The Distributed Leadership Studies: A Case Study of Research *in* and *for* School
Practice

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Over the last decade, researchers in The Distributed Leadership Studies (DLS) at
Northwestern University have been developing a framework for examining school leadership
and management with an emphasis on their relations to classroom instruction
(http://www.distributedleadership.org). Drawing on theoretical and empirical work in distributed
cognition and socio-cultural activity theory, our distributed perspective involves two aspects –
principal plus and practice (Spillane 2006; Spillane, Halverson, and Diamond 2001, 2004). The
principal plus aspect acknowledges that the work of leading and managing schools involves
multiple individuals. The practice aspect foregrounds the *practice* of leading and managing,
framing this practice as emerging from the *interactions* among school leaders and followers,
mediated by the situation in which the work occurs. Practice is more about interaction than
action. The school subject matter – mathematics, science and language arts – has figured
prominently in our efforts to build knowledge about and for the practice of leading and
managing.

In this chapter, I use our hypotheses-generating research and development work
as part of the Distributed Leadership Studies (DLS) as an example of connecting research
with practice and policy. I begin by briefly describing our research and development
work on school practice and give attention to our various goals. I then describe some of
the ways in which the DLS have forged connections with policy-makers and practitioners

through three different partnering experiences. I next consider, in more detail, one facet

of our work involving the use of our research findings to engage policymakers and

practitioners in diagnosing and design work so as to develop practical knowledge – 'how

knowledge' as distinct from 'what knowledge.' I conclude by reflecting on some of the

challenges the DLS has encountered in engaging partners in policy and practice.

The DLS Research and Development Program

In my usage, a distributed perspective is not a blueprint for leading and managing

but rather a framework for researchers and practitioners to use in diagnosing the practice

of leading and managing and designing for its improvement (Spillane 2006; Spillane and

Diamond 2007). Keeping with this perspective, the Distributed Leadership Studies are

committed to developing knowledge about leading and managing, especially knowledge

for practice – knowledge of the <u>how</u> of leading and managing. While there is a sizable

knowledge base about the <u>what</u> of leading and managing, we know less about the <u>how</u> –

the practical knowledge that school leaders use in their day-to-day practice. For example,

research informs us that monitoring instruction is important for instructional innovation

and improvement (Firestone 1989). Still, the available knowledge base has much less to

say about the <u>how</u> of monitoring instruction. Without a rich understanding of the <u>how</u>, it

is difficult for policy-makers and researchers to contribute to improving school leadership

and management.

One component of work done by the DLS involves designing and validating

research or diagnostic instruments such as logs of practice and social network instruments

(Camburn, Spillane, and Sebastian under review; Spillane and Zuberi 2009; Pitts and

Spillane 2009; Pustejovsky et al. in press; Pustejovsky and Spillane 2009). While these instruments are designed for gathering data, policy-makers and practitioners can also use them to generate data that support reflection in and on the practice of leading and managing. We also work directly with schools and districts in our studies to share research findings so that they may afford policy-makers and practitioners the opportunity to reflect on practice using data from their own schools.

A second component of our work involves describing and analyzing leadership and management arrangements in schools (Spillane and Diamond 2007; Spillane, Camburn, and Pareja 2007; Spillane, Hallett, and Diamond 2003). For example, our research shows that, in addition to the principal, a cast of others is involved in leading and managing instruction. This includes assistant principals, curriculum specialists, mentor teachers, and department chairs (Spillane 2006; Spillane and Diamond 2007; Spillane, Hunt, and Healey 2009). Moreover, leadership and management arrangements in elementary schools differ depending on the school subject (Spillane 2006, 2005). This component also involves exploring relations between leadership and management arrangements, organizational conditions, and instructional innovation. This hypotheses-building work involving mixed research methods focuses on relations between school leadership and management and instructional improvement. While other researchers are the primary audience for these research findings, we also work to engage policy-makers and practitioners indirectly and directly with our findings. We now turn to focus on those efforts.

A third component of the DLS work, especially critical when it comes to developing knowledge for practice, involves engaging district policy-makers and school

practitioners who participate in our studies with research findings for their schools. Specifically, we compiled reports for individual schools and then conducted workshops that focus on the findings in the individualized reports. Our workshops are designed to engage practitioners in diagnostic and design work using the data for their own school.

A fourth component of the DLS work involves designing curriculum modules that engage school staff in diagnostic and design work using the distributed perspective. Our research on school leadership and management is widely featured in these modules. First, we use cases from our work to engage participants in understanding the entailments of taking a distributed perspective to school leadership and management (Spillane 2006; Spillane and Diamond 2007; Spillane and Coldren in progress). Second, we use findings from our research to engage participants in diagnostic work from a distributed perspective. Third, we use our research or diagnostic instruments to help participants transfer the findings from our empirical case studies to their own schools.

Our work in the DLS has been made possible by establishing connections with district policy-makers, school practitioners, and other colleagues engaged in research and development. The next section features descriptions of these connections by exploring how they have facilitated our efforts and identifying similarities and differences in our partnering efforts.

Connecting Researchers, Policymakers and Practitioners

Over the past decade the DLS have worked with several partners in implementing research and development efforts. Some of these partnerships involve direct connections to policy-makers and practitioners whereas others involve indirect connections mediated by other research and/or development projects. Below are three examples – Chicago

Public Schools (CPS), Math in the Middle (M2), and Penn Center for Educational Leadership – to illuminate the different ways in which the DLS have forged connections to policy and practice.

Chicago Public Schools (CPS)

Our work with CPS has taken various forms—all involving direct connections to practitioners and district policy-makers. Some CPS elementary schools (K-8) were the original study sites for DLS data collection, starting in 1999.[1] These partnerships were negotiated with individual schools and involved conventional researcher-practitioner relations for data collection. Further, with support from the Carnegie Corporation, we continued our work with distributed leadership at other CPS sites and developed teaching modules designed to engage school leaders in the diagnosis and design at the heart of leading and managing.[2] These modules used findings from our earlier research as well as case studies we developed for teaching purposes based on data analysis. We used the principles of design research, engaging in a process of *progressive refinement* in which our modules were tested and refined based on the results of prior pilot studies (Collins, Joseph, and Bielaczyc 2004). After we piloted each module with teams of school leaders from two CPS schools, the leaders participated in focus groups conducted by an independent researcher to reflect on the particular units. Based on feedback from the

focus groups, the instructor's notes on the session, as well as feedback from two project researchers who observed each session, we revised the modules. Using the modules with other schools in other districts, we continued to redesign based on feedback from participants while keeping with our distributed perspective on leading and managing.

In addition, and with funding from the NSF's RETA program, we piloted multiple prototypes of the School Staff Social Network Questionnaire (SSSNQ) and the Leadership Daily Practice (LDP) log in a purposeful sample of CPS elementary and middle schools (Spillane and Zuberi 2009; Pitts and Spillane 2009; Pustejovsky et al. in press; Pustejovsky and Spillane 2009).[3] The SSSNQ, a web-based survey instrument, was designed to collect data about leadership and management arrangements for mathematics and other subjects in elementary and middle schools (see Figures 1-3). For example, the SSSNQ uses social network items to gather data about the advice and information networks of school staff with respect to core school subjects. Conceptualizing leadership as social influence relations about instruction, the SSSNQ uses a social network approach to measure leadership interactions.

Next, we next used the SSSNQ with twenty-three Chicago public schools (both K-8 and middle schools) that were participating in a leadership and school-restructuring initiative called the Cluster 4 Middle Grades Program (C4MGP). Here our partnering arrangements shifted from working with individual schools directly to working with schools through a district-sponsored initiative. Our work involved two distinct components. First, the CPS Office of Mathematics and Science used our modules as part of a nine-month training program for 23 school principals and their Area Instructional

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[3] This work was funded by the U.S. National Science Foundation (RETA EHR-0412510).

Officers (AIOs).[4] The DLS modules addressed the leadership component of the C4MGP professional development, with the other two components focusing on mathematics and language arts respectively. Second, these 23 schools were offered the opportunity to have their staff to take the SSSNQ instrument as part of the C4MGP effort. In spring 2007 we administered the survey to 19 of the schools that had participated in the C4MGP workshops (4 schools declined our invitation). In June of 2008, we administered the SSSNQ again, though only to those twelve schools that had a response rate over 70% in 2007. We repeated the data collection with a smaller sample, again based on response rates, in spring 2009.

After each data collection period, the schools with response rates over 80% received individualized reports based on our analysis of the data and as well as a workshop designed to engage study participants in interpreting the data for their school. For example, I conducted a three-hour workshop in December 2008 for school principals and teacher leaders from participating schools based on their results from our analysis of the 2007 and 2008 data generated by the SSSNQ. The session involved participants using data from one participating school to identify patterns of change from one school year to the next as well as activities that engaged them with the data from their own schools. At the end of the session, participants were given an assignment to use the advice and information network about mathematics teaching from their school to identify shifts in interaction patterns over time and consider the implications of these changes for their efforts to improve mathematic education. In February 2009, each team presented

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their school with a diagnosis of the situation based on their interpretation of the data as well as their prognosis for improvement.

Math in the Middle (M2)

With funding from the NSF's RETA program, the DLS collaborated with Professors James Lewis and Ruth Heaton, co-directors of Math in the Middle at the University of Nebraska at Lincoln (UNL) in 2006 to collect data about leading mathematics instruction in middle schools. Funded by a Math-Science Partnership grant from the National Science Foundation (NSF), Math in the Middle offers a 25-month Master's degree program for outstanding middle school math teachers who become M2 associates.[5] These M2 associates are intended to serve as leaders for mathematics education in their schools and school districts. Working with Math in the Middle researchers, we tailored our SSSNQ so that we could gather data relevant to their efforts to improve the leadership capacity for middle school mathematics.

Starting in spring 2006, Math in the Middle (M2) administered the SSSNQ annually for three consecutive years to 96 teacher associates across three cohorts that had participated in the Math in the Middle program since its inception. They also administered the SSSNQ to teachers in all 10 middle schools in Lincoln, Nebraska in 2007 and again in 2008 in order to investigate the roles of the M2 teacher associates in

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[5] The Math in the Middle Institute Partnership is funded by a Math-Science Partnership grant from the National Science Foundation (NSF MSP Grant EHR-0142502), with additional support from the University of Nebraska at Lincoln's Math and Science Teachers for the 21st Century Program of Excellence.

their school setting. The longitudinal data enabled us to analyze changes in formal and informal leadership for mathematics education in these schools over time with particular attention to the role of the M2 associates.

By comparing the subset of M2 associates—between 1 and 4 in each middle school—to teachers with similar leadership roles, we gain insight into how M2 associates act as leaders within their schools. For example, M2 associates in the ten Lincoln middle schools reported more sources of advice from outside of their school buildings compared to teachers with similar roles. M2 associates who are math teachers list an average of 2.1 external advisors in the 2007 survey, compared to other math teachers who list an average of 0.7 external advisors (Pustejovsky et al. in press). Research has demonstrated that access to information from outside an organization's boundary is beneficial for innovation and productivity (Coburn and Russell 2008; Burt 2000; Reagans and McEvily 2003). Even more interesting, M2 associates tend to be named as advisors by more individuals within their schools than their colleagues. In the 2007 survey, for example, M2 associate math teachers are named as advisors by an average of 8.8 colleagues; in comparison, other math teachers are named as advisors by an average of 7.0 colleagues. While we cannot draw causal claims about relations between the Math in the Middle (M2) program and leadership arrangements for mathematics education in participating schools due to the absence of baseline data, our analysis does suggest that M2 associates are behaving as intended by the program designers. Our analysis suggests that M2 associates both draw upon and contribute to an advice network, the boundary of which is defined by participation in the M2 program.

Moving beyond 'what knowledge' to engage study participants in developing and

articulating 'how knowledge,' we also generated individualized reports for each Lincoln middle school based on our analysis of the data generated by the SSSNQ and conducted presentations to engage the middle school principals with the data from their school. Our work here is similar to the individualized reports written for CPS schools. Here again our primary purpose was to engage practitioners in diagnostic work from a distributed perspective using data from their own schools.

Penn Center for Educational Leadership

The DLS has also worked with John DeFlaminis and Jim O'Toole of the Penn Center for Educational Leadership in the design of a leadership development program for teams of leaders from schools in the Philadelphia Public Schools (PPS) that takes a distributed perspective to the work of leading and managing schools.[6] A key component of this work has involved using our DLS leadership development modules with multiple cohorts of school leaders from Philadelphia Public Schools including elementary, middle, and high school leaders. Our work with PPS has been mediated entirely by the Penn Center for Educational Leadership; the DLS modules are only two of several modules used in their program, though the distributed perspective on leading and managing is incorporated throughout the curriculum.

Research for Practice: Priming the Development of 'How Knowledge'

A key feature of the DLS is our effort to connect with policy and practice not only through the conventional means of generating research findings – 'what knowledge' – but

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[6] This initiative is funded by the Annenberg Foundation.

also by creating tools that enable practitioners to reflect in and on their practice so as to develop and make explicit practical knowledge – 'how knowledge' – about leading and managing. The DLS modules are one obvious way in which we strive to do this. In these modules, we use data from our work to engage practitioners in diagnostic and design work using a distributed perspective. We employ the 'case study approach' frequently in the modules and present the empirically grounded cases in various forms. One prominent form is written narratives generated from data from a particular school and focused around a particular issue (e.g., diagnosing problems in practice, student achievement data use in decision-making).

Social network diagrams or maps based on data from real schools are another form of case study in the modules that is especially capable of engendering dialogue among participants about practice (see Figure 4). We have school principals or teams of leaders from particular schools examine advice- and information-seeking networks in particular schools for particular school subjects. Comparing and contrasting networks between schools or between subjects within schools, participants generate hypotheses about what might be going on in the school and suggest additional diagnostic questions they would like to pursue. Using simulations we press practitioners to engage in design work grounded in their diagnosis of particular situations (e.g., 'using the network data from these two schools, imagine you were going to introduce a new mathematics curriculum in these two schools, how might your implementation strategy differ and why?').

Moving beyond engaging practitioners with cases of other schools, we also use our various research and diagnostic instruments to facilitate the transfer of knowledge

and skills from anonymous school cases to participants' own schools. For example, after using social network diagrams from case study schools to diagnose interaction patterns about key school subjects and design improvement efforts, we engage participants in a task where they complete the social network instrument for their own leadership team. They then map their social network data and compare their map to the maps from other schools, identifying commonalities and differences and developing hypotheses about these patterns (e.g., most of the organizational routines in our school do not involve teachers from different grades and that may account for why there is very little communication about mathematics across grade levels).

We have also worked to engage study participants with data from their own schools by developing individualized school reports based on our data and then conducting structured workshops that engage school leaders in diagnostic work using these reports. For example, Figure 4 provides an example of the sort of network data maps we generate for individual schools. Examining Figure 4, a school leader might notice that node A is critical in linking mathematics teachers with special education teachers, whereas the dyadic relationship between nodes B and C are a key link, though not the only one, in mathematics advice and knowledge relations between middle grade mathematics teachers and sixth grade teachers who are generalists. Indeed, practitioners might wonder why interactions among staff about mathematics education in this middle school are chiefly, though not exclusively, contained either among middle school teachers or among sixth grade teachers with fewer interactions across these levels of the school organization.

Possibilities and Problems in Partnering

The three examples of partnering discussed in this chapter capture some of the ways in which the DLS have forged connections between research and development efforts, on the one hand, and policy and practice on the other. There are many similarities across the three cases but also important differences. In some cases, we have forged direct ties to district policy-makers and school practitioners as exemplified in our work with CPS. In other cases, as demonstrated by our work with Math in the Middle and the Penn Center, we have forged ties with practitioners and district policymakers indirectly through a third party – a university-based research and/or development project working in collaboration with a local school district. For example, in our partnership with Math in the Middle, connections between DLS and school practitioners were indirect, enabled by our colleagues at the University of Lincoln, Nebraska (ULN). From the outset, beginning with the tailoring of the SSSNQ questions and items, our colleagues at ULN informed our efforts – both in research and development. By partnering with this in-state and locally known research and development entity, the DLS gained access and legitimacy with local policy-makers and practitioners. We believe that these partnering efforts improved both the relevance of our instruments to state and local conditions and out-of-state response rates to the SSSNQ.

Our partnering efforts went beyond a classic collaboration across institutions or disciplinary traditions and thus encountered some partnership difficulties with respect to connecting with developers, policy-makers, and practitioners. For example, though our research designs are chiefly intended to generate hypotheses rather than test them, many district policy-makers attempted to draw causal inferences and look for any significant

school-level variables that might account for particular outcomes. As researchers, we faced the challenge of maintaining the boundaries of our study designs and research findings, while also fostering good relations with our partners. In this respect, the efforts of the DLS to connect with policy-makers and practitioners are not unusual.

On the other hand, a somewhat unique obstacle emerged from our efforts to use data from our research studies to engage practitioners and policy-makers in the development of practical knowledge through diagnosis and design using a distributed framework. In writing research reports based on empirical data from a particular school, we were faced with the challenge of balancing our desire to provide relevant data to school leaders with the imperative to protect study participants' confidentiality. Study participants' confidentiality must be protected not only for compliance with the requirements of Human Subjects Research Boards, but also to maintain a trusting relationship with study participants. If participants feel that the promise of confidentiality has been breached in the sharing of findings with their school, they are unlikely to participate in future rounds of data collection or may participate in ways that are not authentic. These challenges were heightened in our case because the social network items on the SSSNQ ask school staff to name those from whom they seek advice and information about core aspects of their classroom work. Protecting the confidentiality of study participants in this situation is neither simple nor straightforward. For example, if a teacher identifies a colleague as a source of advice, but that colleague has not consented to participate in the research – did not respond to the survey - can that relationship be considered in analysis?

These confidentiality problems are more pronounced when it comes to sharing

social network data from a school with the leaders from that school so as to engage them in the relevant diagnostic and design work. In order to share findings from our analysis of the social network data, we constructed categories of school staff so that the categories included enough staff members to make it impossible to determine the identity of any one individual staff member. For example, see Figure 4, which captures the sociogram depictions for one school used in the DLS that with which we have shared back data with study participants. Here, circles representing teachers are colored according to the teacher's role, so that there are at least five individuals in any one category. Similarly, in quantitative analysis of the network data, we reported averages across categories containing at least five individuals. In our experience, social network data is a valuable tool for engaging school staff in diagnostic work about leadership and management in their schools, but it also raises concerns about confidentiality (Borgatti and Molina 2003).

In presenting these data to school practitioners, we observed that, when presented with a sociogram representation of the social network data from their school, the impulse is to try to assign names to each of the nodes (e.g., node B or C in Figure 4). While we are always troubled by such efforts that attempt to breach confidentiality, we feel that such activity is speculative at best because the data sufficiently conceal the identities of individual participants, even if they provoke guessing games. We counseled study participants accordingly. To discourage misinterpretation of the data, we continued to emphasize during our share-back presentation that the social network data, like all survey measures, contain measurement error, and should be interpreted as one—potentially limited—representation of interactions among school staff.

Conclusion

In our work on the Distributed Leadership Studies, we sought to understand leadership and management in schools as well as to engage practitioners and policy-makers with this work in order to improve the practice of leading and managing. We employed numerous research methods to develop hypotheses about leading and managing instruction – research findings that center on 'what knowledge.' We also ventured beyond generating conventional research findings for consumption by fellow researchers and focused on reaching practitioners and policy-makers to develop 'how knowledge.' Our research and development work, enabled by partnering with practitioners, policy-makers, and researchers, has centered on designing tools to enable the development of practical knowledge about leading and managing instruction in mathematics and other school subjects. While we hope that this work around knowledge of practice has, and will continue, to inform policy and practice, it has likewise informed our work as researchers, pressing us to tailor our research methods in order to design learning opportunities for practitioners and policymakers.

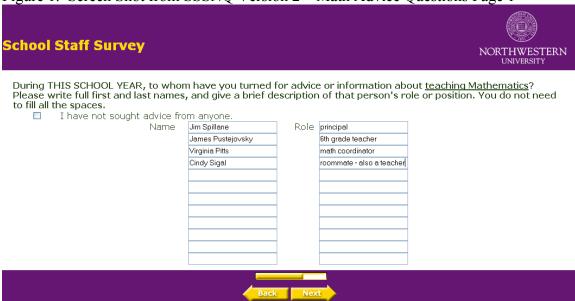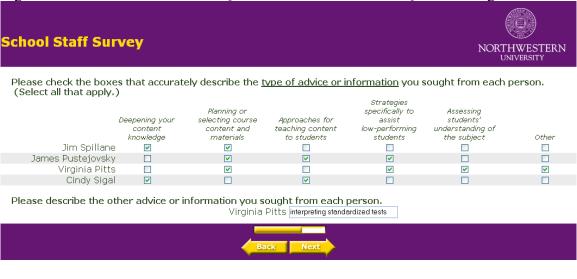Figure 1. Screen Shot from SSSNQ Version 2 – Math Advice Questions Page 1

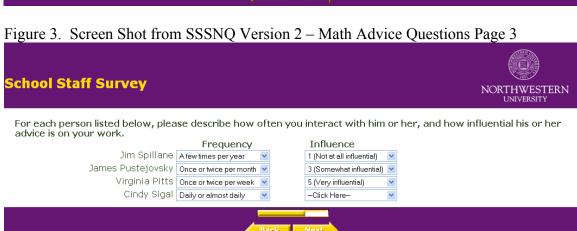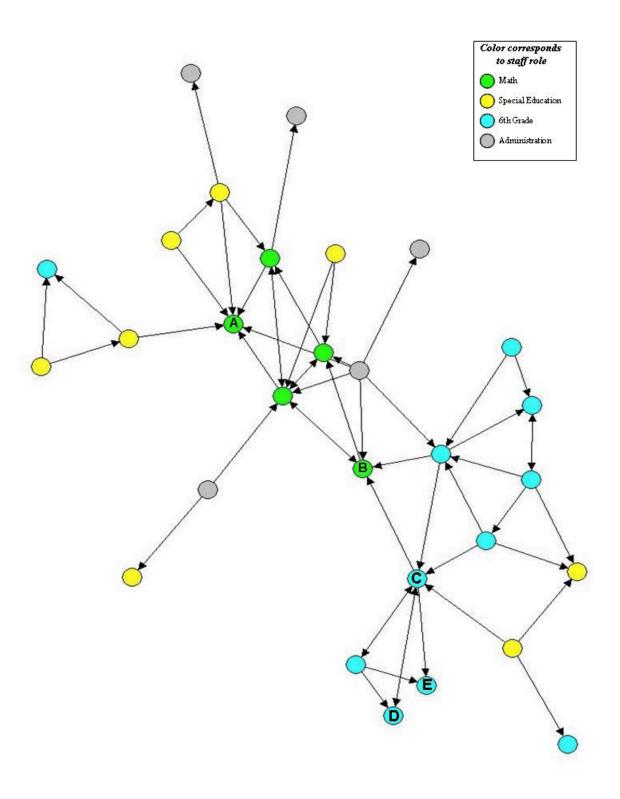Figure 2. Screen Shot from SSSNQ Version 2 – Math Advice Questions Page 2

Figure 3. Screen Shot from SSSNQ Version 2 – Math Advice Questions Page 3

Figure 4: Sociogram of Middle School Mathematics Advice/Information Network

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