Policy, School Administration, & Teaching: Implementation and Infrastructure

James P. Spillane

Northwestern University

The Distributed Leadership Studies
http://www.distributedleadership.org

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Ideals: Visions for Teaching & Learning

• Intellectually Rigorous Instruction:
  • Balancing principled and procedural knowledge
  • Engaging students in ‘authentic’ disciplinary processes
  • Intellectually rigorous instruction for all students

• Realizing the ideals in classrooms:
  • Academic tasks
  • Classroom discourse
Changing Educational Policy Sector

• Local, state, and federal policymakers focus on instruction.

• Policy discourses and texts press for –
  
  • standards
  • test-based accountability
  • monitoring and measuring individual & organizational performance using student achievement tests
  • instructional transparency and surveillance
  • choice

(Fuhrman, Goertz, & Weinbaum, 2007; Mehta, under review; Rowan, 2006)
Today’s Questions

• *How* do schools respond to changing policy discourses and texts?

• *How do policy ideals* become embedded in local school systems and schools?
Anchoring the Work
The Good, the Bad, & the Ugly

- Re-classify students to shape the student testing pool (Abedi, 2004; Cullen & Reback, 2006; Robinson, 2011)
- Increase students’ caloric intake on testing days (Figlio, 2002)
- Run test prep drills (Diamond & Spillane, 2004)
- Redirect resources to math and reading (Ladd & Selli, 2002)
- ‘Bubble kids’ (Booher-Jennings, 2005)
Some Research Lessons on Policy Implementation

- Policy getting inside the schoolhouse and beyond the classroom door
- Local school districts & schools as policy-making entities
- Locals *construct* understandings about instruction from policy
- District policymakers *and* school leaders not only *sense-makers* but also ‘*sense-givers*’ from and about policy
- Locals *negotiate* the meanings of policy and their entailments for classroom instruction in local practice
A View from the Past

• Classroom instruction loosely coupled or decoupled from:
  • the school’s formal administrative structure
  • government policy

• School administration buffering instruction from external scrutiny

(Bidwell, 1965; Meyer & Rowan, 1978; Weick, 1976)
Organizations are made up of interdependent components that are more or less responsive to, and more or less distinctive from, each other (Bidwell, 1965; Meyer & Rowan, 1977; Weick, 1976; Orton & Weick, 1990)

Coupling as a process rather than a static feature of [school] organizations (Orton & Weick, 1990; Hallett & Ventresca, 2006)
Overview

• School infrastructure redesign central in school leaders’ efforts at coupling government policy with school administrative practice and with instruction

• School leaders and teachers negotiate the meanings of instructional policy in designing and performing organizational routines

• In doing so school leaders reach beyond formal positional authority to deploy various persuasion tactics

• Recognizing the centrality of organization and system infrastructure design and redesign for policy implementation
System and Organizational Infrastructure
Assertions
Papers


## Research Approach: Study Sites

<table>
<thead>
<tr>
<th>School</th>
<th>Student Enrollment</th>
<th>Low Income</th>
<th>Black</th>
<th>White</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Limited English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>1,021</td>
<td>97%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Baxter</td>
<td>1,127</td>
<td>66%</td>
<td>7%</td>
<td>47%</td>
<td>22%</td>
<td>24%</td>
<td>38%</td>
</tr>
<tr>
<td>Kosten</td>
<td>1,569</td>
<td>73%</td>
<td>8%</td>
<td>40%</td>
<td>19%</td>
<td>34%</td>
<td>48%</td>
</tr>
<tr>
<td>Kelly</td>
<td>261</td>
<td>90%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
## Research: Data Collection

<table>
<thead>
<tr>
<th>School</th>
<th>Interviews</th>
<th>Observations of Organizational Routines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>93</td>
<td>39</td>
</tr>
<tr>
<td>Baxter</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>Kosten</td>
<td>62</td>
<td>56</td>
</tr>
<tr>
<td>Kelly</td>
<td>16</td>
<td>11</td>
</tr>
</tbody>
</table>
Research Approach: Data Analysis

- **Phase 1**: in-depth school cases

- **Phase 2**: closed coding of interviews using HyperRESEARCH (e.g., organizational routines, roles and responsibilities, policy)

- **Phase 3**: closed coding of field-notes & meeting transcripts using NVivo (e.g., technical core, policy)

- **Phase 4**: open and closed coding of 22 meeting transcripts from Adams School (e.g., policy, professionalism, social tactics). (Kappa ranged from 0.70 to 0.95)
School leaders worked at aligning their school’s organizational infrastructure with government policy and with instruction by (re)designing organizational routines.

School leaders designed these organizational routines to promote standardization, accountability, & monitoring of instruction.
Organizational Routines

- **Organizational Routines**: “repetitive, recognizable patterns of interdependent actions carried out by multiple actors” (Feldman & Pentland, 2003)

  - **Ostensive Aspect**: ideal form – general idea or script of the routine

  - **Performative Aspect**: routine in practice in particular places, at particular times

- **Improving Practice** in the interaction of the ostensive and performative aspect of organizational routines.

- Concerns about the organizational routine construct – rigid, mundane, mindless, explicitly stored (M. Cohen, 2007)
Designing Organizational Routines

- **Adams School**: Breakfast Club, Grade level meetings, Teacher Talk, Teacher Leaders, Five-Week Assessment, Literacy Committee, and Mathematics Committee

- **Baxter School**: Cycle Meetings, Leadership Team Meetings, Literacy Committee, Math/Science Committee

- **Kosten School**: Report Card Review, Grade Book Review, Lesson Plan Review, Faculty Meetings, Grade Level Meetings

- **Kelly School**: Skill Chart Review, Professional Development
## Organizational Routines at Adams School

<table>
<thead>
<tr>
<th>Routine</th>
<th>Functions</th>
<th>Tools</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Five Week Assessment</strong></td>
<td>- Formative evaluation</td>
<td>- Standardized Tests</td>
<td>- Language Arts Coordinator</td>
</tr>
<tr>
<td></td>
<td>- Teacher Accountability</td>
<td>- Standards</td>
<td>- Assistant Principal</td>
</tr>
<tr>
<td></td>
<td>- Monitor Instruction</td>
<td>- Student Assessments</td>
<td>- Principal</td>
</tr>
<tr>
<td></td>
<td>- Teacher Development</td>
<td></td>
<td>- Teachers</td>
</tr>
<tr>
<td>Breakfast Club</td>
<td>- Teacher Development</td>
<td>- Research Articles</td>
<td>- Language Arts Coordinator</td>
</tr>
<tr>
<td></td>
<td>- Build Professional Community</td>
<td></td>
<td>- Assistant Principal</td>
</tr>
<tr>
<td>School Improvement Planning (SIP)</td>
<td>- Identify Instructional Priorities &amp; Resources</td>
<td>- Previous Year SIP</td>
<td>- Principal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- District Guidelines</td>
<td>- Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Test Score Data</td>
<td>- Teachers (approved LSC)</td>
</tr>
<tr>
<td>Classroom Observations</td>
<td>- Teacher Development</td>
<td>- School Protocol,</td>
<td>- Principal</td>
</tr>
<tr>
<td></td>
<td>- Monitor Instruction</td>
<td>- District Protocol</td>
<td>- Assistant Principal</td>
</tr>
<tr>
<td></td>
<td>- Accountability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real Men Read</td>
<td>- Student Motivation and Support</td>
<td>- Books</td>
<td>- Language Arts Co-ord.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Assistant Principal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Principal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Community Members</td>
</tr>
</tbody>
</table>
The Five Week Assessment

“We were just kind of casually saying that for the majority of teachers they all work very hard, but some of them get very low results when it comes to these achievement tests … So this [Five Week Assessment] was a way to find out ‘Are they learning?’”

(Literacy coordinator)

“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”

(Principal Williams)

“The Five Week Assessment 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.”

(Literacy coordinator)
“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”

(Principal Robinson, 2002)
Designed vs. Lived Organization

**Designed**
Formal positions, organizational routines as represented in formal documents and accounts

**Lived**
Organization as experienced in day-to-day life of organizational members
Assertion # 2

School leaders created organizational routines with which and within which they worked at recoupling policy, administration, and instruction.

Policy featured both indirectly and directly in the performance of organizational routines as:

- School staff performed locally designed routines that more or less mirrored external policy in form and function
- Staff negotiated with policy in making decisions about instruction in performance of organizational routines
## Organizational Routine by Topic, by Grade

<table>
<thead>
<tr>
<th></th>
<th>Adams</th>
<th>Baxter</th>
<th>Kosten</th>
<th>Kelly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy</strong></td>
<td>72%</td>
<td>67%</td>
<td>80%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Instruction</strong></td>
<td>100</td>
<td>88</td>
<td>93</td>
<td>82</td>
</tr>
<tr>
<td><strong>Instruction &amp; Policy</strong></td>
<td>72</td>
<td>67</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td><strong>Language Arts</strong></td>
<td>62</td>
<td>62</td>
<td>24</td>
<td>46</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>36</td>
<td>10</td>
<td>17</td>
<td>36</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td>17</td>
<td>10</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>
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. Jill 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. Dalia 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 the [Jill’s] book. [Grade Level Meeting at Baxter, 10/28/99]

Ms. Jones [mathematics teacher leader] remarks, “I don’t too much worry about this one [kind of] question. But now if it’s four or five questions [about the same content on the state test] I target in on that and I make sure my kids know that…” [Annual Kick-off Faculty Meeting at Adams, 8/31/01]
First I would like to say congratulations to grade levels—all grade levels made some improvements from the Five Week Assessments 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. [Grade Level Meeting]

They [students] 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 ... 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, put your name on the green sticky note [Literacy Committee Meeting, Field Notes, 11/06/00]
Five Week Assessment: Performative Aspect

It [the Five Week Assessment] is first of all so Miss Richards, Miss Andrews and Miss Wilmington can see how the school is doing in general. That’s one of the purposes. And we get an idea of how we’re gonna do on our [state] standardized test. But the main point of the assessments are for teachers; that’s what they’re really for. They’re for you, so you can see what is happening in your classroom and you can see where the students seem to be struggling and you can think about what you need to do and discuss what you need to do to help them.

[Grade Level Meeting, 11/01/02]
A Historical View from the Field

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.”

(Adams Principal)

“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 …”

(Kosten Teacher)

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.”

(Baxter Teacher)
Assertion # 3

Transforming the school infrastructure by designing and implementing new organizational routines met with resistance from staff and the ongoing maintenance of these routines required school leaders to appeal to formal *authority* and to use various *persuasion tactics* to get teacher cooperation.
Pushback in Practice: The Kosten Case

Mrs. 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, … a teacher quickly interjected, “But our scores are going up.” Mrs. Koh responded, “But our students are changing, and we want to insure 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).

Koh tells them the school needs to do something to improve reading, because their scores are down “1.3” on the IOWA tests. In contrast, the reading scores at the other neighborhood school are at 70, “I have to go over there.” Teacher—“I’ll go with you,” and “They must be teaching to the test” because the two schools are “servicing the same population” (Field notes).
## Authority and Persuasion

<table>
<thead>
<tr>
<th>Tactic</th>
<th>% routines code found in</th>
<th>Total # of code uses</th>
<th>Average code use per routine</th>
<th>% of overall coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aligning</td>
<td>86% (19)</td>
<td>280</td>
<td>12.7</td>
<td>57%</td>
</tr>
<tr>
<td>Other Oriented</td>
<td>64% (14)</td>
<td>199</td>
<td>9.1</td>
<td>40.4%</td>
</tr>
<tr>
<td>Authority</td>
<td>82% (18)</td>
<td>195</td>
<td>8.9</td>
<td>39.6%</td>
</tr>
<tr>
<td>Brokering</td>
<td>73% (16)</td>
<td>154</td>
<td>7.0</td>
<td>31.3%</td>
</tr>
<tr>
<td>Agenda Setting</td>
<td>86% (19)</td>
<td>145</td>
<td>6.6</td>
<td>29.5%</td>
</tr>
<tr>
<td>Asserting In-group</td>
<td>68% (15)</td>
<td>92</td>
<td>4.2</td>
<td>18.7%</td>
</tr>
</tbody>
</table>
Tentative Summary

• School leaders transformed their organizational infrastructure, (re)designing organizational routines that embedded emerging institutional ‘logics’ - standardization, accountability, monitoring, transparency.

• These organizational routines also embodied particular representations of instruction and how to improve instruction.

• In practice, these routine were not purely symbolic involving decision-making about substantive technical matters, selectively coupling the technical core with administrative practice and policy.

• School leaders worked at getting teacher cooperation by appealing to formal/positional authority and by using various social tactics to persuade teachers.
Assertion # 4

• School and system infrastructure matters, shaping interactions about instruction among school staff.

• Infrastructure redesign can transform interactions among school staff about instruction shaping - who talks to whom about what.
<table>
<thead>
<tr>
<th>“Cloverville” Study</th>
<th>NebraskaMATH Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>One urban, midsized district in the southeastern United States.</td>
<td>One mid-sized district in Nebraska.</td>
</tr>
<tr>
<td>30 participating schools, K-6</td>
<td>14 participating schools, K-6</td>
</tr>
<tr>
<td>Principal Questionnaire (PQ) and School Staff Questionnaire (SSQ)</td>
<td>School Staff Questionnaire (SSQ)</td>
</tr>
</tbody>
</table>
### School Staff Survey

During THIS SCHOOL YEAR, to whom have you turned for advice or information about teaching Mathematics? Please write full first and last names, and give a brief description of that person's role or position. You do not need to fill all the spaces.

- I have not sought advice from anyone.

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim Spillane</td>
<td>principal</td>
</tr>
<tr>
<td>James Pustejovsky</td>
<td>6th grade teacher</td>
</tr>
<tr>
<td>Virginia Pitts</td>
<td>math coordinator</td>
</tr>
<tr>
<td>Cindy Sigal</td>
<td>roommate - also a teacher</td>
</tr>
</tbody>
</table>

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For additional questions, please refer to the SSQ – Math Advice Questions Page 1.
Social relations as source of resources such as trust, expertise, opportunities for joint sense-making, and incentives for innovation.

On-the-job interactions are associated with the transfer of advice and information – essential in the development of new knowledge.
Network Centrality Measures

- Degree centrality
  - In-degree = the number of people who sought out an actor for advice or information
  - Out-degree = the number of people that actor sought out for advice or information
  - Betweenness centrality = the extent to which an actor links two other actors in the network
- A measure of **brokerage**
Advice and Information Interactions

Woodpecker Math Network 2011-2012
Formal Organizational Structure & Advice & Information Interactions

- Teachers more likely to seek advice from others of same gender and race.

- Prior tie strongly associated with having a current tie.

- Formal leaders more likely to provide advice or information.

- Teachers in the same grade were more likely to receive or provide advice or information.

- Teachers more likely to seek advice about a subject from teachers who reported more PD in that subject.

District Infrastructure Design for Teacher Leadership

- Infrastructure for mathematics instruction
  - New Inquiry-Based Elementary School Mathematics Curriculum
    - Resource and material adoption (Investigations)
    - State standards alignment
    - Unit assessment development

- Infrastructure (re)design for teacher leadership
  - District-wide and school specific organizational routines (e.g., arrays, toolbox, PLCs).
  - Math Coaches in some schools
  - Professional development in math for select teacher leaders
Math Coach (Emily) Facilitates Staff Interactions

2009-10

2010-11

2011-12
“[Emily] really wasn’t our facilitator [last year], though she was my co-worker, just a third grade teacher. I knew she had a wealth of knowledge, I just wasn’t in [her classroom] when she was teaching math. But, now that she’s moved into this math facilitator position, that’s different… She’s been trained in it. And, she’s gone to school for it and she’s a great coach. She knows a lot about math and I trust her that she has a lot of, a wealth of knowledge… She’s the go-to person.”

Angie, Special Education
Professional Development Case (John)

2009-10

2010-11

2011-12
Training Also Serves as a Marker of Expertise

Karen (1st grade)

“Because he’s a second grade teacher….He’s kind of become the math person to see because he’s taken this extra training that nobody else in the building has done, and I know that he’s interested in math so, he’s just one that I’ve gone to that I know focuses very heavily on, I like his beliefs and the way that he has his room set up and the way that he carries himself.”
## Infrastructure Redesign Promoted Advice and Information Seeking in Mathematics

Average In-Degree for Teachers Leaders and Other Teachers, Auburn Park School District

<table>
<thead>
<tr>
<th></th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toolbox Members (6)</td>
<td>1.60</td>
<td>2.80</td>
<td>2.67</td>
</tr>
<tr>
<td>Fundamental Math</td>
<td>4.33</td>
<td>6.00*</td>
<td>6.00</td>
</tr>
<tr>
<td>Participants (9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math Coaches (3)</td>
<td>6.33</td>
<td>16.33**</td>
<td>18.00</td>
</tr>
<tr>
<td>Other Teachers (256)</td>
<td>1.54</td>
<td>1.60</td>
<td>1.36</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01
## Infrastructure Redesign Promoted Brokering in Mathematics

Average Betweenness for Teacher Leaders and Other Teachers, Auburn Park School District

<table>
<thead>
<tr>
<th></th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toolbox Members (6)</td>
<td>5.00</td>
<td>75.80*</td>
<td>48.86</td>
</tr>
<tr>
<td>Fundamental Math Participants (9)</td>
<td>32.44</td>
<td>144.33*</td>
<td>115.42</td>
</tr>
<tr>
<td>Math Coaches (3)</td>
<td>38.67</td>
<td>248.67**</td>
<td>222.97</td>
</tr>
<tr>
<td>Other Teachers (256)</td>
<td>10.85</td>
<td>24.81*</td>
<td>11.90</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01
**Teacher Leadership as a Coupling Mechanism**

Change in Teachers’ Beliefs about and Reported Practices in Mathematics

<table>
<thead>
<tr>
<th></th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beliefs about Mathematics Instruction</strong></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>3.35 (0.5)</td>
<td>3.46*** (0.5)</td>
<td>3.51*** (0.5)</td>
</tr>
<tr>
<td><strong>Reasoning and Problem-Solving Practices</strong></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>2.39 (0.4)</td>
<td>2.52*** (0.4)</td>
<td>2.64*** (0.5)</td>
</tr>
</tbody>
</table>

*Notes: Means are based on teachers from 12 schools with over 70% response rates who responded in every year of the survey. Significant differences are for comparisons to 2009-10.*

***p<.001; **p<.01; *p<.05; +p<.10
Conclusion

• Successful implementation of policy ideals ultimately depends on local practice and practitioners.

• We have to attend not only to classroom practice but also practice at other levels of the education system.

• We cannot design practice, we can only design for practice …

• School and system infrastructure design and redesign are essential in transforming practice …

• Infrastructure once institutionalized is - “invisible” though “ready to hand” (Star, 1998).

• Infrastructure invisibility, taken-for-granted, persistence, and reach …
System and Organizational Infrastructure
Conclusion

• Key Characteristics Shaping Relations between Infrastructure & Practice:

  • Anchoring in and Alignment with Instruction
  • Cognitive adequacy
  • Consistency
  • Communicability, Corruptibility, and Correctability
  • Authority and Power