make instruction more transparent) included Breakfast Club, grade-level meetings, Teacher Talk, Teacher Leaders, Literacy Committee, and Mathematics Committee (Halverson, 2007; Sherer, 2007).

Similarly, school leaders in other schools designed organizational routines to standardize their instructional program both vertically and horizontally, working to align classroom practice with the content covered in state and district standards and student assessments. Furthermore, these routines were designed to monitor instruction. Revising the school curriculum to incorporate grade specific state academic standards, Principal Johnson and her assistant principal at Kelly designed routines to monitor and support the implementation of this curriculum. She remarked,

As you see the state goals and Chicago academic standards . . . they're in [the curriculum] and every teacher, as I said, has that in the classroom and those are the goals that we focus on, the skills that children must have in order to go on to the next grade. (Interview)

Collaborating with teachers, Assistant Principal Brown developed a "skill chart" for teachers to track student progress and align their lesson plans to standardized tests, district standards, and students' skill mastery. Described by Ms. Brown as "a tool to keep you focused and on track," she went on to explain, "You look at this chart and you see that child didn't master that skill. . . . You can assign your [teacher's] aide to work with that particular child on that skill and retest" (Interview). Dr. Johnson and Ms. Brown reported that regular reviews of teachers' skill charts gave them a "window," albeit with a particular view, into classroom instruction. Mirroring the topics assessed on state tests, the Skill Chart Review routine, as designed, was intended to make teachers responsive to the school administration and thereby to state and district regulation.

Organizational Routines as Coupling Mechanisms

At Baxter, Principal Stern and his leadership team also designed new routines to transform their school's formal structure. Stern explained, "Our biggest challenge had been developing an organizational infrastructure" to support staff in their efforts to improve classroom instruction, which he saw as improving student test scores. Central to these design efforts were the Faculty Leadership Group and Grade-Level Cycle routines. The Faculty Leadership Group met monthly and included the chairs from each Grade-Level Cycle along with key administrators. Grade-Level Cycles (K-2, 3-5, and 6-8) met bimonthly and were designed by Stern to allow teachers to plan curriculum together. Cycle chairs relayed information between these two routines. According to Stern, these efforts were designed initially to develop "indigenous faculty leadership" by giving teachers a "more independent and substantial role in making decisions" about curriculum and instruction.

Though Baxter, as one of the higher performing schools in the city, was not under threat of probation, school leaders paid attention to state and district regulation, mobilizing the Faculty Leadership and Cycle routines to standardize the school's curriculum in mathematics, science, and language arts. School leaders used these two routines to align the curriculum both vertically and horizontally. A teacher explained,

In terms of the vertical alignment, I mean it is the cycle chairs who pretty much wrote down the different topics that are being studied at different times of the year . . . and gathered all the information from the people. . . . And it was actually someone on the leadership committee who put together the grid, and now it'll be people on the leadership committee who actually sit and discuss where the gaps and where the overlaps [are]. (Interview)

Reanalyzing state test data longitudinally, Stern, the assistant principal, and the dean of students showed staff that while Baxter students performed well compared to other CPS schools, growth in achievement over time was not impressive compared to the best performing district schools. Stern recalled, "When we did this [test score analysis] it made it clear that out of 12 schools. . . . Baxter was either at the bottom, or very close to the bottom, in terms of the amount of actual growth the kids were making" (Interview). School leaders used this data analysis to mobilize curriculum standardization efforts and design two new organizational routines, the Literacy Committee and the Mathematics/Science Committee, to assist in the process.

State and district regulation also figured prominently in efforts to align the school's mathematics, science, and language arts curricula within and across grade levels. As the chair of the mathematics and science committee noted, "I mean you have the state goals, you have the CPS standards, it defines really what you're supposed to be teaching. And if you're not teaching something in those then you're not teaching what you're supposed to be"

(Interview). At the same time, school leaders at Baxter did exercise some discretion vis-à-vis state and district regulation. To begin with, rather than relying entirely on state and district regulation, school leaders also gathered their own data using surveys and classroom observations to diagnose problems with their instructional program and develop courses of action. Furthermore, while school leaders worked to standardize the curriculum by aligning it with state and district standards, individual teachers were allowed to decide on 40% of content coverage, while 60% would come from a common standard school curriculum.

Efforts at Baxter, however, went beyond standardization as school staff reported using the information generated from their longitudinal analysis of achievement data to define problems with their instructional program in organizational routines. For example, in addition to achievement data, members of the Literacy Committee reported gathering and analyzing teacher survey data and classroom observation data to generate information about literacy teaching. Analyzing these data, the Literacy Committee showed that teachers after Grade 2 or 3 did not identify themselves as teachers of reading. One leader explained, "It was like they teach that [reading] in first or second grade, and now I'm teaching my subject, my content area" (Interview). At Baxter, organizational routines were seen as opportunities to engage school staff in diagnosing instructional problems and in developing improvement strategies that were linked to government regulation. A Baxter teacher explained,

You have to put in the time discussing it, planning for it, and just plain examining what you've been doing, what you want to do, how you want to change it, what's expected as far as Board of Ed [central office] curriculum, state goals and all that. (Interview)

In this teacher's view, state and district regulation were central to establishing school goals and directions. In the above examples, we see how leaders at Adams, Kelly, and Baxter transformed the formal structure by designing organizational routines that were intended to couple classroom instruction with government regulation.

School leaders intended these organizational routines to standardize curricula, monitor student and teacher performance, and make classroom practice more transparent. While curriculum standardization and transparency were emphasized across all three schools, monitoring figured more prominently at Kelly and Adams than at Baxter. Veteran staff in the three schools reported that these transformations of the formal structure represented a dramatic shift in ways of doing business at their schools. At Baxter, for example, a veteran staff member and reading specialist remembered that less than a decade earlier:

Organizational Routines as Coupling Mechanisms

Everybody did absolutely their own thing as far as literacy. Some people used the Basal series . . . we had different Basal series going in the building. A lot of people were going to a literature-based instruction. Nobody ever talked to each other. It was just—everybody went into their own room, closed the door and did their own thing. So we've tried to develop some common vocabulary and common ways of doing things. (Interview)

This school leader's account suggests that previously teachers were relatively autonomous with respect to what happened in their classrooms, including the choice of curricular materials. Similarly, a Baxter teacher captured how classroom instruction had become more transparent at the school, remembering how things were in the past:

You close your door. You do what you want. You don't know what everybody else is doing and it's fine. Nobody is interested. Nobody's checking on you or even interested in what you are doing . . . but it changed since then. We work much closer together and I was a very quiet person. . . . Until I was probably elected to . . . chair cycle. First of all, we probably were forced to do some exchange of ideas in—when it first started. Then people found it's very helpful and nobody keeping anything as a secret so we share freely. And it helps. (Interview)

In this teacher's account, new routines such as cycle meetings and Literacy Committee "forced" teachers to interact with one another about teaching, changing practice at the school: Over time, this change in work practice convinced teachers of the value of sharing ideas with one another and in the process transformed the norm of classroom privacy.

A similar theme was evident in the accounts of veteran staff at Adams and Kelly. Principal Williams recalled that when she arrived at Adams, "there may be four classes at a grade level and they did not even talk. They did not have a clue at what was going on in each other's classrooms" (Interview). An assistant principal remembered that "there were no meetings and the staff was disjointed. . . . You go in your room, you teach, you close your door and you teach." She went on to note that "there was no togetherness, there was no cohesiveness . . . everybody was going in different directions doing their own thing" (Interview). Another assistant principal recalled,

Things like lesson plans weren't turned in on time . . . for years, we've had people say well "you have to do this, you have to do that," but nobody was following through to make sure that you did it. But with education reform [probation], it really placed demands upon you. . . . Things began to come out with the board regarding . . . accountability . . . and it started kinda putting that extra fear. (Interview)

The accounts of some of these veteran staff also hinted that efforts to transform the formal structure were not easy, as they were initially met with

resistance from some veteran teachers. As an assistant principal at Adams put it, “There were some of the veteran teachers who were very upset” (Interview). These difficulties are to be expected considering that previously, according to veteran staff, the formal school structure had preserved the privacy of the classroom.

Retrospective accounts told in more settled times, however, often gloss over the conflict involved in transforming formal structure so as to enable a coupling of classroom instruction and government regulation. At Kosten school we encountered this resistance firsthand in our data collection, as a new principal worked to transform the formal structure.

The struggle to transform formal structure: The design of new routines, pushback in practice. The challenge of changing the formal structure surfaced firsthand during our data collection at Kosten. Principal Koh inherited a school where teachers were used to being buffered from government regulation by their school leaders. A Kosten teacher remembered a previous principal:

When I first started in 1991 [the principal] was very, very laid back, and we had a lot of creative teachers in this school, and you pretty much were able to do what you needed to do and use your creativity and kind of go with your own flow, more or less. (Interview)

Another teacher noted that this principal “hired good people who he let do their jobs. And his assistant principal was a strong woman but she was the same way, she let people do their jobs” (Interview).

When Principal Koh came to Kosten in 1999, she was unsatisfied with student achievement levels. She explained,

When I look at the test results. . . . Fifty percent are succeeding, I look at the other way, fifty percent of our children are not succeeding. . . . A lot of time is wasted in not focused instruction in this school. . . . the problem is there’s not much collaboration so teachers tend to deal with the closed door and do what they do. (Interview)

For Principal Koh, mediocre student achievement was a function of unfocused classroom instruction and the lack of communication about instruction between teachers. She believed that standardizing the school’s instructional program across grades by aligning it with state and district standards was critical for improvement. She explained, “There’s got to be some consistencies among the grades” (Interview). She went on to note that curricular alignment and standardization were critical; “We have to align the curriculum in the language arts. We need to have a standard” (Interview). Principal Koh set about standardizing certain aspects of instruction—including content coverage, curricular materials, grading

Organizational Routines as Coupling Mechanisms

criteria, and student work—and making them more transparent and subject to regular monitoring.

Working to standardize Kosten's instructional program by making it more responsive to and less distinctive from state and district standards and assessments, she transformed the formal structure as soon as she took over as principal by implementing new organizational routines. She introduced regular grade-level meetings and designed new organizational routines including Morning Rounds, Report Card Review, Grade Book Review, and Lesson Plan Review. Ms. Watts, a new assistant principal hired by Ms. Koh, explained,

Things like grade-level meetings, that's already been [put] in place by Ms. Koh prior to me coming aboard. The first and second grade teams do one lesson plan and they do pacing and they do everything else that we're going to apply to other grades. (Interview)

Organizational routines like grade-level meetings were designed to align the curriculum across classrooms and make instruction more transparent. At the same time, organizational routines enabled school leaders to monitor instruction and identify problems. Principal Koh explained,

You can tell from the work that [teachers] do in the classroom and from the paperwork (Lesson Plan Review) that they turn in that they don't fully understand curriculum design . . . they're not solid in—in the teaching of reading strategies. They're not solid in teaching decoding skills . . . and also the pacing of their instruction is off. (Interview)

Assistant principal Watts also stressed the importance of monitoring, noting,

Monitoring [the new reading program] to see if—it's not just there in the classroom, but it's being used and it's being used on a daily basis and it's being used at a pace that keeps up with where they should be at the end of the year. (Interview)

These new organizational routines undermined the norm of classroom privacy that, according to veteran teachers, previous school administrations had respected.

As one might expect, Ms. Koh's efforts to design new routines were met with opposition when introduced to the faculty, especially from veteran staff. Consider the following excerpt from a faculty meeting:

Ms. Koh began, "Kosten is a good school. The former administration did a good job, but we can't take it for granted. Society is changing." She continued, "We are putting those preventative resources in place. Why should we wait for a disaster?" Then she told the teachers, "You've got to have higher expectations, because [the students] are going to be taking care of you someday." However, a teacher

quickly interjected, "But our [student test] scores are going up." Ms. Koh responded, "But our students are changing, and we want to ensure that everyone is going up." But then another teacher responded with a different interpretation: "We're getting more and more kids now with problems at home. There's no discipline in the household, and I can model things here, but if they don't get it at home" (Field notes)

In this excerpt, Ms. Koh attempted to convince teachers that their expectations for students' academic abilities was one reason that students were not doing well. Marshalling test score data, a teacher challenged Koh's claim that there was a problem with achievement. Another teacher challenged her problem definition, arguing that a changing student population rather than teacher expectations was the reason for any problems with achievement. Where Ms. Koh saw a problem, some veteran staff did not, and others publicly and privately contested her problem definition.

Despite the resistance, Ms. Koh persisted in her efforts to couple government regulation with classroom practice, working to standardize Kosten's instructional program by aligning it with state and district standards. She implemented routines that were designed to monitor and make transparent the content teachers covered and the criteria they used to grade students' work. She implemented organizational routines that were intended to connect government regulation with classroom instruction, but the resistance continued. At another faculty meeting where a teacher shared, at Ms. Koh's request, what she learned at a workshop on the district's "structured curriculum," teachers openly challenged the appropriateness of the curriculum for Kosten. A teacher who attended the workshop noted, "It's not mandated except for schools that are on probation." Attempts by Ms. Koh to transform the formal structure surfaced conflict between administration and staff, especially veteran staff. For veteran teachers, these changes represented a dramatic shift. Recognizing that Koh's approach represented a marked change, one new teacher explained, "The administration and how the school works, procedures, what's expected of teachers, that's changing I think. . . . For example we have to hand in our grade book every quarter and they're reviewed by the administration" (Interview). Many teachers wrote complaint letters about Ms. Koh that one veteran teacher compiled and sent to the school district office, prompting a district office investigation. Koh survived the investigation, though conflict persisted. Such conflict is not surprising considering that Ms. Koh's efforts fundamentally changed the formal structure from protecting classroom privacy to making it more transparent and subject to regular monitoring. In addition, she was expecting teachers to align their practice with state standards rather than continuing to allow them complete autonomy. This case captures the challenge of implementing new routines designed to change the formal structure.

Table 3
Organizational Routine Topic, by School

	Adams (%)	Baxter (%)	Kelly (%)	Kosten (%)
Percentage of organizational routines addressing . . .				
Technical core	100	88	82	93
Language arts	62	62	46	24
Math	36	10	36	17
Science	17	10	9	7
Policy or government regulation	72	67	73	80

Working to couple government regulation with instructional practice, school leaders designed organizational routines that connected the formal school structure with both government regulation and with classroom practice. In all four schools, organizational routines were designed to allow school leaders to monitor teacher and student practice, make classroom practice more transparent, and standardize the instructional program both within and across grades and classrooms by aligning it with state standards.

Organizational Routines: The Work of Coupling in Administrative Practice

As noted in our theoretical framing, the formal organization is rarely a mirror image of the informal or lived organization—the organization as experienced by school staff. While leaders transformed their schools’ formal structure by designing new organizational routines intended to couple government regulation and classroom practice, with the exception of the Kosten case, we have not yet examined how these changes to the formal structure played out in practice. To do that, we examine the performative aspect of the organizational routines we observed in these schools.

The technical core and government regulation in administrative practice. In analyzing transcript and field note data we found that both the technical core and government regulation figured frequently and together in the performance of organizational routines. More than 80% of the organizational routines we observed addressed some aspect of instruction, ranging from a high of 100% at Adams to a low of 82% at Kelly (see Table 3).³ In practice, organizational routines addressed aspects of instruction including classroom management, content coverage, teaching strategies, and curricular materials.

Government regulation also featured prominently in the performance of organizational routines, ranging from a low of 67% of the organizational routines we observed at Baxter to a high of 80% of the routines at Kosten. Furthermore, government regulation was invoked in the performance of organizational routines in ways that were substantively tied to technical

Table 4
Organizational Routine Topic, by School

	Adams (%)	Baxter (%)	Kelly (%)	Kosten (%)
Percentage of organizational routines addressing . . .				
Technical core and government regulation	72	67	73	73
Human development	76	52	82	11
Setting and maintaining direction	66	38	64	33
Organizational development	78	95	73	100

matters; these technical matters included standardizing the instructional program and setting direction for improvement, monitoring and increasing the transparency of classroom instruction, and identifying professional development and improvement needs. As a result, organizational routines were not purely symbolic because, in addressing technical issues, these routines worked at coupling government regulation and the technical core. School leaders could still use these new organizational routines for symbolic purposes, bolstering their schools' legitimacy with external stakeholders. Still, as we show below, in practice these routines addressed technical matters that involved coupling government regulation with the technical core. Government regulation *and* instruction figured together in 67% or more of the routines we observed in the four schools (see Table 4). While some of these efforts at coupling government regulation to the technical core focused narrowly on test administration procedures and telling teachers about teaching particular test taking skills, this was not the norm.

The work of coupling in administrative practice. Using examples from our field notes we examine *how* coupling was accomplished in the performance of organizational routines. State and district standards and student assessments were invoked in efforts to both set and maintain direction and to standardize content coverage, material usage, and sometimes even teaching strategies. Consider a grade-level meeting at Baxter in which teachers addressed sequencing and standardizing both curricular content and materials:

Ms. Sally then switched the topic of discussion to a uniformed spelling program for the grade. She raised the point that it was important for the grade "to be following a sequence for instruction for phonics." Ms. Jones also wants to bring in one of her own favorite books into the curriculum, which she claims has a "consistent format, which is the most important because the students are missing a range of words." . . . Ms. Sally then raised the point that she would be concerned that the grade would not be following the standards of the Illinois State in reference to [Ms. Jones's] book. (Field notes)

In this excerpt, Ms. Sally underscored the importance of following the school's standardized spelling program and she also worried about the inclusion of material not aligned with the state standards. She used state standards to adjudicate appropriate classroom materials, and other participants did not question the appropriateness of using state standards in this way. In this performance of the grade-level meeting, we see coupling as Ms. Sally pressed for the decision about content coverage and material use to be responsive to and not distinctive from state standards.

Student achievement data generated by the state test featured even more prominently than state and district standards, especially when it came to setting and maintaining direction. Consider the following excerpt from a professional development meeting, a core routine, at Kelly:

Next, Principal Johnson told the teachers that Ms. Ryan was going to go over how to read the ITBS analysis sheets from the 1998–1999 school year. And after Ms. Ryan was done talking, Shields was going to give a tutorial on Test Question Strategies. Dr. Johnson then gave the floor to Ms. Ryan by saying “Okay Ms. Ryan.” She told the room that she handed out the Building Level Skills Analysis (BLSA) sheet to all the teachers and another sheet of Student Level Analysis (SLA) to the individual teachers. (After Ms. Ryan had finished) Ms. Ryan sat down and Dr. Johnson stood up again. Reiterating what Ms. Ryan had just said, Dr. Johnson stressed the importance to the teachers of “evaluating these analyses.” “We do the curriculum before the test. . . . Children have to have exposure to questions before the test. . . . You (teachers) must refer to these” (waving the analysis she had in her hand). Dr. Johnson said, “Some schools don't pass these to their teachers.” In general the teachers seemed surprised by this comment. Again, there were “oh's” across the room. In looking at these analyses, Dr. Johnson said, “Our children do well in the computation part but not as well in reasoning and higher-order thinking.” She went on to say how it is well known that many older children, particularly in high school, perform well below the level where they should be. She said, “If our children aren't doing well in high school, it's our fault because they weren't taught in elementary school.” (Field notes)

In this excerpt, school leaders connected state test data directly to classroom instruction by identifying areas on the test on which students had done poorly and arguing for teachers' attention to these topics. Dr. Johnson told staff that when they consider what content to cover, they needed to devote more time to “reasoning and higher order thinking” because these were areas that the data suggested were in need of improvement. Also, teachers and other staff appeared to accept using student assessment data as a way of setting direction with respect to content coverage and were surprised that teachers in some schools did not have access to these data.

At Adams, efforts to set and maintain direction for instruction using standards and student assessments happened every five weeks, at least in literacy, due to the Five Week Assessment routine. School leaders used data from the Five Week Assessment in other routines in order to maintain a focus on the school's improvement goals. Consider the following grade-level meeting where the literacy coordinator discussed the writing assessment data with second grade teachers:

I noticed in the papers, [second graders] are struggling a little bit . . . on this one-paragraph expository task. They're writing . . . so we really don't want to stunt them. I would rather push them along. Plus, third graders are struggling. They're struggling because they're trying to [write a] five-paragraph paper. . . . They also have to answer open-ended responses and the teachers are only getting one or two sentences out of them. We're in the second half of the school year, and I think the second graders are ready to be pushed a little more. (Field notes)

In this meeting, the literacy coordinator used the data generated by the Five Week Assessment, aligned with the state tests, to encourage teachers to push their students' writing so that they could achieve the school's goals for language arts performance. Working with second grade teachers and using data from the Five Week Assessment, the literacy coordinator encouraged teachers to pick up the pace with respect to writing instruction so that students would be ready for the state writing assessment. In this example, we see how the grade-level meeting and Five Week Assessment routines enabled coupling by working to make classroom instruction more responsive to and less distinctive from government regulation. The literacy coordinator also drew teachers' attention to the importance of covering particular material in second grade to prepare students for third grade—vertical alignment of the curriculum. At Adams, school leaders used some aspect of the Five Week Assessment routine to frame and focus discussions in 63% of all the routines we observed related to language arts, including identifying topics and articles for Breakfast Club meetings. In addition, the routines provided a stabilizing impact on practice when the leadership team turned over (Sherer & Spillane, in press). Overall, setting and maintaining direction for instructional improvement was addressed in almost two thirds of the routines we observed at Adams and Kelly, whereas it figured in only one third of the routines observed at Baxter and Kosten.

A key component of maintaining direction, as evidenced in the excerpt from the Five Week Assessment routine above, involved identifying problems and working to ameliorate them. While these efforts often involved school leaders pressing teachers to focus on areas in which students had performed poorly on the state test, as evidenced in the two preceding excerpts from routines at Kelly and Adams, they also went beyond this. In practice,

organizational routines provided opportunities for diagnosing problems, as well as providing teachers with access to information about instruction that might help address these problems. At a Breakfast Club meeting at Adams, for example, a teacher remarked,

Teachers should prompt children to relevant background knowledge. A lot of times they don't have the background knowledge so we have to expose it to them. . . . And then they don't make the connection. That's one area where we have to make a conscious effort to dig back and [ask], "Did you ever go on a trip or on a bus . . . ?" We have to bring out their prior knowledge . . . prior knowledge is [part of] the ISAT. . . . On the ISAT there are expository pieces . . . ISAT is part of the [focus] that we need. (Field notes)

In this excerpt, a teacher argued for an instructional approach that taps into and activates students' prior knowledge. She argued for and justified this approach because she believed it to be essential for student success on the ISAT. She also argued for using particular curricular materials in reading lessons, expository text selections, again justifying the focus with reference to what students will be tested on in the ISAT. In this performance of the Breakfast Club routine, we see coupling as a teacher encouraged her colleagues to use teaching strategies and curricular materials in language arts that reflect the state assessment.

Indeed at Adams, for example, school leaders redesigned the Five Week Assessment when they believed the routine was not meeting their goals for instructional improvement. The principal explained,

When we first started our Five Week Assessment Program . . . what we didn't [do] was [plan] follow-up conferences with the teachers. So the teachers would give the test, get the results and put them down. And . . . there was no interaction after that. The first year . . . there was no difference [in scores]. As we looked at what we did, we finally came to the conclusion— what was missing was we didn't find time for the teachers to talk about the results of the Five Week Assessment. (Interview)

Concerned that the Five Week Assessment was not contributing to improvements in instruction, school leaders at Adams redesigned the routine so that teachers had opportunities to discuss the results and brainstorm strategies for improving instruction. This example offers additional evidence that school leaders' efforts to design routines were driven in part by technical efficiency concerns.

In the performance of organizational routines, school leaders and teachers shared information and knowledge about teaching strategies and materials, again often motivated and framed by reference to government regulation. Staff development was addressed in 82% of the routines we observed at Kelly, 76% at Adams, 52% at Baxter, and a mere 11% at

Kosten, where conflict over changes to the formal structure dominated many of the interactions in organizational routines.

School leaders' ability to identify and maintain direction for instructional improvement depended on making classroom work more transparent through regular monitoring. Standardization of the instructional program enabled systematic monitoring of instruction by providing a common metric that school leaders could use to compare across classrooms. Organizational routines such as the Five Week Assessment at Adams, the Skill Chart Review at Kelly, and the Lesson Plan Review at Kosten increased the *transparency* of the technical core, enabling school leaders to monitor classroom work using combinations of student outcomes, teachers' lesson plans or grade books, and even direct observation.

At Adams, for example, data generated by the Five Week Assessment enabled school leaders to regularly monitor instruction using student mastery of those skills assessed in state tests. Consider how data from the Five Week Assessment focused one Literacy Committee meeting as the literacy coordinator noted:

First I would like to say congratulations to grade levels—all grade levels made some improvements from the Five Week Assessment to the Ten Week Assessment which is a reflection of your time and commitment to getting students to learn. . . . Third through fifth [grade students need to work on their] abilities to write descriptive words. . . . Probably lacking in vocabulary, ability to pick out details from the story. They did a good job identifying the problem and solution of the story. Which leads me to middle school. Problem and solution didn't always match . . . this is truly a concern . . . [students had a] little trouble determining the important information in the story. Questions most missed were vocabulary questions. . . . I have a packet with lessons on teaching vocabulary. I'll pass it around and if you want me to make you a copy, I will. (Field notes)

In this excerpt, the literacy coordinator used data from the Five Week Assessment to praise teachers and to draw their attention to areas where students were not doing well while at the same time introducing some new lessons for teaching vocabulary. By making classroom instruction more transparent every five weeks, school leaders regularly monitored progress on instructional improvement goals. Performing the routine regularly, school staff at Adams internalized state assessment requirements as determinants of content coverage in their classrooms.

At Kosten, Principal Koh also implemented a series of routines that monitored instruction. At one staff meeting, "Principal Koh explained the Report Card Review and the Grade Book Review, informing teachers that she will review these and give them feedback" (Field notes). The Lesson Plan Review routine, for example, involved a regular review of teachers'

lesson plans and student work. Koh explained the routine at a staff meeting:

Ms. Koh begins, "Part of my training, my work" is to make sure that instruction is "in alignment with the state and city standards. As a result, I have a form, a very simple form that I have passed out to you." Ms. Koh tells teachers that they should fill out the form based on "one period a day," and include "actual work from the children, so I can give you feedback." The teachers are to turn in the form and the examples of student work along with their lesson plans and the rubrics they used for grading. Based on this review, they will "come back and talk about the kinds of assessments we want to do" and create some standardized practices (Field notes).

In this excerpt, Koh introduced teachers to the Lesson Plan Review routine that enabled school leaders to monitor instruction to ensure it aligned with "state and city standards." As state and city standards were the monitoring rubric in this routine, it contributed to school leaders' efforts to couple government regulation and classroom instruction. Another new routine at Kosten, the Morning Rounds, involved Koh and her assistant principals dropping in on teachers' classrooms and directly monitoring what was going on. During one Morning Rounds routine,

Ms. Koh opens the door to a classroom and the students are scurrying around their desks. The noise rises, and Ms. Koh asks the teacher, "Why are they running?" The teacher responds, "They're running to get their books." Ms. Koh says, "That's unacceptable," and makes the students settle down, telling them, "Show me your learning position." Once the students are sitting quietly, Ms. Koh instructs them, "Stand up, get what you need for science, and put your book bags away. You have five seconds. Five . . . four . . . three . . . two . . . one." The students move quickly but quietly and return to their seats. Then she walks around the room checking their homework and telling them, "Raise your hand before you speak." When the students settle down, Ms. Koh says, "OK, we are ready for learning." (Field notes)

This juxtaposition of the performance of new routines introduced by Ms. Koh with teachers' accounts of the former administration's hands-off approach described earlier gives a sense of the magnitude of the change in both formal structure and administrative practice at Kosten.

At Kelly, the Skill Chart Review also enabled school leaders to monitor instruction. At one professional development session, Principal Johnson insisted that teachers pay attention to the Skill Chart Review:

I noticed that the Skill Charts are not being filled out diligently enough. . . . We can't get lax on this. . . . If you have a lot of children not getting their skills, you need to re-teach. If a lot of your children are not getting the material, it is not the children. It is something to do

with the way you taught it. . . . People make excuses. But that does not hold up. (Field notes)

In this excerpt, the principal underscores the importance of the Skill Chart Review routine, reminding teachers that blaming children for low achievement is not acceptable; rather what are critical are the opportunities that teachers create for children to learn. By allowing school leaders to monitor instruction, granted the monitoring focused on what skills teachers reported students had mastery of, routines such as the Skill Chart provided a regular check on progress toward achieving their instructional goals, goals that were responsive to and not distinct from state and district regulation in mathematics and language arts.

Our analysis of the performative aspect of organizational routines (a part of the formal structure) shows that, rather than buffering instruction from external regulation, these routines in practice promoted coupling of government regulation and classroom teaching. These routines promoted coupling because school leaders used state and district regulation as templates and rubrics in performing key technical efficiency functions including standardizing the instructional program, setting and maintaining direction, identifying and addressing needs including professional development, and monitoring instruction. Organizational routines were designed to facilitate coupling of government regulation with the technical core by making classroom instruction more transparent, albeit some aspects of instruction and some school subjects rather than others.

Selective coupling: The school subject matters. The subject mattered in both the design and the performance of organizational routines. Differences among school subjects reflected how government regulation prioritized language arts and mathematics over other subjects. A teacher at Kelly explained when asked about teaching science, “All I do is reading and math” (Interview). During a Kosten staff meeting, when a teacher complained about addressing state social studies requirements with the strong focus on reading and math, Principal Koh responded that teachers could try to integrate subjects but added, “When I was a teacher, I put more emphasis on reading, and so I’m not saying don’t teach the [social studies] concepts, but you may want to cut back on the minutes” (Field notes). A Baxter teacher noted, “Science isn’t one of your guides for whether a child is promoted or graduates. So reading and math are what are stressed because those are what everybody looks at” (Interview). Other staff expressed similar views.

These views were reflected in the performance of organizational routines. Specifically, coupling efforts were *selective* (Fuller, 2008), focusing extensively, though not exclusively, on language arts and mathematics. Language arts was addressed in the performance of more organizational

routines than any other subject, ranging from a high of 62% of the routines observed at Baxter to a low of 24% at Kosten (Table 3), despite the fact that many of the routines were designed to span multiple school subjects. Mathematics was the second most prominent subject, as it was addressed in a high of 36% of the routines we observed at Adams and Kelly and a low of less than 10% at Baxter. Other school subjects figured less prominently; for example, whereas language arts was addressed in 62% of the routines observed at Adams, mathematics and science were addressed in only 36% and 17% of them, respectively.

State and district regulation do not account for differences between mathematics and language arts in the performance of routines. Routines that were not specific to any particular school subject were more likely to address language arts than mathematics. Furthermore, in situations where the same organizational routine existed for the two subjects, it was more likely to be performed for language arts than mathematics. For example, at Adams there were Five Week Assessment routines for mathematics and for language arts. Despite leaders' similar espoused goals with respect to the Five Week Assessment, the routine was performed for language arts every five weeks but was performed less frequently for mathematics. For example, during the 2002–2003 school year, while the Five Week Assessment routine was performed for language arts every five weeks, it only happened in math a total of four times. Similarly, at Baxter, the Language Arts Committee and the Mathematics/Science Committee were designed and implemented at the same time with identical charges. However, whereas the Language Arts Committee met regularly and committee members engaged in extensive data collection efforts about instruction, the Mathematics/Science Committee met infrequently.

Equivalent regulations for mathematics and language arts were understood and enacted differently in the performance of organizational routines, reflecting what previous work suggests were likely different school subject specific norms and cognitive scripts (Little, 1993; McLaughlin & Talbert, 1993; Siskin, 1990, 1991, 1994; Stodolsky, 1988, 1989). While school leaders saw both subjects as central and critical to student success, the norms and scripts that informed their work on the two subjects differed. Most school leaders saw their own staff as a primary source of expertise for reforming language arts instruction but viewed the expertise for mathematics as being in materials and programs offered by external providers. Most school leaders understood the major challenge with language arts as one of building consensus among staff about the program, whereas for mathematics the most prevalent challenge they expressed was sequencing content coverage. These subject area differences in leaders' cognitive scripts reflect broader patterns in the institutional sector as well as epistemological differences between the two subjects in terms of structure, sequence, and desired goals and the degree to which the subject is defined (Stodolsky & Grossman,

1995). Although external regulation featured prominently in the performance of routines related to mathematics and language arts, it figured differently, as it was mediated in practice by epistemological norms.

Discussion and Conclusion

Organizational routines have figured prominently in organizational research for some time, often portrayed as inhibitors of change. Our theory building account offers another view. To selectively couple classroom instruction with government regulation, school leaders transformed their formal structure by designing organizational routines in order to standardize their instructional program, set and maintain direction, and monitor progress by making classroom instruction more transparent. These efforts at changing the formal structure were intended to make aspects of classroom instruction more responsive to, and less distinctive from, government regulation in the form of standards and student assessments. In practice, these routines were not purely symbolic, as they addressed substantive technical matters by directly linking government regulation with the technical core. Rather than buffering classroom instruction from government regulation, in practice organizational routines exposed classroom instruction to environmental pressures in the form of standards and assessments. Our account shows how an aspect of the school's formal structure, organizational routines, could potentially address legitimacy concerns while at the same time addressing substantive concerns related to the school's technical core, calling into question the duality between substance and symbols (Hallett, 2010). Based on this descriptive analysis, we hypothesize that organizational routines are coupling mechanisms in schools. These coupling efforts were possible at least in part because they focused on a relatively simple conceptualization of instruction using metrics for performance (e.g., standardized test scores, skills taught) that simplified the work of teaching. Our observations at the school level suggest that coupling efforts, with the possible exception of Baxter, contributed to narrowing the school curriculum for mathematics and language arts to skills that were tested and to marginalizing other school subjects.

One issue that emerged from our analysis and that merits further investigation concerns how routines institutionalize a set of practices in schools through school staff participation in the performance of organizational routines that promote particular norms with respect to classroom instruction (e.g., standardization, transparency). As staff participate in the performance of organizational routines and come to take them for granted, government regulation, or perhaps more correctly some of the core ideas advanced through regulation, becomes embedded in the school's formal structure. In this way, new ideas about practice become embedded in formal structure and may take hold and persist over time to the extent that school staff

members participate in performing routines. By virtue of participation in the performance of routines, school staff members internalize these ideas. For example, by participating in the Five Week Assessment or Report Card Review, the school's staff monitored their own compliance with district and state regulations and came to accept instructional transparency, standardization, and monitoring as the way things ought to be. As a result, external enforcement in the form of government incentives and sanctions is not the only thing at play; staff participation in the performance of organizational routines that embody key regulatory ideals also appears to be important. In this way, changes in school norms are forged, at least in part, through transforming organizational routines, an aspect of the formal structure, that in turn influences administrative practice. Administrative practice, as jointly enacted by school staff in the performance of organizational routines and structured by the ostensive aspect of the routine, enacts school norms. *If* organizational routines are implemented and institutionalized, the values pressed by school leaders through these routines, though more or less challenged at the outset, may become normative over time through the ongoing performance of the routines by school leaders and teachers: Norms may follow practice. As the Kosten case illustrates, however, the implementation and institutionalization of new routines should not be taken for granted.

Organizational routines offer a particular way of thinking about school reform in that the development of practice (i.e., administrative practice) is the central focus, as distinct from a central focus on developing the knowledge of one or more school leader. Furthermore, rather than equating administrative practice with the actions of one or more formally designated school leader (e.g., principal), a focus on organizational routines views practice as defined in the interactions among school staff. Hence, developing practice is not simply about developing the actions of individuals—it is fundamentally about the interactions among school staff. Organizational routines are one means of influencing these interactions.

Notes

Work on this article is supported by the Distributed Leadership Studies (<http://www.distributedleadership.org>) funded by research grants from the National Science Foundation (REC-9873583; RETA Grant EHR—0412510) and the Spencer Foundation. Northwestern University's School of Education and Social Policy and Institute for Policy Research supported this work. Jennifer Zoltners Sherer acknowledges the support of the University of Pittsburgh's Learning Research Development Center. We also acknowledge the very helpful feedback of Paul Cobb, Cynthia Coburn, Jeannette Colyvas, Cristiana Croegaert, Paul Leonardi, Judith Warren Little, and Lauren Resnick. All opinions and conclusions expressed in this article are those of the authors and do not necessarily reflect the views of any funding agency. Please send all correspondence to the study's principal investigator, James Spillane, at Northwestern University, School of Education and Social Policy, 2120 North Campus Drive, Evanston, IL 60208; e-mail: j-spillane@northwestern.edu.

¹All names are pseudonyms.

²When the Illinois Standards Achievement Test (ISAT) replaced the Iowa Test of Basic Skills, school leaders used the ISAT to define benchmarks for the Five Week Assessment routine.

³We remind readers that we are unable to generalize to the performance of all organizational routines or administrative practice writ large as we purposefully picked core routines, based on our interviews with schools.

References

- Argote, L. (1999). *Organizational learning: Creating, retaining and transferring knowledge*. New York, NY: Kluwer.
- Au, W. (2007). High-stakes testing and curricular control: A qualitative metasynthesis. *Educational Researcher*, 36, 258–267.
- Bidwell, C. E. (1965). The school as a formal organization. In J. G. March (Ed.), *Handbook of organizations* (pp. 972–1022). Chicago, IL: Rand McNally.
- Blau, P. M. (1955). *The dynamics of bureaucracy: A study of interpersonal relations in two government agencies*. Chicago, IL: University of Chicago Press.
- Booher-Jennings, J. (2006). Rationing education in an era of accountability. *Phi Delta Kappan*, 87, 756–761.
- Burch, P. (2006). The new educational privatization: Educational contracting and high stakes accountability. *Teachers College Record*, 108, 2582–2610.
- Cibulka, J. G. (1997). Two eras of urban schooling: The decline of the old order and the emergence of new organizational forms. *Education and Urban Society*, 29, 317–341.
- Clotfelter, C. T., & Ladd, H. F. (1996). Recognizing and rewarding success in public schools. In H. F. Ladd (Ed.), *Holding schools accountable: Performance-based reform in education* (pp. 23–64). Washington, DC: Brookings Institution.
- Coburn, C. E. (2004). Beyond decoupling: Rethinking the relationship between the institutional environment and the classroom. *Sociology of Education*, 77, 211–244.
- Cullen, J. B., & Reback, R. (2006). Tinkering toward accolades: School gaming under a performance accountability system. *Advances in Applied Microeconomics*, 14, 1–34.
- Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Deal, T. E., & Celotti, L. D. (1980). How much influence do (and can) educational administrators have on classrooms? *Phi Delta Kappan*, 61, 471–473.
- Dee, T., & Jacob, B. (2009). *The impact of No Child Left Behind on student achievement*. Cambridge, MA: National Bureau of Economic Research.
- Diamond, J. B., & Spillane, J. P. (2004). High stakes accountability in urban elementary schools: Challenging or reproducing inequality? *Teachers College Record*, 106, 1145–1176.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147–160.
- Feldman, M. S., & Pentland, B. T. (2003). Reconceptualizing organizational routines as a source of flexibility and change. *Administrative Science Quarterly*, 48, 94–118.
- Figlio, D. N., & Winicki, J. (2005). Food for thought: The effects of schools accountability plans on school nutrition. *Journal of Public Economics*, 89, 381–394.
- Firestone, W. A. (1985). The study of loose coupling: Problems, progress, and prospects. In A. Kerckhoff (Ed.), *Research in sociology of education and socialization* (Vol. 5, pp. 3–30). Greenwich, CT: JAI.

Organizational Routines as Coupling Mechanisms

- Firestone, W. A., Mayrowetz, D., & Fairman, J. (1998). Performance-based assessment and instructional change: The effects of testing in Maine and Maryland. *Educational Evaluation and Policy Analysis*, 20, 95–113.
- Fuhrman, S. H., Goertz, M. E., & Weinbaum, E. H. (2007). Educational governance in the United States: Where are we? How did we get here? Why should we care? In D. K. Cohen, S. Fuhrman, & F. Mosher (Eds.), *The state of education policy research* (pp. 41–61). Mahwah, NJ: Lawrence Erlbaum.
- Fuller, B., Wright, J., Gesicki, K., & Kang, E. (2007). Gauging growth: How to judge No Child Left Behind? *Educational Researcher*, 36, 268–278.
- Fuller, B. (2008). Overview: Liberal learning in centralizing states. In B. Fuller, M. Henne, & E. Hannum (Eds.), *Strong states, weak schools: The benefits and dilemmas of centralized accountability (Research in Sociology of Education)* (Vol. 16, pp. 1–29). Bingley, UK: Emerald Group Publishing.
- Fusarelli, L. D. (2002). Tightly coupled policy in loosely coupled systems: Institutional capacity and organizational change. *Journal of Educational Administration*, 40, 561–575.
- Gamoran, A., & Dreeben, R. (1986). Coupling and control in educational organizations. *Administrative Science Quarterly*, 31, 612–632.
- Glaser, B., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Hagan, J., Hewitt, J. D., & Alwin, D. F. (1979). Ceremonial justice: Crime and punishment in a loosely coupled system. *Social Forces*, 58, 506–527.
- Hallett, T. (2010). The myth incarnate: Recoupling processes, turmoil, and inhabited institutions in an urban elementary school. *American Sociological Review*, 75, 52–74.
- Hallett, T., & Ventresca, M. J. (2006). How institutions form. *American Behavioral Scientist*, 49, 908–924.
- Halverson, R. (2007). How leaders use artifacts to structure professional community in schools. In L. Stoll & K. S. Louis (Eds.), *Professional learning communities: Divergence, depth and dilemmas* (pp. 93–105). Berkshire, UK: Open University Press.
- Hamilton, L., Stecher, B., Russell, J., Marsh, J., & Miles, J. (2008). Accountability and teaching practices: School-level actions and teacher responses. In B. Fuller, M. Henne, & E. Hannum (Eds.), *Strong states, weak schools: The benefits and dilemmas of centralized accountability (Research in Sociology of Education)* (Vol. 16, pp. 31–66). Bingley, UK: Emerald Group Publishing.
- Herman, J. L. (2004). The effects of testing on instruction. In S. H. Fuhrman & R. F. Elmore (Eds.), *Redesigning accountability systems for education* (pp. 141–166). New York, NY: Teachers College Press.
- Jacob, B. A. (2005). Accountability, incentives and behavior: The impact of high-stakes testing in the Chicago Public Schools. *Journal of Public Economics*, 89, 761–796.
- Koretz, D. M. (2008). *Measuring up: What educational testing really tells us*. Cambridge, MA: Harvard University Press.
- Ladd, H. F., & Zelli, A. (2002). School-based accountability in North Carolina: The responses of school principals. *Educational Administration Quarterly*, 38, 494–529.
- Lee, J. (2006). *Tracking achievement gaps and assessing the impact of NCLB on the gaps: An in-depth look into national and state reading and math outcome trends*. Cambridge, MA: Harvard University, Civil Rights Project.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319–338.
- Lipman, P. (2004). *High staked education: Inequality, globalization, and urban school reform*. New York, NY: RoutledgeFalmer.

- Little, J. W. (1993). Professional community in comprehensive high schools: The two worlds of academic and vocational teachers. In J. W. Little & M. W. McLaughlin (Eds.), *Teacher's work: Individuals, colleagues, and contexts* (pp. 137–163). New York, NY: Teachers College Press.
- Malen, B. (2003). Tightening the grip? The impact of state activism on local school systems. *Educational Policy*, 17, 195–216.
- Malen, B., & Ogawa, R. T. (1988). Professional-patron influence on site-based governance councils: A confounding case study. *Educational Evaluation and Policy Analysis*, 10, 251–270.
- Malen, B., Ogawa, R. T., & Kranz, J. (1990). What do we know about school-based management? A case study of the literature—A call for research. In W. H. Clune (Ed.), *Choice and control in American education: Vol. 2. The practice of choice, decentralization and school restructuring* (pp. 289–342). London, UK: Falmer.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2, 71–87.
- March, J. G., & Simon, H. A. (1958). *Organizations*. New York, NY: John Wiley.
- McLaughlin, M. W., & Talbert, J. E. (1993). How the world of students and teachers challenges policy coherence. In S. Fuhrman (Ed.), *Designing coherent education policy: Improving the system* (pp. 220–249). San Francisco, CA: Jossey-Bass.
- McNeil, L. M. (2002). Private asset or public good: Education and democracy at the crossroads. *American Educational Research Journal*, 39, 243–248.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340–363.
- Meyer, J. W., & Rowan, B. (1978). The structure of educational organizations. In M. W. Meyer (Ed.), *Environments and organizations* (pp. 78–109). San Francisco, CA: Jossey-Bass.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Mintrop, H., & Sunderman, G. L. (2009). Predictable failure of federal sanctions-driven accountability from school improvement—And why we may retain it anyway. *Educational Researcher*, 38, 353–364.
- Murphy, J. A., & Hallinger, P. (1984). Policy analysis at the local level: A framework for expanded investigation. *Educational Evaluation and Policy Analysis*, 6, 5–13.
- Neal, D. A., & Schanzenbach, D. (2010). Left behind by design: Proficiency counts and test-based accountability. *Review of Economics and Statistics*, 92, 263–283.
- Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.
- Orton, J. D., & Weick, K. E. (1990). Loosely coupled systems: A reconceptualization. *Academy of Management Journal*, 15, 203–223.
- Rowan, B. (2002). Teachers' work and instructional management, Part I: Alternative views of the task of teaching. In W. K. Hoy & C. G. Miskel (Eds.), *Theory and research in educational administration* (pp. 129–150). Charlotte, NC: Information Age.
- Rowan, B., & Miskel, C. G. (1999). Institutional theory and the study of educational organizations. In J. Murphy & K. S. Louis (Eds.), *Handbook of research in educational administration* (pp. 373). San Francisco, CA: Jossey-Bass.
- Sauder, M., & Espeland, W. N. (2009). The discipline of rankings: Tight coupling and organizational change. *American Sociological Review*, 74, 63–82.
- Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. In K. G. Smith & M. A. Hitt (Eds.), *Great minds in management: The process of theory development* (pp. 460–485). Oxford, UK: Oxford University Press.

Organizational Routines as Coupling Mechanisms

- Sherer, J. Z. (2007). The practice of leadership in mathematics and language arts: The Adams case. In J. P. Spillane & J. B. Diamond (Eds.), *Distributed leadership in practice* (pp. 106–128). New York, NY: Teachers College Press.
- Sherer, J. Z., & Spillane, J.P. (in press). Constancy and change in school work practice: Exploring the role of organizational routines. *Teachers College Record*.
- Simon, H. A. (1976). *Administrative behavior*. New York, NY: Macmillan.
- Siskin, L. S. (1990). *Different worlds: The department as context for high school teachers*. Stanford, CA: Center for Research on the Context of Secondary School Teaching.
- Siskin, L. S. (1991). Departments as different worlds: Subject subcultures in secondary schools. *Educational Administration Quarterly*, 27, 134–160.
- Siskin, L. S. (1994). *Realms of knowledge: Academic departments in secondary schools*. Washington, DC: Routledge & Falmer.
- Smith, B. (1998). *It's about time: Opportunities to learn in Chicago's elementary schools*. Chicago, IL: Consortium on Chicago School Research.
- Stene, E. O. (1940). An approach to a science of administration. *American Political Science Review*, 34, 1124–1137.
- Stodolsky, S. S. (1988). *The subject matters: Classroom activity in math and social studies*. Chicago, IL: University of Chicago Press.
- Stodolsky, S. S. (1989). Is teaching really by the book? In P. W. Jackson & S. Haroutunian-Gordon (Eds.), *From Socrates to software* (pp. 159–184). Chicago, IL: National Society for the Study of Education.
- Stodolsky, S. S., & Grossman, P. L. (1995). The impact of subject matter on curricular activity: An analysis of five academic subjects. *American Educational Research Journal*, 32, 227–249.
- Strauss, A. L., & Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage.
- Valenzuela, A. (Ed.). (2004). *Leaving children behind: How "Texas-style" accountability fails Latino youth*. Albany: State University of New York Press.
- Valli, L., & Buese, D. (2007). The changing roles of teachers in an era of high-stakes accountability. *American Educational Research Journal*, 44, 519–558.
- Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, 21, 1–19.
- Weick, K. E. (1979). *The social psychology of organizing*. New York, NY: McGraw-Hill.
- Wilson, S. M., & Floden, R. E. (2001). Hedging bets: Standards-based reform in classrooms. In S. H. Fuhrman (Ed.), *From the capitol to the classroom: Standards-based reform in the states* (pp. 193–216). Chicago, IL: University of Chicago Press.
- Wong, K. K., & Anagnostopoulos, D. (1998). Can integrated governance reconstruct teaching? Lessons learned from two low-performing Chicago high schools. *Educational Policy*, 12, 31–47.
- Wong, M., Cook, T. D., & Steiner, P. M. (2009). *An evaluation of No Child Left Behind using short interrupted time-series analyses with non-equivalent comparison groups*. Evanston, IL: Northwestern University.

Manuscript received July 20, 2009

Final revision received July 9, 2010

Accepted July 14, 2010