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Abstract

In this article, the author examines the links between high stakes testing policies, school organization processes, and instructional practice using data from a study of K-5 and K-8 schools in Chicago. He argues that although the policy environment penetrates the classroom, this penetration is partial—stronger on some aspects of instruction than others—and its impact unpredictable. He highlights four organizational patterns in the schools he studied that have implications for the link between accountability policy and instruction. These patterns include the stronger influence of accountability policy on content as opposed to pedagogy, the centrality of teaching colleagues in teachers' advice-seeking networks, the predominance of didactic as opposed to interactive forms of instruction, and the differential responses to accountability policy and unequal distribution of resources across schools. After outlining these patterns, he discusses their implications for understanding the links between accountability policy, instruction, and educational equity.

Keywords

accountability, recoupling, institutional theory

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Standards-based accountability policies seek to improve students' educational outcomes by transforming what teachers teach and how they teach it. In part, these policies are designed to address race and class disparities in educational outcomes by creating tighter links between the policy environment and instruction (Diamond, 2007; Hallett, 2010). More specifically, proponents of accountability policies argue that creating tighter links among academic standards, curricular content and pedagogy, and standardized testing will contribute to improved student outcomes and reductions in educational inequality.

Although it is clear that educators respond to accountability policies (Au, 2007; Mintrop & Sunderman, 2009), how (and how strongly) these policies influence instruction and educational outcomes is disputed. Some work suggests that these policies lead teachers to teach more rigorous content in ways that improve student learning (Bishop & Mane, 1999; Borko, Elliot, & Uchiyama, 1999). Others argue that these policies lead to a narrowing of instructional content, marginalizing of low-performing students, and increases in teacher-centered, didactic pedagogy (Anagnostopoulos, 2006; Booher-Jennings, 2005; Diamond, 2007; Lipmann, 2004; McNeil, 2001; Vasquez Heilig & Darling-Hammond, 2008). Still other work suggests that the impact of these policies varies by how schools are positioned with relationship to the accountability regime (Diamond & Spillane, 2004; Mintrop, 2004). This work suggests that officials at schools that are under threat because of poor student outcomes may be more likely to "game the system" by engaging in practices that improve accountability status but not necessarily student learning (Diamond & Spillane, 2004).

In this article, I examine the link between high stakes accountability policies, school organization, and instruction in a set of Chicago public schools. I argue that although policymakers and researchers emphasize increasingly tight links between the policy environment and instruction, these links remain partial and may not lead to dramatic changes in how teachers teach in these schools. Moreover, I argue that when accountability policies do affect instruction more directly, they often do so in ways that are inconsistent with the intent of these policies and may work against educational equity. In discussing the relationship between accountability and instruction, I highlight four relevant organizational patterns in these schools that may be consequential. These patterns include the stronger influence of accountability policy on content as opposed to pedagogy, the centrality of teachers' colleagues in their advice-seeking networks, the predominance of didactic as opposed to interactive forms of instruction, and the unequal distribution of educational resources and differential responses to accountability policies in high- and

low-performing schools. I discuss each of these patterns, link them to other research on the impact of accountability policy, and then discuss their potential broader theoretical and practical implications for the implementation of accountability policy and for issues of educational equity.

Background: Accountability Policy, School Organization, and Institutional Stratification

Accountability policies are based on a relatively straightforward model of educational change rooted in the bureaucratic–rational choice model of school organizations (Diamond, 2007; Spillane, Diamond, Hallett, Halverson, & Burch, 2002). This model suggests that schools and teachers will respond to rewards and sanctions embedded in government policies and that, as a result, these policies will have a strong influence on instructional practice. However, schools are complex organizations and external policies have rarely penetrated the classroom or led to major instructional transformations (Fullan, 1991, 1993; Tyack & Cuban, 1995). Work drawing on other perspectives including neo-institutional theory, faculty workplace and sense-making perspectives provide insights into why this might be the case.

Neo-institutional theorists argue that schools are loosely coupled systems in which the external environment and the administrative level are not tightly linked with the instructional core (Meyer & Rowan, 1977, 2006; Powell & DiMaggio, 1991). The current reform environment has sought to reshape these relationships by creating tighter links between the institutional environment and instruction (Burch & Spillane, 2006; Diamond, 2007; Hallett, 2010). Processes like this have been referred to as recoupling (Espeland, 1998), “the process of creating tight couplings where loose couplings were once in place” (Hallett, 2010, p. 54). Proponents of accountability argue that recoupling will help improve educational outcomes by making schools themselves better organized (Rowan, 2006). This recoupling has unfolded in complex ways in schools under accountability mandates. For instance, Hallett (2010) demonstrates that efforts to create stronger links between the policy environment, administration, and instruction can lead to “turmoil” inside schools as teachers and administrators struggle over competing conceptions of their appropriate roles in a transforming environment. Likewise, because teaching is a complex and multidimensional practice, the extent to which policy penetrates the classroom may vary in terms of subject matter and instructional dimension (Diamond, 2007; Spillane & Burch, 2006; Weiss, Pasley, Smith, Banilower, & Heck, 2003).¹ Therefore, even as tighter linkages between the policy environment and

instruction have recently emerged, a direct link may not have replaced loose coupling on some dimensions.

The link between the policy environment and instruction is also shaped by how people in schools make sense of policy messages (Spillane, 2004). Work building on cognitive perspectives on policy implementation emphasizes how school actors make sense of educational policies and how this influences how they interpret, respond to, and shape them in practice. This work shows that even when policy messages reach teachers and influence their practices, teachers' prior beliefs about teaching and learning (Coburn, 2004), their professional experiences, and priorities set by school leaders (Spillane et al., 2002; Diamond & Spillane, 2004) can influence how they implement reforms and how instructional practice is affected (Firestone & Mayrowetz, 2000; Weiss et al., 2003). Teachers' interpretations and understandings of these policies can also alter the policy in practice (Coburn, 2004; Spillane, 2004).

This sense making stretches beyond individual teachers. Although teaching has traditionally been characterized as isolated work (Lortie, 1974), teachers are increasingly embedded in informal professional networks that emerge based on problems of instructional practice (Bidwell, 2001; Bidwell & Yasumoto 1999; Wenger, 1998). Some argue that teachers' instructional decisions are influenced by their teaching colleagues who they interact with in these informal practice communities (Bidwell, 2001; Lave, 1988; Lave & Wenger, 1991). This means that teachers depend on their colleagues, to a certain extent, to make sense of the institutional environment and make instructional decisions. Thus, the link between the policy environment and the classroom may be mediated in important ways by collegial interactions at the school level.

Finally, although there are general patterns of individual and organizational mediation of policy messages, these processes occur in schools that are stratified in terms of many characteristics that matter for educational outcomes (Diamond & Spillane, 2004; Roscigno, 2000). The education sector is characterized by school-level variations in educational resources, and scholars using an institutional stratification perspective argue that educational inequality results from the differential educational resources found in schools serving different populations of students (Roscigno, 2000). U.S. schools are highly segregated institutions, and African American and Latina/o students are more likely than White students to attend schools that have less experienced and qualified teachers (Darling-Hammond, 2004; Lankford, Loeb, & Wycoff, 2002; Presley, White, & Gong, 2005) and serve more low-income students. Others have documented similar race and class differences in monetary resources (Elliott, 1998; Hedges & Greenwald, 1996), teachers' collective efficacy beliefs (Adams & Forsyth, 2006; Takahashi, 2011), and teachers'

sense of responsibility for student learning (Diamond, Randolph, & Spillane, 2004; Lee & Smith, 2001). Schools serving Black students have often been disproportionately targeted by high stakes accountability sanctions (Bryk, 2003; Diamond & Spillane, 2004) and may respond in ways that exacerbate rather than challenge educational inequality. For example, Diamond and Spillane (2004) show that school officials in Chicago probation schools (which are predominantly African American and low-income) reallocate instructional resources in ways that limit the learning opportunities of low-performing students. For instance, they target instruction to students who are near proficiency cut points and provide additional resources to teachers at benchmark grades rather than to all teachers.

Teaching also varies across these stratified institutions and some argue that to challenge educational inequality changes must occur in both instructional content and pedagogy. Students in low-income schools receive less access to valued forms of knowledge than do middle- and upper-income students (Anyon, 1980; Camburn & Han, 2011; Smith, Lee, & Newman, 2001). Research shows that pedagogy in low-income schools is more didactic and conventional (emphasizing lecture, recitation, and seat work; Gamoran, Secada, & Marrett, 2000; Goodlad, 1984) than instruction in schools serving middle- and upper-income students (Anyon, 1980, 1981). In middle- and upper-income schools, students often receive instruction “that emphasizes critical thinking, problem solving, and active participation in learning” (Barr & Dreeben, 1983; Diamond, 2007, p. 287; Gamoran, 1986, Smith et al., 2001). In a recent meta-analysis of 142 studies that used data national data sets, Camburn and Han (2011) found that “lower SES students were less likely to (a) be exposed to authentic instruction,² (b) engage in meta-cognition and problem solving, and (c) read trade books.” These differences across schools in terms of educational resources and instructional practices suggest that high stakes accountability policies are introduced into schools with different characteristics and are therefore likely to have distinct implications for students from different backgrounds who attend such stratified institutions.

Taken together, this prior work suggests that although accountability policies get the attention of school officials, the link to instructional change is complex and depends on multiple organizational patterns and dynamics. In trying to connect policy to instruction, high stakes accountability policies are working against long-standing expectations of teacher classroom autonomy. These policies are also designed to influence a complex practice (instruction) that has multiple subject areas and dimensions. School officials are embedded in organizations and interact with colleagues who possess different resources, capacities, and orientations toward teaching and learning. So when thinking

Table 1. School Demographics^a

School	Student enrollment (%)	Low income (%)	Black (%)	White (%)	Hispanic (%)	Asian (%)
School A	750-1,000	90-100	100	0	0	0
School B	1,000-1,500	60-70	<10	40-50	20-30	20-30
School C	1,000-1,500	70-80	<10	40-50	10-20	30-40
School D	250-500	90-100	100	0	0	0
School E	750-1,000	90-100	<10	0	90-100	0
School F	250-500	90-100	100	0	0	0
School G	1,000-1,500	90-100	100	0	0	0
School H	1,000-1,500	90-100	<10	<10	80-90	<10

^aRanges are used in this table to protect the identity of the schools and the participants.

about the link between accountability policy and instruction, considering these organizational patterns and dynamics seems important. A core goal of this article is to highlight some key organizational patterns and explore their potential implications for the implementation of accountability policy, recoupling processes, and educational equity.

Empirical Database

This article draws on evidence from a multimethod study of school leadership in 15 K-5 and K-8 Chicago public schools (Spillane & Diamond, 2007). In the larger study, researchers spent between 50 and 70 days per academic year in eight case study sites from 1999 to 2003. The remaining seven schools were interview-only sites and did not involve other forms of data collection. In the case study sites, data collection included semistructured interviews with school leaders and teachers, observations and shadowing of school leaders, classroom observations, teacher interviews, videos of leadership team meetings, and a social network survey in a subset of schools.³ The data for this article come from research in the eight case study schools. Table 1 shows the demographic characteristics of these schools.

The evidence for this report is drawn from interviews with teachers, observations in their classrooms, and a social network survey conducted in four case study schools. Some of the evidence also comes from previous published material (Diamond, 2007; Diamond & Spillane, 2004) and is expanded on here to draw more general lessons.

The Chicago Context⁴

This research was conducted in Chicago, a city that has been an active participant in school reform efforts over the last two decades and has had a major influence on reform efforts in other cities (Payne, 2008). Between 1989 and 1995, Chicago was involved in a major effort to decentralize decision making. The Chicago School Reform Act (P.A. 85-1418) led to the formation of local school councils with substantial parent and community representation and substantial power over school budgetary and principal hiring and retention decisions.

In 1995, the Chicago School Reform Amendatory Act introduced high stakes accountability to Chicago. This Act shifted power to a chief executive officer (CEO) who was appointed by the Mayor and empowered to place low-performing schools on academic probation and in remediation based on results from the Iowa Test of Basic Skills (ITBS). These accountability mechanisms affected schools quickly. In 1996, 109 elementary schools (25% of the total) were placed on academic probation (Hess, 2000; Wong & Anagnostopoulos, 1998). Between 1996 and 2001, 147 elementary schools were placed on academic probation, 75% of them were predominantly Black schools (Bryk, 2003). Chicago accountability policy targeted students as well as schools. During this period the district also ended “social promotion” and required students to reach certain performance benchmarks to be advanced beyond certain grades. More than 50,000 students who failed to meet performance requirements participated in mandatory summer school programs during the first 2 years of this policy (Bryk, 2003). Therefore, during this period, Chicago was involved in significant reform efforts that included high stakes testing as a centerpiece.

Interviews and Classroom Observations

As part of this study, my colleagues and I observed 105 classroom lessons taught by 47 teachers across eight schools. These included 42 language arts lessons, 42 mathematics lessons, and 20 science lessons. During these observations, researchers focused on the academic tasks that students were asked to engage in, the content of the tasks, and the classroom discourse patterns. Following each classroom observation, researchers completed a set of closed ended items in which they were asked to characterize the entire lesson answering questions like the following “How would you characterize the teachers’ feedback to students’ academic responses? (a) No feedback

provided (b) Responses evaluated only for correctness, (c) The teachers explained or elaborated on the correct response, (d) The teachers explored the students' knowledge and comprehension of the correct response, (e) The teachers asked the students another question to provide clues or to prompt further thinking. We used this and similar questions to capture classroom discourse patterns, the nature of academic tasks, and other characteristics.

Prior to and following these classroom observations, teachers were interviewed. The preobservation interviews focused on the content and purpose of the lesson.⁵ The postobservation interviews asked teachers about their content and pedagogic choices and how they had reached them. We documented both the human and material influences on teachers based on their reports in these interviews.

We analyzed the evidence first by coding all of the teacher interview data using the topic code "influences." After coding for influences we further coded for "who" (other teachers, administrators, curriculum specialists, principals, etc.) and "what" (testing, standards, etc.) influenced teachers' decisions. We then coded the data on influences for the "focus" of the influence which included subject area (mathematics, language arts, science) and dimension of instruction (content, pedagogy, grouping arrangement, etc.). Using this process we were able to capture the source of the influence as well as the target (e.g., subject area or instructional dimension).

Social Network Survey Data

In addition to these interviews and observations, I draw on data from a social network survey in four of these schools. The network survey asked teachers to identify others who they turned to for advice about instruction in mathematics, reading, and science. For example, teachers were asked "Who do you turn to for help or advice about teaching reading?" We asked the same questions about mathematics and science instruction. On the basis of teachers' responses, we were able to construct advice-seeking networks and to identify prominent actors in those networks by using a measure called in-degree centrality. In-degree centrality is a simple measure that captures how often a particular individual is identified by coworkers as someone they go to for advice or guidance.⁶ This evidence was analyzed using UCINET software package. This software is used for multiple types of social network analysis including measures of centrality (including in-degree and out-degree). In this article, I focus on in-degree centrality to identify central actors in teachers' advice-seeking networks.

In addition, we asked teachers to identify artifacts that they turned to for advice or guidance in their instruction and how often they turned to these other resources. I report how frequently teachers used the Chicago Academic Standards, Chicago Curriculum Frameworks, the State of Illinois Standards, and testing in planning their instructional activities..

Findings

Accountability policies have sought to establish tighter links between the policy environment and instruction. In the Chicago context, during the period, the research was conducted, there was an effort to create more accountability by linking state standards with a set of curriculum frameworks and the ITBS. Rewards and sanctions were connected to how schools and students performed and the ITBS. Institutional theorists suggest that the rise of accountability has led to tighter coupling in organizations once characterized as loosely coupled or decoupled (Meyer & Rowan, 2006). I argue that the coupling that has emerged as a result of accountability is partial—leading to tighter control over some facets of classroom instruction and looser control over others. Where tighter coupling has emerged, it has often led to changes that contradict the goal of instructional improvement. Below I highlight what I mean by partial recoupling and how it is related to organizational patterns and dynamics in the urban schools I studied. First, I discuss partial recoupling as it relates to subject matter and dimension of instruction. Second, I discuss how this process is likely mediated by teachers' collegial interactions inside schools. Third, I discuss how the nature of pedagogy in these schools relates to transform instruction. Fourth, I discuss how institutional stratification—both schools position in relationship to the accountability regime and their levels of educational resources—has implications for the link between the policy environment and instruction.

Previous work has suggested that teachers pay attention to policy messages and that those messages influence instruction. This has led some to argue that tighter links have emerged between the policy environment and classroom practice. This discussion has been informed in important ways by work drawing on neo-institutional theory and the idea of coupling. As Spillane, Parise, and Sherer (2011) write,

[C]oupling captures how organizations are made up of interdependent elements that are more or less responsive to, and more or less distinctive from, each other . . . Coupling denotes that the interdependent elements are linked and preserve some degree of determinancy. Tight

coupling refers to systems where there is “responsiveness without distinctiveness” among elements such as 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.” (Spillane et al., 2010, p. 5)

Recoupling refers to a process in which tighter coupling emerges between elements that were once decoupled or loosely coupled. By partial recoupling, I highlight how various components of a work activity (e.g., instruction) can exhibit various levels of coupling with certain elements of the organization and its environment. The activity, by virtue of these various levels of coupling, can be considered partially recoupled.

Subject Matter and Dimension of Instruction

Data from the survey show that teachers do pay attention to academic standards, curriculum frameworks, and testing when they make instructional decisions. Across the three schools for which we analyzed the evidence, a large percentage of teachers reported seeking help or advice from district and state standards as well as testing. Table 1 shows the percentage of teachers who sought such help or advice in their reading, mathematics, and science instruction at least one time per week.

Figure 1 shows that standards, curriculum frameworks, and testing are referred to by a large percentage of teachers quite frequently, demonstrating a clear link between multiple dimensions of the policy environment and instructional decision making. Taking mathematics instruction as an example, 48.6% of teachers used the Chicago Academic Standards at least weekly, 43% used the curriculum frameworks, 51.3% used the Illinois State Standards, and 31.9% referred to testing at least weekly.

Although teachers used these resources, their use of them varied by subject matter. When comparing mathematics with reading instruction, we see that a lower percentage of teachers seek help or advice from these testing artifacts in reading instruction. In reading, the percentage of teachers who sought help or advice from district and state standards was about 12% lower than in mathematics. Finally, for curriculum frameworks teachers advice seeking in reading was 16% lower than in mathematics. The data for testing show that fewer teachers reported being influenced in their science instruction. This may reflect the emphasis on mathematics and reading instruction in the ITBS (the accountability test used at the time the research was conducted). These patterns suggest that the connection of the policy environment to instruction varies by subject area (Spillane & Burch, 2006).

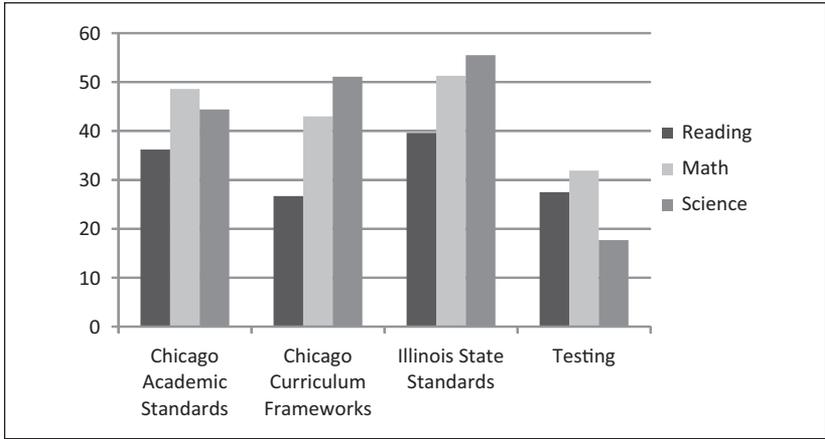


Figure 1. Percentage of teachers who report seeking help or advice in their mathematics, science, and literacy instruction from district standards, district curriculum frameworks, state standards, and testing once a week or more (Based on reports of 116 teachers in three schools)

Instruction is a complex practice and can also be broken down into different dimensions including content (the knowledge and skills taught by teachers) and pedagogy (how knowledge and skills are taught) even within particular subjects. The data presented above can tell us that teachers paid attention to the policy environment in making instructional decisions and that the attention they paid varied somewhat by school subject, it does not tell us as much about how different instructional dimensions were influenced. Drawing on interview and observation data,⁷ I examined the multiple influences on teachers’ instructional practice around both content and pedagogy (Diamond, 2007). Instructional content and pedagogy were two important targets of Chicago’s high stakes accountability policy. After observing teachers’ lessons, they were asked how they decided on instructional content and pedagogy. They were then asked if other people or things had influenced them. Multiple influences emerged on both content and pedagogy. Figure 2 shows the human and material influences on instructional content and pedagogy reported by teachers.

Figure 2 shows that standards and testing were much more prominent influences on content coverage than on pedagogy. When teachers discussed deciding what content to teach, they reported multiple human and material influences. The four most important influences were other teachers (56%),

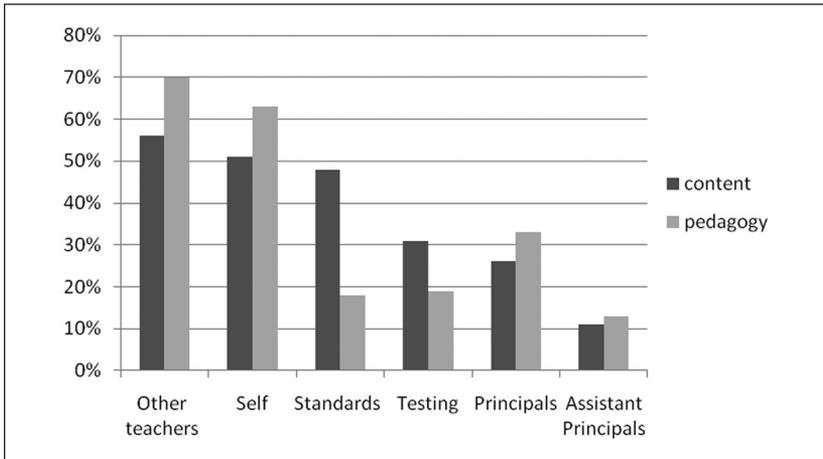


Figure 2. Teachers' reports of influences on content and pedagogy (based on the reports of 84 teachers in eight schools)

Source: This chart is based on evidence also reported in Diamond (2007).

textbooks (55%), their own experiences (51%), and standards (48%). Testing was the fifth most important influence (31%). Therefore, with regard to instructional content, teachers reported multiple influences with testing and standards being prominent among them. The influence of testing and standards on instructional content included subject matter contraction and fragmentation within subject areas, changes in the sequencing and pacing of instruction (e.g., teaching science after the testing period), and focus on test preparation.⁸ Although these changes demonstrate the penetration of the policy environment into classroom decision making, they do not necessarily represent movement toward instructional improvement. Below I present evidence highlighting two patterns that emerged within subjects—subject matter contraction and instructional fragmentation—that may have negative implications for student learning.

We found that teachers focused on language arts and mathematics far more than science and social studies instruction in response to accountability pressures (Diamond, 2007; Diamond & Spillane, 2004; Spillane, Diamond, Burch et al., 2002; Spillane, Diamond, Walker et al., 2001). According to teachers, this focus was the result of pressure to respond to the demands of the district's high stakes testing policy that were, in some cases, communicated by members of their school communities. As one lower grade teacher reported:

Teacher: Well our Principal says those are the two things we must do first if we have to skip everything else we won't say that out loud but if you have to skip everything else that is fine as long as you get math and the reading done. Those are the two things that they are tested on.

Interviewer: So what do you think [the principal] thinks about science?

Teacher: Oh I think she thinks it's very important we would not have a science lab if she did not think it was important and just because we are not teaching science per se does not mean that we cannot work it into the language arts curriculum we try to integrate it into the curriculum as much as possible . . . I am sure that [she] wants us to teach it as much as we can.

Here the teacher and administrators construct accountability policy as constraining on their practices. The teacher believes that the principal is invested in science instruction but encourages teachers to “fit it in” around the more pressing demands to improve achievement in the core subjects of mathematics and language arts. Therefore, there is a link between the demands of the policy environment, school level administration, and teachers' instructional practices. However, the link limits the exposure to science instruction.

Testing and standards also seemed to lead teachers to teach in more fragmented ways within mathematics and language arts. In other words, teachers highlighted specific skills that would be tested rather than adopting a more holistic approach to instruction that emphasized the connections across concepts within subjects (Diamond, 2007). Teachers reported that this led to the kind of fragmented instruction. This type of instruction has traditionally been associated with schools serving low-income students (Anyon, 1980; Diamond, 2007).

These patterns of contraction and fragmentation do not seem to be limited to these schools. Au (2007) conducted a metasynthesis of 49 qualitative studies that examined the impact of high stakes testing on instruction. Across these studies, he found that when subject matter instruction was influenced by testing, subject matter contraction was reported in 69.4% of the studies. Subject matter contraction was nearly 2.5 times as common as subject matter expansion which occurred in 28.6% of the studies. Likewise, instruction was 2.5 times more likely to become more fractured than to become more integrated in the studies he reviewed. Therefore, he found that when accountability policy influenced instructional content, it led to more narrow and fragmented instruction.

In contrast to instructional content, testing and standards were much less prominent influences on pedagogy. As Figure 1 shows, other teachers (70%) and the teachers themselves (63%) were the most important influences whereas testing (19%) and standards (18%) were less often mentioned. There seemed to be a clear distinction drawn between testing and standards as influences on instructional content and pedagogy. One school administrator acknowledged that although the standards shaped the curriculum, neither she nor the standards dictated pedagogy. “We take our curriculum from CPS standards. This is our Bible. We set goals for each marking period. I don’t tell them how to teach . . . but they are responsible for covering the same material.” Likewise, teachers saw the standards as shaping content but not how material was taught. As one teacher puts it when speaking of standards “It just tells you what you have to teach . . . it doesn’t tell you how to teach it.”⁹ In the relatively small number of cases in which teachers reported that testing influenced their pedagogic decisions, there was not a clear pattern with regard to pushing it toward more interactive or didactic forms of instruction (Diamond, 2007).¹⁰

Therefore, although the policy environment does tend to penetrate the classroom level in these schools, the extent of that penetration varied depending on subject matter and dimension of instruction. When there seems to be a more direct link between policy and instruction (around content), the impact of that tighter coupling is not clearly positive. This highlights the need for careful examination of the influences of testing and standards on instructional practice and suggests that recoupling is partial—some elements of instruction may become more tightly coupled than others.

The Central Role of Teachers as Influences on Instruction

In the previous section, I discussed the direct connection between the policy environment and instruction. Although that section revealed that these teachers pay attention to curriculum frameworks, standards, and testing, Figure 2 shows that their teaching colleagues are the most important influences on them. Accountability policies are introduced into organizations in which multiple influences exist and people have established relationships and patterns of interaction. This was reflected in teachers’ reports of influences on their instructional practices. With regard to what they taught in the classroom, 56% of teachers turned to their teaching colleagues. With regard to pedagogy, 70% turned to their colleagues for help or guidance.

The central role of teachers also emerged from our social network analysis in which we asked about teachers’ interactions with their colleagues. Across the surveyed schools, classroom teachers emerged as the central influences

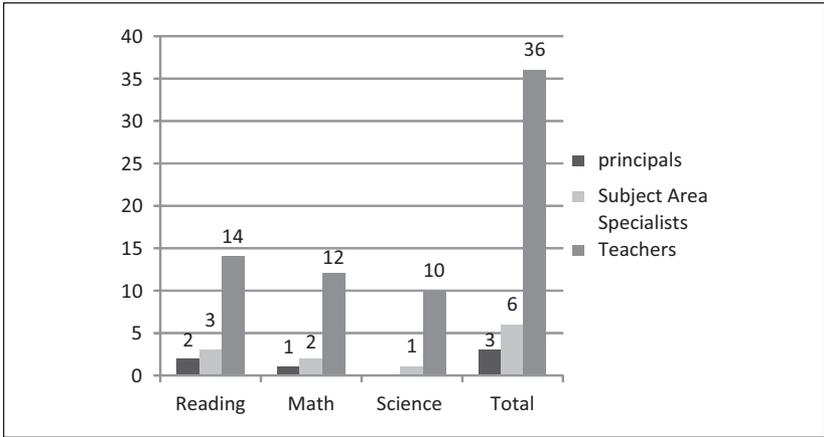


Figure 3. Central actors in teachers advice-seeking networks based on in-degree centrality of three or higher (based on reports of 165 teachers at four schools)

on their colleagues with subject area specialists and principals being less often identified. One simple way to measure influence in a social network is by measuring in-degree centrality or the total number of people who cite a particular individual as one from whom they seek advice of guidance. Following the strategy used in other work (Spillane, Camburn, Pustejovsky, et al., 2008), I used organization members with an in-degree centrality of three or higher to identify people who were prominent in teachers advice-seeking networks across reading, mathematics, and science instruction.

A few important things are clear from this figure. Other classroom teachers are prominent in teachers’ advice-seeking networks. Principals and assistant principals were less often identified. In fact, principals and assistant principals only emerged as central actors at one school. Specialists were also less often identified. However, those who were identified had a high degree of centrality in two schools. This suggests that formal designation as an instructional leader or subject area specialist captures some of teachers’ advice seeking but that there is clearly an active pattern of interaction among classroom teachers with no formal leadership designation.

In discussing the influences of their teaching colleagues in interviews, teachers suggested frequent interactions about instruction in formal and informal settings.¹¹ As one fifth-grade teacher argued, “As opposed to me um, really trying to navigate through things myself, there’s a lot of teachers here with a lot

of experience who I learn from, who don't mind sharing." A teacher at a different school discussed how she interacts with her colleagues around instruction.

Interviewer: So that's how you change? You go back to stuff that you've done before. Do you ever consult with anybody about stuff like that? Like how to, like ideas for using vocabulary?

Teacher: Oh yeah, always. You know with the other two fifth grade teachers. You know we'll just walk into each others' room and we'll say, "Oh that's a good idea do you mind—" You know? And, you know, the biggest compliment to a teacher is when someone else uses their lesson, you know, it really is. So yeah I've done that a lot. It's like, you know, I like that or can I borrow that . . . and vice versa.

A first-grade teacher stated as follows:

Teacher: Well the first grade teachers I went to them because they had experience doing this and I wanted to know how they got started and what they used and why they used it and I thought no better place to start than with the people who've been doing it for awhile. . . . So I wanted to go to the people who I trusted that could teach me things that would work.

A fifth-grade teacher commented as follows:

Teacher: Someone that I actually watch and learn through teaching is Miss J, she's really good with those kids. . . . And she was so good with them and always kept their attention and so I kind of started saying, "Ok, well that's a good idea." You know to, just like pepper, you get little speckles of everything from everybody.

What emerged from many of these teachers comments was that there was a rather free interchange among them about instructional issues within their schools. Although some of these interactions occurred in formal meetings, many happened in more informal settings. One representative fifth-grade teacher discussed having both formal (team meetings) and informal interactions with her colleagues. When asked how often she interacts with colleagues she said.

Teacher: As a cycle [instructional team] once or twice a week and informally it could be every day.

Interviewer: And what are the settings?

Teacher: It could be during lunch, it could be out in the hallway like right before classes begin.

Interviewer: How long do these interactions usually last?

Teacher: It could last 5 minutes, it could last 15, 20.

Interviewer: And that would be in the hall or you could duck into a room?

Teacher: Duck into a room.

As this teacher points out, she and her colleagues engage in frequent informal interactions about instructional strategies. This reinforces that this teacher is embedded in networks of collegial interactions and is not isolated in her classroom.

As previous research has shown, these teachers are embedded in networks that shape their instructional practices. These collegial interactions (both formal and informal) are an important structural element of these contexts (Bidwell, 2001). Efforts to create tighter links between the policy environment and instruction must contend with these patterns of formal and informal interaction among teachers. In some cases, school leaders have attempted to use formal interactions among teachers as coupling mechanisms that enhance the link between the administrative and classroom levels (Spillane et al., 2011). However, these informal exchanges seem less likely to be susceptible to the creation of such mechanisms and may work against tighter coupling.

Work on communities of practice suggests that these interactions inform teachers' sense of the meaning of their work. Education scholars and practitioners generally perceive frequent interactions among teachers as positive. However, although the nature of these interactions demonstrates promise for improving student outcomes, it is also important to remember not only that practice communities provide resources for instructional improvement but also that they are limited by the resources embedded in the community. Such practice communities are not equal across schools and may both enable and constrain certain kinds of instructional changes. In the next section, I discuss the nature of instruction at these schools which may have implications for teachers' efforts to change their instructional practices.

The Predominance of Didactic Instruction

A third organizational pattern with implications for accountability policy and recoupling is the nature of pedagogy in the school. How students are taught instructional content is a critical component of how inequality is reproduced

(Anyon, 1980, 1981; Bowles & Gintis, 1976). Working-class students have often received instruction that emphasizes memorization, recitation, lecture, and seat work (conventional or didactic teaching) whereas their more affluent counterparts have received instruction that emphasizes higher order thinking, problem solving, and complex communication (interactive or authentic instruction; Newman, Camburn et al., 2011; Smith et al., 2001). With regard to instructional strategies, accountability policies often seek to move away from conventional instruction which emphasizes seat work, recitation, and lecture (Diamond, 2007; Gamoran, Secada, & Marrett, 2000; Goodlad, 1984) and toward more interactive forms of instruction which

involves teachers coaching and guiding students through their learning, seeking explanations from students for their answers, and assessing the thinking that led to the students' answers. Students discuss and ask questions about classroom work with the teacher, as well as with other students, and attempt to connect knowledge to prior understanding. (Diamond, 2007, p. 288)

Supporters of this emphasis believe that such instructional approaches improve student outcomes and prepare them for access to higher status employment and the jobs of the 21st century. These jobs require complex communication skills, higher order thinking, and problem solving orientations (Levy & Murnane, 2004). Research also shows that these instructional approaches lead to better student outcomes (Knapp, Shields, & Trumbull, 1992; Smith et al., 2001; Tharp, 1982). In part, accountability policies seek to create more educational equality by providing all students learning opportunities that were once reserved for middle- and upper-class students (Diamond, 2007).

In an attempt to understand instructional practices in Chicago's high stakes accountability policy environment, we observed 105 language arts, mathematics, and science lessons delivered by 47 teachers across 8 K-8 schools and interviewed teachers about the influences on their practices. We focused specifically on classroom discourse patterns. The results demonstrated that across these schools, students received instruction that was predominantly teacher-centered/didactic. For example, teachers asked most or all of the questions in 93% of the classrooms studied, most students rarely or never interacted with each other in 78% of classrooms, and when students answered teachers' questions, teachers evaluated the correctness of students' responses (or elaborated on correct answers) in 69% of the classrooms. In contrast, teachers followed up to prompt students to think further in only 11% of the classrooms. The

didactic emphasis was particularly pronounced in predominantly Black schools, a finding that is consistent with the results of a teacher survey conducted during the 1996-1997 academic year in Chicago (Smith et al., 2001).

Therefore, in the classroom lessons we observed, most teachers in these schools relied on didactic instructional approaches most of the time. Combined with the findings in the previous section regarding the central role of teachers in their colleagues' advice-seeking networks, it is likely that when teachers seek advice from other teachers they will be getting it from instructors who use mostly didactic approaches.

Institutional Stratification: Variation Across High- and Low-Performing Schools

A final pattern (which emerged from prior work, Diamond & Cooper, 2007; Diamond & Spillane, 2004) is that testing policies play out differently across stratified educational institutions. In particular, schools on academic probation (which tend to educate more low-income students and African American students) are more prone to respond to accountability policies in ways that are not beneficial to all students (Diamond & Spillane, 2004; Mintrop, 2004). For example, these schools targeted educational resources to students who were close to achievement thresholds rather than to all students and targeted professional development resources to teachers in benchmark grades rather than to all teachers (Diamond & Cooper, 2007; Diamond & Spillane, 2004). Schools that have traditionally performed at higher levels are more likely to benefit from these policies and respond as policymakers intend by, for example, allocating educational resources to all students and professional development resources to teachers across grade levels (Diamond & Spillane, 2004). This previous work suggested that probation schools were more likely to reallocate educational resources to certain grade levels, subjects, and students in response to testing data. For example, probation schools used testing data to target students who were close to proficiency cut scores to improve their accountability status (Diamond & Spillane, 2004). Subsequent qualitative work identified similar patterns arguing that schools focused on "bubble kids" who were just below proficiency cut scores (Booher-Jennings, 2005). Still other work suggested that students who are near proficiency cut scores receive more classroom attention and demonstrated greater test score gains (Choi, Seltzer, Herman, & Yamashiro, 2007; Ho, 2008; Neal & Schanzenbach, 2007 both cited in Ho 2008). Although these later works did not identify this pattern with low-performing schools, other scholars suggest that when organizational capacity for change is limited, external pressure leads to responses that are out

of line with the intentions of the policy (Elmore, 2004; Sunderman, 2001). Ho (2008) writes that “schools with limited resources may face the greatest pressure to focus on bubble kids in a zero-sum manner, simply because there are no surpluses available for broader allocation” (Ho, 2008, p. 357).

With regard to recoupling, these patterns are potentially very important. Accountability policies are designed to create tighter links between the policy environment and instruction to improve instructional practices. The responses in low-performing schools demonstrate efforts to improve the schools accountability status but not necessarily to improve instruction. These responses could very well improve a school’s accountability status with no discernable change in instruction. It also demonstrates the potential negative impact of recoupling for educational opportunity because accountability pressures can lead to marginalizing low-performing students.

This finding about differential responses in stratified institutions points to a more general pattern related to institutional resources. Educational resources are unequally distributed across schools serving different populations of students. Schools serving low-income students and students of color have lower human capital among their teaching staffs. As Darling-Hammond, Chung, & Johnson, (2009) write:

On any measure of qualification—extent of preparation, level of experience, certification, content background in the field taught, advanced degrees, selectivity of educational institution, or test scores on college admissions and teacher licensure tests—studies show that students of color . . . are disproportionately taught by less qualified teachers. (p. 614).

A study of the distribution of quality teachers in Illinois found that low-income and minority students are taught by the least qualified teachers (Presley et al., 2005). Presley et al. (2005) combined several measures of teacher quality into a composite index called the teacher quality index (TQI).¹² They found that in Illinois, increases in percentage low income and percentage minority led to decreases in teacher quality. In schools with 0% to 9% low-income students, only 5% of teachers were in the lowest teacher quality quartile. In schools with between 90% and 100% low-income students, 84% of teachers were in the lowest quartile. Likewise, when the percentage of minority students was below 50%, only 11% of teachers were in the lowest TQI quartile. In schools with 90% to 98% low-income students, 70% of teachers were in the lowest TQI quartile, and in schools between 99% and 100% minority students, 88% of teachers were in the lowest quartile. This means that low-income students and

students of color in Illinois are taught by the least experienced and well-trained teachers. Moreover, given that teachers rely on their teaching colleagues for advice and guidance in their instruction, the distribution of teachers is likely to exacerbate educational inequalities. This suggests that a critical issue for policy will continue to be the distribution of highly qualified teachers, an issue on which accountability policies have had little impact to date.

Discussion and Conclusion

Recent research has examined the relationship between the policy environment (characterized by an emphasis on accountability) and classroom instruction. Drawing on neo-institutional theory, some of this work suggests that the press for accountability in education has led to recoupling between the policy environment and the classroom (Hallett, 2010; Spillane, Parise, & Sherer, 2011) whereas other work suggests that these links are somewhat tenuous (Diamond, 2007). Building on this previous research, I have argued that the link between policy environment and the classroom is best characterized as one of partial recoupling. In other words, I have argued that various components of instruction (content, pedagogy, etc.) exhibit stronger or weaker links to various components of accountability (testing, standards, curriculum, etc.) such that “instruction” is partially recoupled with the institutional environment.

Drawing on research conducted in Chicago schools, I highlight organizational features that are likely to affect this link between the policy environment and instruction. I have highlighted four organizational patterns that I argue have important theoretical and practical implications for this connection. First, although I demonstrate that policy environment does penetrate the classroom, I have argued that the relationship varies across subject matter and instructional dimensions. This has implications for our understanding of the social organization of schools and the development and implementation of educational policies. Second, I have discussed the central role of teachers’ colleagues in providing them with guidance on instruction. This centrality is an important feature of these school organizations that has implications for teachers’ instructional practices and presumably for their responses to accountability policies. Third, I have argued that the emphasis on didactic forms of instruction in the schools I studied connects to broader patterns that some argue help reproduce educational and social inequality. Finally, I have argued that the differential responses to accountability policy across high- and low-performing schools and unequal distribution of resources across schools shape the relationship between policy and instruction and have

important implications for educational inequality. Below I elaborate on the theoretical and practical implications of these findings.

Partial Recoupling Between the Policy Environment and Instruction

It is clear that there had been a move in the education sector toward increasing accountability. The argument is that more accountability will lead to better outcomes in the system as a whole. Current “reforms encourage a recoupling between the institutional environment and local practices by making it difficult for schools to enact ceremonial compliance while doing different things behind classroom doors” (Hallett, 2010, p. 57). The work reported here shows that recoupling may be partial—stronger around some instructional areas than others. I have amplified prior work (Diamond, 2007; Spillane & Burch, 2006; Weiss et al., 2003) by showing how subject matter (mathematics versus language arts) and dimensions of instruction (content versus pedagogy) exhibit different levels of coupling with accountability mechanisms. On one level this may suggest that teachers seek to maintain autonomy (and thus loose coupling) around some dimensions of their work that may be more central to their professional identities as teachers. In fact, teachers and administrators emphasized that standards and testing can dictate content but not pedagogy. As one representative administrator stated “I don’t tell them how to teach . . . but they are responsible for covering the same material,” suggesting that teacher autonomy is emphasized in this dimension. Content may be less central to teachers’ identities and thus less threatening to change. As other work has also shown, teachers whose content was influenced by state and district curriculum standards still reported they maintained autonomy over the teaching strategies they used (Spillane & Burch, 2006; Weiss et al., 2003).

There is also some indication that where tighter coupling does exist, it affects instruction in unpredictable ways and may lead to unintended negative consequences. For example, when accountability policies do impact instructional content and pedagogy in schools they often lead to contraction and fragmentation in instruction content and shift toward more teacher-centered as opposed to student-centered instruction (Au, 2007). This highlights the need to attend not only to recoupling processes but also the implications of recoupling for instructional practice. In other words, it is important to understand whether or not the policy environment influences instruction but equally important to detail the processes and outcomes of those influences.

Partial Recoupling, Collegial Interaction, and Institutional Stratification

This work also shows that teachers' colleagues were central resources to them when they sought to change their instructional practices. Unlike the partial coupling between the policy environment and the classroom, teachers turned to their colleagues across both content and pedagogy. These interactions were central to how teachers grappled with problems of instructional practice. However, I have suggested that because teachers' networks are central to their efforts to transform instruction that individual teachers are susceptible to the resources embedded in their networks. The usefulness of turning to grade-level (or departmental) colleagues depends on the resources and capacity of those colleagues. But given patterns of institutional stratification across schools serving different populations of students, there is likely substantial variation in the quality of resources in those networks. As I have already discussed, across a number of measures of quality, teachers of low-income students and students of color are of lower quality (on average) than teachers of middle-income students and White students (Darling-Hammond, 2004). In addition, in the schools we studied (and across the district according to some research), teachers were primarily didactic instructors. Therefore, when they turned to their colleagues for advice about how to become more interactive teachers, the information in their networks may have been limited. As Bidwell (2001) suggests, "the centrality of informal faculty organization to school production should bias the distribution of the capacity for productive responses to pedagogical movements toward those schools in which the need for improving the quality of teaching is the least acute" (Bidwell, 2001, p. 112). In other words, teachers in schools with more faculty resources are likely to respond more effectively to efforts to transform instruction.

The importance of teaching colleagues also highlights the role of collective sense-making processes among teachers and how other actors in schools may mediate the relationship between the institutional environment and the classroom. For example, we have seen how school leaders sometimes shape how accountability policy is responded to in schools (e.g., the press for mathematics and language arts instruction as opposed to focusing on other subjects by principals). Here the role of principals in determining school-level responses to accountability policy is sometimes particularly salient.¹³

I have also suggested that schools that have struggled to meet accountability requirements may be more likely to "game the system" than to transform instruction (Diamond & Spillane, 2004). In this way, accountability policy may affect the allocation of educational resources but do very little to

change instruction in classrooms. Schools may target students who are near proficiency cut scores, engage in inappropriate test prep, and focus on improving outcomes in certain grade levels without changing what and how they teach. This results at least in part from the demand to make rapid and often unrealistic changes to students' outcomes. However, it might also result from the structural qualities of schools that are stratified in terms of important resources for school improvement. If schools serving students of color and low-income students have weaker, less experienced teachers who require dramatic changes to their teaching practices, responding to accountability pressure in such contexts is likely particularly daunting. In such contexts, added pressures and threats are likely to lead to unintended consequences. This reinforces calls for equalizing the distribution of educational resources (including quality teachers) across schools serving different populations of students.

Policy Implications

Accountability policies emphasize creating tighter links between the policy environment and instructional practice. Making these links, however, is complex. Some areas of instruction may be recoupled more easily and completely than others. Policymakers could pay attention to which components of instruction are likely to be influenced by accountability mechanisms and think carefully about leveraging connections in these areas. At the same time, care needs to be taken to avoid the unintended consequences of these links such as subject matter contraction and instructional fragmentation and school level strategies that enhance the schools' accountability status without changing teaching and learning in classrooms.

My work also shows that teachers are embedded in networks of exchange that shape how they teach and likely how they respond to the institutional environment. This suggests that to improve instructional practice, we need to build the capacity of teachers to meet the needs of all students and distribute quality teachers more evenly across our schools. At present, our education system is characterized by institutional stratification with resources concentrated in a subset of schools that serve the most affluent students. Moreover, although instructional improvement is one goal of these policies, at present, there is little meaningful support for instructional improvement. The supports that are provided are not always effective (Finnigan, O'Day, & Wakelyn, 2003). Instead, these policies emphasize sanctions for low-performing schools which may be least well prepared to successfully engage in instructional improvement. To reduce the educational disparities that exist across schools and students, we need to provide more equal learning opportunities

across schools. Simply raising standards and introducing accountability does nothing to address the internal capacity of schools to make change.

Accountability policies seek to improve educational equity by tightening the link between the policy environment and the classroom. I have argued that these links remain partial and identified several organizational patterns that I believe have implications for this link and for issues of educational equity. I argue that researchers and practitioners should attend to these organizational patterns as they seek to understand the impact of accountability policies and develop approaches that will reduce outcome disparities across groups.

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Notes

1. In arguing that instruction is a multidimensional practice I am drawing the work of others (Spillane & Burch, 2006). They write that "even within a given subject area, instruction is not a single dimensional activity. It involves numerous elements including the content, the academic tasks students work on, teaching strategies, ways of representing ideas to students, students grouping practices, and student work assignments" (p. 87). I highlight instructional content and pedagogy (teaching strategies) in this article.
2. Newman, Bryk, and Nagaoka (2001) argue that "authentic intellectual work involves original application of knowledge and skills, rather than just routine

use of facts and procedures. It also entails disciplined inquiry into the details of a particular problem and results in a product or presentation that has meaning or value beyond success in school. We summarize these distinctive characteristics of authentic intellectual work as construction of knowledge, through the use of disciplined inquiry, to produce discourse, products, or performances that have value beyond school” (p. 14).

3. For a more detailed discussion of research methods in the larger study please see Diamond (2007), Spillane (2006), and Spillane and Diamond (2007).
4. Some passages in this section (and passages and data throughout this article) also appear in Diamond & Spillane (2004) and Diamond (2007).
5. There was a subset of teachers who were interviewed but not observed. In those cases, we asked them about changes they had made and then followed a similar line of questioning. For those teachers who were not observed and had not made changes we asked them to imagine that they needed to make instructional changes and then pursued a similar line of questioning.
6. As others have noted, this is a simple way of determining the influence relationships in an organization (Spillane et al. 2008). There are more sophisticated ways to conduct such analyses, but for the purposes of identifying central actors in teachers’ networks the methods used here are sufficient. For a more detailed discussion of measures of centrality in social network analysis, and social network analysis more generally, please see Daly (2010) and Wasserman & Faust (1994).
7. In all cases where evidence has been reported in previous publications, I indicated this in the text.
8. Teachers did not report teaching more advanced or challenging material as a result of the high stakes policy.
9. These findings also reported in Diamond (2007).
10. I argue that in the Chicago context, accountability was less tightly linked to pedagogy than instructional content. However, other work suggests that when pedagogy is influenced by accountability policy, it pushes teachers toward more teacher-centered than student-centered instruction. Au’s (2007) metasynthesis suggests that when accountability policy influenced pedagogy, it led to more teacher-centered as opposed to student-centered approaches. Across the 49 qualitative studies of the curricular impact of high stakes testing he examined, he found that when testing influenced pedagogy it led teachers toward more teacher-centered approaches to instruction (65% of studies) as opposed to student-centered approaches (12.3%). Other studies have shown that pedagogy is affected by accountability policies and pushes toward didactic forms of instruction. In these cases, the policy regime is often pushing in that direction. It is likely that the nature of the accountability regime in particular states has implications for the extent to which there is a tight coupling around pedagogy.

11. It is possible that these interactions increased with the introduction of high stakes testing policies. Although this could be the case, teachers do not report that these influences were tied to testing or standards directly and I have no data from an early time period (prior to high stakes accountability) to make a comparison. Recent research also suggests that the institutional environment can influence the behaviors of organizational members without their being aware of it through processes of internalization of external pressures that influence behavior (Sauder & Espeland, 2009). This could be the case to some extent here but is beyond the scope of this analysis.
12. "The TQI is composed of six different school-level measures that have been shown in previous research to make a difference for students performance . . . teachers' average ACT composite score, teachers' average ACT English score, percent of teachers failing the Basic Skills Test on their first attempt, percent of teachers with emergency or provisional certification, teachers' average undergraduate college competitiveness ranking, and percent of teachers with three or fewer years of experience" (Presley et al., 2005, p. 5).
13. Although principals play a role in interpreting policy messages, when they influenced teachers' instructional content and pedagogy directly (based on teachers' reports of such influences), testing and standards were raised in less than 20% of cases.

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Bio

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