Leading & Managing Classroom Instruction

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A Distributed Perspective

The Distributed Leadership Studies (DLS) have been developing a framework for examining school leadership and management with an emphasis on classroom instruction (www.distributedleadership.org). Our distributed perspective involves two aspects – principal plus and practice. The principal plus aspect acknowledges that the work of leading and managing schools involves multiple individuals. The practice aspect frames the *practice* of leading and managing as emerging from the *interactions* among school leaders and followers, mediated by the situation in which the work occurs.

The Distributed Leadership Studies are committed to developing knowledge about leading and managing, especially knowledge for practice – knowledge of the *how* of leading and managing. Our work involves many components. One key component of the work and the focus of this poster involves designing and validating research or diagnostic instruments including logs of practice and social network instruments. 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.
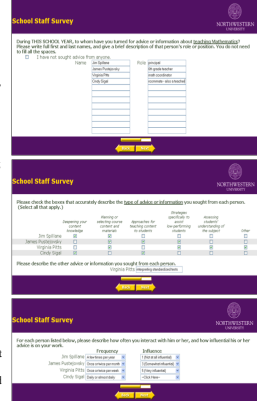
Research and Diagnostic Instruments

Designing and validating instruments that gather data on school leadership is central to our work. Our focus has been on two types of instruments, social network surveys and logs of practice. The former are web-based questionnaires that collect data about leadership and management arrangements. The latter are registers in which leaders record their daily routines, practices, and experiences.

The **School Staff Social Network Questionnaire (SSSNQ)** is an online survey that asks participants to identify who they have gone to for advice or information about teaching particular subjects over the school year. See Figure 1. Multiple iterations of the SSSNQ have been piloted, but four standards remain consistent: 1) We ask about advice- and information-seeking behavior, 2) We focus on subject-specific interactions, 3) We ask participants about their advice networks in the past year, and 4) We ask about how frequently advice is sought. The first SSSNQ was piloted in 22 schools, six of which were then targeted for follow-up interviews. The second iteration involved cognitive interviews at ten schools in which participants were asked to "think aloud" as they completed the survey. Finally, a third version was administered that randomized the name generator portion to measure question-order effects.

Figure 1. Screen-captures from the sequence of questions in one name generator and name interpreter

Our logs of practice include the Experience Sampling Method (ESM) log, the End of Day (EOD) log, and the Leadership Daily Practice (LDP) log. The ESM instrument utilizes a time sampling method that captures principals' behaviors at a particular point in time in a particular setting by paging them randomly 15 times during the day and alerting them to fill out a brief questionnaire on a handheld computer. The EOD log is an hourly calendar in which, at the end of the day, principals report how much time they spent in nine general categories of activity during each hour of the day between 6 a.m. and 7 p.m. In this poster, we focus on the LDP log, which was informed by the validation work and results of the ESM and EOD logs.

The **LDP log** is designed to probe deeper into the practice of a school leader by focusing more on interactions. For a 10-day period, study participants from four urban schools were asked to log one interaction per hour that was intended to influence their knowledge, practice or motivation or in which they intended to influence a colleague. Participants were also asked to note what prompted the interaction, who was involved, how it took place, what transpired, and what subject it pertained to. A sample of the participants were also observed as they conducted their work and were interviewed at the end of the school day.

Social Network Instrument Pilot

To examine the validity of the survey, we conducted three studies. The first study involved administration of Version 1 of the SSSNQ in 22 schools and interviews with a sub-sample of school staff in six of these schools. Our intent with this first set of interviews was to determine whether the advice-seeking interactions that the interviewees described were instances of leadership for instruction operationalized as social influence interactions. The second study involved cognitive interviews in which interviewees were asked to "think aloud" as they completed Version 2 of the SSSNQ to learn whether the survey was properly interpreted and picking up on underappreciated aspects of leadership. From the results of this study, we examined interviewees' utterances as they filled in names in response to the survey prompts, and also examined any descriptions interviewees gave of their interactions with the people they listed.

A third study involved randomizing the question order to test whether the order of name-generator prompts in the survey affects the resultant data. The flow of the questions in the name generator section of the survey was tailored in two ways: the respondent's self-described role, and the subject(s) that she teaches. Figure 2 depicts the randomized design of the name generators.

This survey was administered twice: once to a sample of 15 public elementary schools and 4 Catholic elementary schools (mostly serving kindergarten through 8th grade) in the same city and once to 10 public middle-schools in a mid-sized city in a different state, all serving grades 6 through 8. Table 1 reports response rates from each sample. The survey was designed to randomize the order of the math and RWLA prompts only in situations where the respondent either taught both subjects or taught neither.

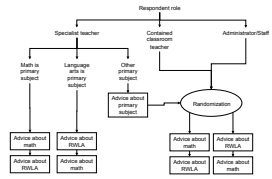Figure 2. Randomized design of name generators, based on self-described role and subject area(s)

Table 1. Sample sizes and response rates

	19 Elementary Schools	10 Middle Schools
Faculty size	14 to 69	49 to 69
Total staff	544	634
Responses	414 (76%)	548 (87%)
Randomized responses	264	323
Composition	Predominantly contained-classroom primary-grade teachers	Predominantly subject-area teachers, some 6th grade teachers in contained classrooms

Social Network Instrument Findings

Our findings from Study One indicate that asking people who they go to for advice or knowledge about mathematics instruction enabled us to identify instances of leadership – especially informal leadership – for mathematics instruction. Analysis of data from Study Two suggests that the questions were interpreted as intended, but may fail to pick up on unsolicited advice-giving and past versus current advice networks.

Results from the RWLA name generator experiment in Study 3 reveal significant differences in average out-degree in both administrations; respondents in the M/R treatment list about one name fewer than respondents in the R/M treatment. This difference is large in magnitude—on the order of a 40% decrease. The math name generator experiment does not reveal a clear pattern. See Table 2.

Fatigue does not appear to be the primary reason for the observed pattern; rather, this may be attributed to satisficing. If the true size of the second network is larger than the reported size of the first network, the satisficing respondent will list only as many names as she did in response to the first name generator, because such a response seems sufficiently complete. Question-scope redefinition was also observed when content areas were checked more often in the second name generator than the first. Also, differences between treatment groups in the number of content areas checked are observed for the math network questions, but not the RWLA questions. We believe that these differences may be the result of how respondents understand the nature of advice about the different subject areas.

The effects for which we find evidence are troubling, because they are so closely related to the substantive questions that provoked our research. In particular, satisficing effects and question-scope redefinition effects create biases that would cause us to reach opposite conclusions depending on the order in which the name generators and interpreters are posed.

Table 2. Average out-degree

Administration	Statistic	Treatment R/M	Treatment M/R	Difference
Elementary Schools	Respondents	126	138	-12
	RWLA out-degree	3.21	1.91	1.29*
	Math out-degree	1.46	1.70	-0.24
Middle Schools	Respondents	159	164	-5
	RWLA out-degree	2.35	1.47	0.88*
	Math out-degree	1.64	1.32	0.32*

* Difference is significant at the 5% level according to a Mann-Whitney test.

Leadership Daily Practice Log Pilot

In piloting the LDP log, we wanted to reduce the reporting burden on study participants and had them report only one interaction for each hour of the school day in a web-based log at the end of the day. We opted for mostly closed-ended questions and provided the participants with a users guide to assist them in interpreting the questions.

Loggers were asked at the outset if the interaction involved an attempt on their part to influence someone or an attempt to be influenced. Depending on whether respondents selected "provide" or "solicit" they followed one of two paths through the log. Questions were similar, but tailored to whether the respondent was in the role of leader or follower in the interaction. We also gathered information on the interactions by asking whether they were planned or spontaneous, whether they were typical for the respondent, and whether the interaction being logged was intended to influence their knowledge, practice, and motivation. See Figure 3.

Figure 3. Screen-captures from the Leadership Daily Practice Log
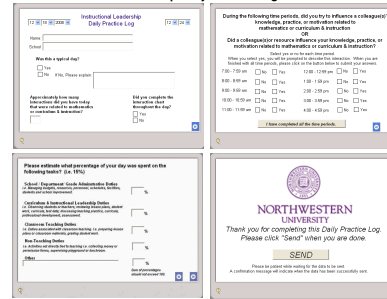
For a 10-day period during fall 2005, the LDP log was piloted with study participants from four urban schools. For our sample, we selected all the formally designated leaders in the school who might work on instruction, informal leaders who were identified by their colleagues, and all mathematics teachers. In all, 4 principals, 4 assistant principals, 1 dean of students, 3 math specialists, 4 literacy specialists, and 18 teachers were selected. The overall completion rate showed that, on average, participants completed the log for 68% of the days.

Of the 34 study participants, 22 were shadowed across all four schools over the 2-week period. Observers were instructed to record all interactions throughout the day and then conduct a cognitive interview with the respondent to investigate his or her understanding of the log and the thought process behind each entry.

In order to validate the instrument, we analyzed data from the cognitive interviews to examine the understanding of the key concepts used in the log. We explored whether participants believed that the LDP log captured leadership by analyzing the agreement (or lack thereof) between participants' understandings and the LDP log's user manual definition of leadership. We also compared the interrater reliability between loggers and researchers for the same interaction and judged the representativeness of the log entry by comparing them to the observers notes. Table 3 shows the evaluation of the logs in relation to the cognitive interviews.

Table 3. Cognitive interview evaluation of the LDP log

Question	Yes/Match (*n*)	No/Nonmatch (*n*)	Yes/Match (%)
Capturing leadership			
Is this interaction an example of leadership?	89	11	89
Does the log capture the nature of the you interactions for the day?	18	14	56
Does the log capture leadership throughout the school year?	7	21	25
Defining concepts			
Knowledge	19	1	95
Practice	17	3	85
Motivation	18	2	90
Describing interactions			
Did this interaction influence your knowledge?	51	7	88
Did this interaction influence your practice?	65	9	88
Did this interaction influence your motivation?	33	19	63
Did you provide information or advice?	37	9	80
Did you solicit information or advice?	35	11	76
Was this interaction planned or spontaneous?	58	38	60

Note: The totals between rows differ depending on whether the question was asked of the individual or the interaction. The totals also differ because characteristics were evaluated only when an individual used them to describe an interaction.

Leadership Daily Practice Log Findings

Study participants overall expressed satisfaction with the instrument and it's ability to measure leadership by analyzing interactions. Especially important was the ability of the instrument to go beyond social influence interactions with those in formally designated leadership positions and, instead, to measure leadership more broadly. Of the participants, 89% agreed that the log captured interactions that were indicative of leadership in instruction.

More than half of the sample, 56%, also agreed that the log accurately captured the nature of their social interaction for the day, as related to mathematics or curriculum and instruction. Fewer were satisfied with the ability to capture leadership interactions that spanned the school year, but the most common explanation for this sentiment was that the sampling time was too short. The majority of respondents also appeared to understand key constructs and terms, as 88% matched the definitions of "knowledge" and "practice" provided in the manual.

The results of the pilot study indicate that there was strong agreement between the interactions the respondents selected to report and the interactions that were observed throughout the day by the researcher. See Table 4. We also found that patterns captured in the log were consistent with the reports of the observers, meaning that there was little bias in selecting one interaction to log over another. This agreement suggests that, with a few modifications, this instrument is a valid tool to analyze formal and informal instructional leadership in schools.

Table 4. Logger and observer reports: Percentage match of interactions

	What	Who	Where	How	Time*
Match	85.1	88.4	80.6	86.3	94.4
No Match	14.9	11.6	19.4	13.7	5.6

Note: Number of interactions varied across categories, from a high of 71 (time) to a low of 51 (how).
*Before school, 9 a.m. to noon, noon to 3 p.m., and after school

As a research methodology, logs in general and the LDP in particular enable us to gather data on school leadership and practice across larger samples of schools and leaders than is possible with ethnographic and structured observation methodologies. Although the LDP log is more costly to administer than school leader questionnaires, it generates more accurate measures of practice because of its proximity to the behavior being reported.

Collaboration

The work of the Distributed Leadership Studies is made possible and substantiated by partnerships with:

- Math in the Middle – Ruth Heaton and Jim Lewis
- Penn Center for Educational Leadership – Jonathan Supovitz and Jim O'Toole
- Educational Development Center – Barbara Scott Nelson
- Chicago Public Schools -- Office of Mathematics and Science

Moving forward, we are currently working with NebraskaMath to conduct a mathematics instructional leadership survey in four Nebraska Public School districts. A tailored and updated version of the SSSNQ has been piloted and will be administered starting in spring 2010.

Further Information and Contact

Relevant Literature:
- Spillane, J. P., & Zuberi, A. (2009). Designing and piloting a leadership daily practice log: Using logs to study the practice of leadership. *Educational Administration Quarterly, 45*(3), 375-423.
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- Pustejovsky, J., Spillane, J. P., Heaton, R. M., & Lewis, W. J. (2009). Understanding teacher leadership in middle school mathematics: A collaborative research effort. *The Journal of Mathematics and Science: Collaborative Explorations, 11, 19-40.*