Designing and Deploying a Professional Learning Community (PLC) Organizational Routine: Bureaucratic and Collegial Structures in Interaction

JAMES P. SPILLANE
NORTHWESTERN UNIVERSITY

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

Funded by National Science Foundation, Spencer Foundation, Institute for Education Sciences, & Carnegie Foundation
Motivating the work

- Research on Professional Learning in Schools and School Systems:
  - Understanding relations between organizational infrastructure and professional learning
  - Role of organizational routines in professional learning on the job
  - Contributing to the Professional Learning Community literature

- From a Cross National Research Perspective:
  - Analysis done for paper in special issue of *Dossier des Sciences de l'Education* on PLCs in different countries
  - Cross national work centered on ‘reform ideas’ and ‘constructs’ used across multiple school systems and nations
  - Efforts to take system level (not just school or national level) similarities and differences into account
Overview

- Conceptual Anchors
  - Professional Learning on the job
  - Theoretical work on PLCs
  - Organizational Routines

- Research Methods
  - Sites and Subjects
  - Data Collection and Data Analysis

- Findings

- Conclusion
Conceptual Anchors
Conceptual Anchor: PLCs as Organizational Routines

- Professional Learning Communities (PLCs):
  - Ongoing collaboration
  - Focused on student learning
  - Making instruction public
  - Reflective deliberations about instruction
  - Shared norms of collective responsibility for student learning

- Organizational Routines:
  - “Repetitive, recognizable patterns of interdependent actions carried out by multiple actors” (Feldman & Pentland, 2003)
  - Two Analytical Aspects of Routines:
    - Ostensive Aspect: General idea or script of the routine
    - Performative Aspect: Routine in practice at particular times
Teachers Learning about Teaching from Peers On The Job

- Importance of on going interactions center on instruction.
- One fifth of teachers' improvement in productivity accounted for by learning from peers.

Knowledge Development in Systems & Organizations:

- Advice and information as building blocks of knowledge
- Structure of social networks key for knowledge development
  - Strong ties critical for tacit and complex knowledge
  - Weak ties adequate for explicit knowledge

Goldhaber & Hansen, 2010; Jackson & Bruegmann, 2009; Eraut & Hirsh, 2007; Frank et al., 2004; Davis, 2003; Little, 2003; Smylie, 1995
Research Approach
The Case: Using a PLC Routine to Transform Professional Learning

- School System and School Organizational Infrastructure Redesign
  - New mathematics curriculum
  - Professional development of math teacher leaders
  - Strategic selection of teacher leaders
  - Creation of math coach position in some schools
  - System and school organizational routines for professional learning
    - PLC routine at each grade level
    - Toolbox routines for each school subject at system level
    - Arrays routine at system level
1. How does a local school system (LEA) design and deploy a PLC organizational routine?

2. How does the PLC organizational routine structure interactions among teachers about mathematics instruction over time?
Study Design

- Mid-sized LEA: Auburn Park
- Interviews with purposeful sub-sample of 34 staff in five Auburn Park schools in 2012 and 2015

Survey Response Rate in 2013

- In 2013, 410 staff, 94% mean response rate, ranging from 87% to 100% depending on the school
- In 2015, 96% mean response rate, ranging from 85% to 100% depending on the school
Social Network Instrument

During THIS SCHOOL YEAR, to whom have you turned for advice and/or information about CURRICULUM, TEACHING, and STUDENT LEARNING? Please write full first and last names. You do not need to fill all the spaces.

Please consider all forms of communication including face-to-face, via e-mail or telephone, etc., and include individuals across content and school/district/outside roles. You may list people you named as your close colleagues as well.

☐ I have not sought advice from anyone. Do not check this box if you provide a name(s) below.

1. James Spillane
2. Megan Hopkins
3. Katie Mertz

Please Note: No names or identifying information will ever be revealed in reports produced from these data.
To examine relevancy of PLC to teachers’ advice and information interactions about mathematics - compared frequency of interactions within PLCs to interactions outside of PLCs

To explore the relationship between bureaucratic and collegial arrangements – examined association between PLC membership and frequency of collegial ties, regressing frequency of collegial ties on same PLC membership using four additional variables as controls:

- Math advice and information ties (to account for curriculum-related ties)
- Same gender
- Same school
Qualitative Analysis

- **Phase 1**: closed coding - ‘macro codes’ – the *how*, the *why*, and the *what* of interactions about instruction

- **Phase 2**: open coding of all data coded in Phase 1 to identify themes and patterns
- **Phase 3**: closed coding of themes from Phase 2

- **Phase 4**: closed coding of data for all references to PLC

- **Phase 5**: open coding of all data identified under the PLC code identifying themes

- **Phase 6**: closed coding of all data for 10 themes from Phase 5
  - Collegial, bureaucratic, student learning, etc.

- Double coded one third of interviews for inter-rater reliability (kappa coefficients of .72 and .99)
Findings
Description of PLC

- Auburn Park’s PLC routine as *designed*: Ostensive Aspect
  - Focused on grade level teams with specialists and/or principal
  - Mandated to meet for 45 minutes weekly
  - Each month: one week on ELA, math, student issues, and issue of choice

- Ninety-eight PLCs nested in 14 elementary schools

- An average of 3.06 teachers per PLC
Findings: Three Assertions

1. Auburn Park’s PLC routine structured advice and information interactions about mathematics instruction among school staff.

2. Bureaucratic and collegial arrangements worked in tandem to support the implementation and performance of the PLC routine.

3. The interaction of bureaucratic and collegial arrangements in the PLC routine varied over time and within schools.
Finding #1: The PLC routine in Practice

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
<th>A few times per year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within PLC</strong></td>
<td>98.6%</td>
<td>90.6%</td>
<td>35.0%</td>
<td>9.1%</td>
</tr>
<tr>
<td></td>
<td>(213)</td>
<td>(164)</td>
<td>(7)</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Outside of PLC</strong></td>
<td>1.4%</td>
<td>9.4%</td>
<td>65.0%</td>
<td>90.9%</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td>(17)</td>
<td>(13)</td>
<td>(10)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(216)</td>
<td>(181)</td>
<td>(20)</td>
<td>(11)</td>
</tr>
</tbody>
</table>

$\chi^2 (3, N=428)=164.42, p=.000$. Note: Percentages are column percentages; counts in parentheses. Based on survey responses of 251 general and special education teachers.
Finding #1: PLC Structuring Interactions about Instruction

We plan once a week. When the unit begins we'll look at our long-term plan and where do we need to go and how long do we have. But then weekly we'll go through the day-by-day stuff.

Becky, Grade 4 Teacher
Chamberlin Elementary

Just before each unit we sit down and we talk about what are the objectives, what do the students have to learn, what activities can we do to ensure this... so we can ensure success of all the students and they're able to understand that.

Carol, Grade 1 Teacher
Bryant Elementary
Finding #2: Bureaucratic & Collegial Structures Working in Tandem

PLCs are required weekly; grade level meetings are just when my team decides.

Loretta, Grade 2 Chamberlin

We get a weekly plan from our principal and she tells us whether we’re talking about assessments that week, or whether we’re talking about curriculum.

Katie, Grade 6 Chavez

It’s been in a way mandated. It’s kinda been like, ‘You will work as a team whether you want to or not. This is your team so figure it out.’

Evelyn, Special Education Teacher Kingsley
Finding #2: Bureaucratic & Collegial Structures Working in Tandem

Leaving the [PLC] meeting kind of depends on what the theme for it is; when I’m talking about my kids, I lead the meeting and then everybody kind of pipes in and we work on ... we all put in our two cents worth ... we all put in our ideas and then kind of come together; it’s a collaborative effort.

Brenda, Kindergarten Ashton

There are agendas set [for the PLC], that list right there. It’s mapped out per week and then as a [PLC] team they determine what to talk [about] ... They’re responsible as a grade level team for inviting a specialist...math or literacy facilitator, counselor, whatever adult they think would be helpful in their brainstorming.

Eloise, Principal Ashton
Finding #2: Bureaucratic & Collegial Structures Working in Tandem

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same PLC</td>
<td>0.203***</td>
</tr>
<tr>
<td>Math Tie</td>
<td>-0.098***</td>
</tr>
<tr>
<td>Same Race</td>
<td>-0.103**</td>
</tr>
<tr>
<td>Same Gender</td>
<td>-0.127***</td>
</tr>
<tr>
<td>Same School</td>
<td>1.056***</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.004***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.825</td>
</tr>
<tr>
<td>$n$</td>
<td>251</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. Results are based on 2000 permutations and a random seed of 214.
Finding #2: Bureaucratic & Collegial Structures Working in Tandem

My goal is to be at every PLC...I would say I’m a team member, hopefully I’m another resource, ... for when we’re looking at curriculum, to help guide them, and I am definitely not the leader of the PLC.

Jim, Principal at Kingsley

I have a very low profile in the PLC meetings. I purposely sit in the corner.

Jillian, Principal at Bryant
Finding #3: Variation in Deployment of Bureaucratic and Collegial Structures

In the beginning we were very tightly managed, that ‘I want you to talk about kids at this time’, ‘I want double scoring’... so it was more tightly managed... when we first started to more loosely as teachers started taking control of their own groups. I attended as frequently as I could...trying to get the groups to be more data driven, be more diagnostic.... ‘Georgia’ can’t read. Well why can’t ‘Georgia’ read?’...and so trying to have those kinds of conversations.

Georgia, Principal at Bryant

Over the years it’s changed as we first moved into the [PLC] process I was a lot more involved as far as setting up what they would talk about, leading the discussions, providing them things to read as we learned...what and how a PLC effectively works. And the teams, their capacity to work as purposeful teams has really grown over time so they develop their own agendas...it’s left up to them. They have ownership.

Mary Beth, Principal at Chavez
Empirically, our analysis captures how a PLC organizational routine structured interactions among school staff about mathematics instruction.

Theoretically, our analysis documents how bureaucratic and collegial arrangements work in tandem in the deployment and performance of the PLC routine.

- It is not a matter of either bureaucratic or collegial authority.
- Need to eschew simplistic either/or accounts about instructional improvement.
Cross System and Cross National Research on Infrastructure and Practice

- PLC as case of something - organizational routines and school system and school organization infrastructure redesign.

- Learning by comparing efforts to design, deploy, and perform PLC organizational routines in:
  - a) different school systems, that are nested in
  - b) different nation states, so as to learn
  - c) not simply what works, but how it works,

- Interplay of bureaucratic and collegial arrangements likely differs depending on school systems, nested in different nation states, and situated in different time periods.
More at:

-  http://www.distributedleadership.org

-  http://www.distributedleadership.org/DLS/Presentations.html