Article

The Scope of Principal Efforts to Improve Instruction

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Abstract

Researchers have used many angles and perspectives to investigate how principals enact instructional leadership in schools. Most research has emphasized the practices of school leaders, although investigations of leadership styles and leadership processes are also present in the literature. In this study, the authors take a different approach by examining the scope of principal efforts to improve instruction. *Scope of principal effort* refers to the extent to which principals target or distribute their instructionally oriented work with teachers. Using data from principal web logs and teacher surveys conducted in 51 schools in an urban southeastern district, the authors develop models to examine not only differences in average instructional change at the school level but also variability in instructional change across teachers within schools. The results indicate that the scope of principals' instructional leadership activities varies from one school to the next, from very broad approaches that target the entire faculty to very targeted approaches that focus on a few teachers, and that the frequency of a principal's instructional leadership activities with an individual teacher is directly related to the magnitude of instructional changes reported by that teacher. These findings support the notion that principals who focus on the improvement of particular teachers in conjunction with broader approaches can produce greater changes in instructional practice.

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Introduction

Research identifying the essential role that school principals play in encouraging instructional improvement has been a central tenet of school improvement research at least since analyses of the effective schools movement of the 1970s. Many studies at that time, and since, have attempted to disentangle what made schools effective and pointed to instructional leadership as an essential factor. Weber (1971), for example, conducted case studies of four inner-city exemplary schools and identified strong leadership in support of instruction as a key tenet of schools' performance. Venezky and Winfield (1979) contrasted two demographically similar schools that differed in performance and concluded that the achievement orientation of the principals was a critical difference. Glenn (1981) conducted case studies of four urban elementary schools and emphasized the influence of instructional leadership. In a summary of the effective schools literature, Purkey and Smith (1983) identified strong principal leadership of instruction to be a central thread of much of the literature on effective schools.

These indications were reinforced in subsequent syntheses of the literature. Hallinger and Heck (1998) analyzed 43 studies conducted between 1980 and 1995 that investigated evidence of the relationship between principal leadership and student achievement. The authors concluded that principals have a measurable, albeit indirect, effect on school effectiveness and student achievement. More recently, Leithwood, Seashore Louis, Anderson, and Wahlstrom (2004) conducted a wide-ranging analysis of educational leadership, synthesizing a range of studies and concluding that school leadership "is second only to teaching among school-related factors in its impact on student learning" (p. 5). Through this lineage of studies, a conventional wisdom has emerged that instructional leadership in an essential factor in school improvement.

However, substantiating the importance of instructional leadership is very different than specifying exactly what principals do to improve instruction in their schools. To get at this question, researchers have generally focused on different areas of principal emphasis and efforts. Most research investigates the practices of school leaders, although examinations of leadership processes and styles are also common. In this study, we investigate a different aspect of

school leadership. We focus on the scope of principals' efforts to improve instruction. That is, we examined the breadth or targetedness of principals' efforts to improve instruction of their faculty and the resulting impacts on changes in teachers' instruction.

Literature Review

One way to categorize these different strains of research is to consider them in terms of practices, styles, and processes. Although these ways of conceiving of principal leadership are not mutually exclusive, they do provide a useful way to distinguish strains of school leadership research.

Most of the research on the ways that principals influence instruction and student learning focuses on the practices of school leaders. *Research on leadership practices* refers to studies that investigate the particular activities that principals enact or personally facilitate in their schools. To illustrate the emphasis on leadership practice, we identify a few examples from this strain of the literature. Hallinger, Bickman, and Davis (1996) conceived of principal instructional leadership practices as observing classes, reviewing test scores with faculty, facilitating teacher collaboration around the instructional program, securing resources, and maintaining visibility. They found that these practices significantly predicted variables of instructional climate and instructional organization and that they were positively and significantly related to student achievement. Heck, Larsen, and Marcoulides (1990) characterized instructional leadership practice as overseeing school governance, organizing the school around instruction, and developing activities to foster an instructionally oriented school climate. Examining teacher and principal survey responses in 56 schools, they found a relationship between these instructional characteristics and student achievement.

Supovitz, Sirinides, and May (2010) looked at the effects of three elements of principal practice, building school mission and goals, establishing community and trust, and principal instructional focus, as they related to both directly influencing teachers' practice and indirectly influencing practice through influence on teachers' collaborating among themselves. They found that all three principal practices were related to both changes in instruction and peer influence, which were associated with higher levels of student learning.

In perhaps one of the most cited reviews of leadership practices related to student achievement, Waters, Marzano, and McNulty (2003) presented a synthesis of more than 70 research studies that were conducted from the 1970s through the 2000s. They found 21 leadership practices that were correlated with improved student achievement. These included leadership's being directly

involved in the design and implementation of curriculum, instruction, and assessment practices; establishing clear school goals; providing teachers with materials and professional development; recognizing and rewarding teachers' accomplishments; monitoring the effectiveness of school practices and their impact on student learning; and developing learning communities around current theories and instructional practices. Principal practices, or what principals do, are clearly well-examined means by which research has tried to identify effective leadership efforts.

A second trend in the research on instructional leadership has been to identify particular leadership styles that might foster improvement in teachers' instructional practice and enhance student learning. *Research on leadership styles* refers to investigations of the modes by which principals express themselves. Such leadership styles as transactional leadership, transformational leadership, and distributed leadership have been the source of investigations of leadership approaches that might more effectively facilitate instructional improvement in schools. Bass (1990) described transactional leadership as an exchange of reward for effort between leader and followers. Leithwood and Jantzi (2005) defined transformational leadership as a leadership style that focus on appealing to a faculty's higher level of personal commitment to organizational goals. They investigated the influence of transformational leadership in a large school district and found that it enhanced organizational conditions and student engagement. Gronn (2000) and Spillane (2006) have articulated the tenets of distributed leadership, by which principals distribute leadership responsibilities by task to other actors in the building—a potentially promising approach to leadership of instruction. Leithwood and Jantzi (1998) examined transactional, transformational, and distributed leadership in a large Canadian school district and found all three styles present in the district but only small and indirect relationships between them and student engagement.

A few studies in the instructional leadership literature have emphasized the process by which principals engage with teachers in efforts to improve their instructional practices. *Research on leadership process* refers to studies of the particular ways that principals facilitate change. Supovitz and Buckley (2008), for example, focused on the approaches that principals took when they engaged with teachers around instruction. They categorized principals' efforts to influence instruction into low-leverage activities that were unlikely to result in changes in instruction, such as making general statements in support of instruction emphasis; moderate-leverage activities that might result in changes in instruction, such as providing general encouragement to specific

teachers and modeling an instructional technique but not explaining the rationale behind it; and high-leverage activities that were most likely to result in changes in instructional practice, such as providing specific and detailed feedback to individual teachers about their instructional practice and follow-up monitoring. They analyzed 47 cases of instructional action and found that they were equally split between low-leverage and moderate-leverage actions. Their data included only one instance of high-leverage action, in which a principal met one on one with a teacher to provide feedback about an observed lesson.

Another example of a study that focused on the processes of principal leadership was one conducted by Blase and Blase (1999). The researchers asked teachers how principals worked with them to influence their teaching. Two key themes emerged in their analysis, which both focused on change processes that principals facilitated. First, principals talked with teachers to promote reflection through such means as making suggestions, giving feedback, modeling, using inquiry and soliciting advice and opinions, and giving praise. Second, principals emphasized the study of teaching and learning by supporting collaboration among educators, encouraging and supporting program redesign, applying principles of adult learning to all phases of staff development, and implementing action research to inform instructional decision making. Both of the previous examples focus less on particular leadership practices and more on leaders' facilitation of an improvement process.

In sum, a useful way to organize researchers' efforts to unpack instructional leadership is to categorize research emphases on practices, styles, and processes. The most common strategy found in the literature is to examine the practices of school leaders as they relate to changes in teacher practice and improved student outcomes. Other researchers have examined more holistic leadership styles—transactional, transformational, and distributed leadership being examples—to investigate how principals might influence instruction. A third approach has been to examine the process by which principals sought to bring about change.

In this article, we seek to take a different perspective on exploring how principals change instructional practice inside of classrooms. Rather than examining principal practices, styles, or processes, we focus on the scope of principals' efforts. *Scope* refers to the extent to which principals target their instructional assistance efforts on a subset of teachers or the entire faculty. Our review of the literature has uncovered no similar studies in which the scope of principals' efforts was examined.

Research Design

In this study, we focus on the scope of principal efforts to improve instruction and hypothesize that principal instructional leadership activities occur across a continuum that ranges from broad influence (designed to produce schoolwide change or change in larger numbers of classrooms) to highly targeted influence (designed to help a small number of teachers improve their practice). We further hypothesize that leadership efforts that are broad in scope are less likely to produce significant shifts in instructional practice because they are diffused across a large number of teachers. In contrast, we theorize that significant shifts in practice for a single teacher are more likely when that teacher is the focus of a principal's targeted influence activities. It is also important to recognize that a principal's targeted efforts may make a teacher more likely to change his or her practice, but the principal's activities do not guarantee that change will occur. Finally, because of time and resource constraints, a principal can personally engage in only a limited amount of targeted assistance. This suggests that (a) principals are unlikely to exert targeted influence on all teachers in a school, (b) they may provide small amounts of targeted assistance to a subgroup of teachers in a school, or (c) they may exert frequent targeted influence on a small number of teachers in the school. To empirically examine these hypotheses, we focus on the following research questions:

1. How much time do principals report spending on efforts to improve instruction?
2. What is the scope and frequency of principals' instructionally related interactions with teachers?
3. To what extent is the amount of time a principal spends on instructional leadership related to the distribution (i.e., prevalence and amount) of teacher-reported change in instructional practices?
4. To what extent can the relationship between principals' instructional leadership activities and shifts in the distribution of changes in teachers' instructional practices be attributed to principals' work with subsets of teachers in their schools?

Method

This study is part of a longitudinal investigation of school leadership involving 51 schools from a southeastern urban U.S. school district that occurred from 2005 to 2007. Among the 51 schools, 30 are elementary schools, 10 are middle schools, 8 are high schools, and 3 are alternative/special education

Table 1. Teacher and Student Sample Sizes by School Level

	School level			
	Elementary	Middle	High	K-12
Number of teachers				
General education teachers	645	32	57	11
English language arts/ reading teachers	61	51	30	2
Mathematics teachers	27	55	43	2
Other teachers	285	140	156	11
Number of instructional leaders				
Principals	30	10	8	3
Assistant principals	23	13	14	1
Instructional coaches	17	3	14	3
Number of students	16,727	7,878	9,130	564

schools. The district student population is approximately 66% Black and 27% White, with about 58% of the students on free or reduced-price lunch. Table 1 presents numbers of teachers, administrators/instructional leaders, and students by school level for the 51 schools.

Data Sources

This study utilized two data sources, daily principal activity logs and annual teacher surveys. The activity log was a web-based instrument that captured principals' engagement in leadership activities daily for a sample of days across the school year. Principals kept a record of their activities each day on a small calendar note card and completed the logs at the end of the school day. The logs were validated through shadowing a sample of principals on selected days and simultaneously logging their activities (for more detailed information on the web log, see Camburn, Spillane, & Sebastian, 2006).

The first page of the log presented principals with a calendar that captured an hour-by-hour account of how principals allocated their time across nine categories of leadership practice: (a) building operations, (b) finances and financial support for the school, (c) community or parent relations, (d) school district functions, (e) student affairs, (f) personnel issues, (g) planning/setting goals, (h) instructional leadership, (i) principal professional growth. On the web log, instructional leadership was defined as monitoring/observing

instruction, supporting teachers' professional development, analyzing student data or work, or modeling instructional practices. Additional sections of the log captured more in-depth information about how principals engaged in specific activities such as instructional leadership (such as observing a classroom or monitoring student work).

Principals were asked to complete logs for 6 consecutive days in spring 2005; for 5 days each in the fall of 2005, winter of 2006, and spring of 2006; and again for three 5-day periods during the fall, winter, and spring of the 2006-2007 school year. Across these seven waves of data, principals could have log data for up to 36 days. The response rates for these seven waves of data collection ranged from 67% to 93%. For those schools that changed principals during the study period, only the log data for the most recent principal were used in our analyses.

During the 2006-2007 school year, all teachers in each of the study schools were asked to complete surveys that included several questions focused on how often they worked with their principals on efforts to improve their instruction and what was the focus of those interactions. The details of these questions and the scale created from these teacher responses are described in the next section. The overall response rate for the 2007 school staff survey was 77%. Data for a total of 1,608 teachers from the survey were used in these analyses.

Measures of Instructional Leadership

This study makes use of two measures of instructional leadership: a self-report measure based on data from the principal's daily logs and a teacher-report measure based on data from the school-staff questionnaire. Both of our conceptions of instructional leadership (the log and the teacher survey) were informed by the research team's prior work on aspects of instructional leadership, the components of widely adopted Interstate School Leaders Licensure Consortium's leadership standards (Murphy, 2005), and research reviews of instructional leadership (cf. Hallinger & Heck, 1998; Hallinger & Murphy, 1987; Supovitz et al., 2010; Waters et al., 2003).

Our operationalization of the principal self-report measure of instructional leadership is simply the proportion of time logged by each principal in which he or she claimed to be engaged in instructional leadership. It is important to note that this is a schoolwide measure that reflects the total amount of time a principal reported spending on instructional leadership activities. It does not provide information about how the principal allocated his or her time across individual teachers or groups of teachers within the school. Therefore, this school-level measure allows us to predict differences among schools but not among teachers within a school.

The teacher-report measure of instructional leadership was derived from a five-item scale in which teachers described how often they worked with the principal in the following five ways:

1. The principal and the teacher discussed the teacher's instruction.
2. The principal observed the teacher instructing a class.
3. The teacher observed the principal instructing a class.
4. The principal provided feedback after observing the teacher's instruction.
5. The principal reviewed the work produced by a teacher's students.

For each item, teachers selected from five response categories: (a) *never,* (b) *a few times per year,* (c) *a few times/month,* (d) *1-2 days per week,* (e) *more than 2 days/week.* Teachers were then classified in three categories based on the extent of their contact with the principal, specifically around these five aspects of instruction. The first category was "no contact," wherein teachers reported never interacting with the principal in any of the five ways described above. The second category was "some contact," in which teachers reported interacting with their principal a maximum of "a few times per year" in any of the five above ways. The third category was coded as "high contact," which included teachers who reported interacting with their principals at least "a few times per month" in any of the five above ways. This teacher-reported measure of instructional leadership activities, unlike the measure derived from the principals' daily logs, is a within-school measure that provides information about how the principal allocated his or her time across individual teachers or groups of teachers within the school. Therefore, this teacher-level measure allows us to predict differences among schools as well as among teachers within a school.

Measures of Instructional Change

Our measures of instructional change are derived from 2 eight-item scales from the teacher survey. The eight items in each scale were identical, except that one set focused on reading instruction and the other focused on mathematics instruction. The set of items asked teachers to report, on a seven-point scale ranging from *not at all* to *a great deal,* how much they "changed the following aspects of your teaching this year":

1. student assessment,
2. student grouping,
3. materials used,
4. the topics covered,

5. the teaching methods you use,
6. the kinds of work you have students do,
7. the kinds of questions you ask students, and
8. your understanding of the needs of individual students in your class.

Each teacher's responses on the seven-point scale were averaged to produce an overall score for change in instruction in reading/English language arts (ELA) and/or in mathematics. Some teachers had scores for both measures, whereas subject specialists had scores for one or the other measure. The reliabilities of the resultant scales were .94 for reading/ELA and .95 for mathematics.

School size, school level (elementary, middle, high), and the number of instructional leadership staff in a school (i.e., assistant principals, instructional coaches) were also included as covariates in the models linking principals' activities and instructional change.[1] School size and school level (which are certainly different variables but are often correlated) have long been considered relevant factors in principals' ability to enact instructional leadership because they are related to both the principals' ability to personally supervise instruction and the complexity of the organization and thus the complexity of the management task (see, e.g., Fowler & Walberg, 1991; Hallinger et al., 1996; Lee & Smith, 1997). The number of instructional leadership staff in a school is also related to principals' instructional leadership efforts in that their presence may facilitate distributed leadership and moderate principals' effects on instructional practice (Camburn, Rowan, & Taylor, 2003; Spillane, 2006).

Analytic Method: Multilevel Models Linking Principals' Activities With Instructional Change

Our approach to statistical analyses aligned closely with our theory of how principals may effect change in instruction. The notion that principals' influence may lead to change in instruction primarily for a small number of teachers within a school suggests that school-level measures of instructional leadership may be insensitive to principals' effects. For this reason, there might be only a small or negligible relationship between the proportion of time a principal devotes to instructional leadership and schoolwide change in instruction (i.e., the average change across all teachers in a school).

Although a principal's influence on instructional change for small numbers of teachers in a school may not shift the overall school mean on measures of instructional change, it may lead to increases in within-school variance in instructional change due to a lengthening of the right tail of the distribution
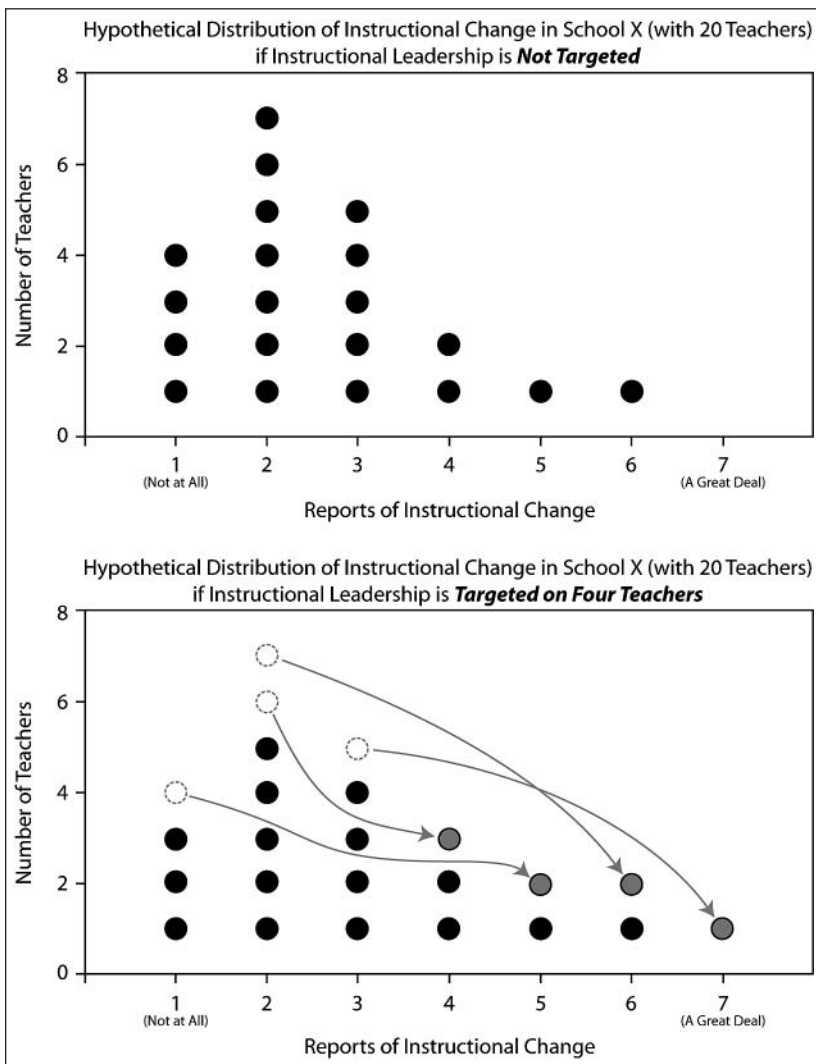
Figure 1. Hypothetical distribution of instructional change in School X
(with 20 teachers)

resulting from the principal's influence on a few teachers. This is illustrated
in Figure 1, which presents two hypothetical distributions of reports of ins-
tructional change for a school with 20 teachers. The graph at the top of Figure 1
represents the results that would be obtained if instructional leadership in

the school were not targeted. Here, teachers' reports are lumped at the low end of the change spectrum, with very few teachers reporting large changes in instruction. The graph at the bottom of Figure 1 represents the results that would be obtained if instructional leadership in the school were targeted toward four specific teachers in the school. Here, these 4 teachers' reports of instructional change have jumped from the low end to the high end of the scale. This results in a shift in the distribution of instructional change in that the mean of the distribution is shifted higher on the scale and the variance of the distribution increases as well. Similarly, stronger relationships may be observed within schools, where the direct contact of a principal with specific teachers not only shifts the mean level of instructional change for high-contact teachers but also decreases the variability among these subsets of high-contact teachers—they all exhibit similar high degrees of instructional change. Of course, we cannot observe teachers' responses from a single school under both targeted and nontargeted instructional leadership in a single year. We can, however, study variation in the scope of instructional leadership across a sample of schools and examine how targeted and nontargeted leadership may relate to reported change in instructional practice.

Fortunately, developments in multilevel mixed-effects modeling have allowed us to estimate models that predict not only differences in average outcomes but also differences in variability in outcomes. These types of models are referred to as "log-variance models" or "power-of-X models" (Aitkin, 1987; Harvey, 1976; Littell, Milliken, Stroup, Wolfinger, & Schabenberger, 2006; Verbyla, 1993).

Using the notation of Littell et al. (2006), the general mathematical form of the combined model of mean and variance of instructional change is the following:

$$\text{Mean Instructional Change: } Y_{ij} = \beta_0 + \beta_1(SchoolSize) + \beta_2(Inst.Leadership) + \alpha_j + \varepsilon_{ij}$$

$$\text{Variance in Instructional Change: } Var[\varepsilon_{ij}] = \sigma^2 \exp\{\gamma_1(SchoolSize) + \gamma_2(Inst.Leadership)\}$$

where

Y_{ij} is the reported instructional change for teacher i from school j,
β_0 is the mean instructional change for the average school,
β_1 is the effect of school size on mean instructional change,

β_2 is the effect of instructional leadership on mean instructional change,

α_j is the random intercept for school j,

ε_{ij} is the residual for teacher i from school j,

σ^2 is the variance in instructional change for the average school,

γ_1 is the effect of school size on variance in instructional change among teachers, and

γ_2 is the effect of instructional leadership on variance in instructional change among teachers.

For the model in which teachers' contact with their principal serves as the measure of instructional leadership, the β_2 and γ_2 parameters are each split into two parameters, one for some-contact teachers and one for high-contact teachers, with no-contact teachers serving as the reference category. Note that the variance of residuals from the mean model (i.e., ε_{ij}) is used as the outcome in the second equation. Thus, the two equations are part of a single model with all parameters estimated simultaneously using restricted maximum likelihood as implemented in SAS PROC MIXED, Version 9.2.

Results

Our first research question asked, "How much time do principals report spending on efforts to improve instruction?" Analyses of data from the principal daily logs revealed that principals in this study spent an average of 8% of their time on instructional leadership activities. Across the sample of principals, the percentage of time spent on instructional leadership ranged from 0% to 25%. This reveals that the principals in this study spent, on average, about 3 to 5 hours per week on instructional leadership activities during the 2-plus years of the study.

Our second research question asked, "What is the scope and frequency of principals' instructionally related interactions with teachers?" Of the 1,600 teachers from the 51 schools in this study, 162 (10%) reported having no contact with their principals as defined by our teacher-reported instructional leadership measure. An additional 1,083 teachers (68%) reported having some instructional leadership contact with their principals, and 355 teachers (22%) reported high instructional leadership contact with their principals. In examining frequency, we found that the number of teachers classified as high-contact teachers in each school ranged from 1 to 19, with an average of 7 teachers per school. Figure 2 shows a scatterplot of the number of high-contact teachers and school size. The mostly random pattern suggests that school size is generally unrelated to the number of high-contact teachers in a
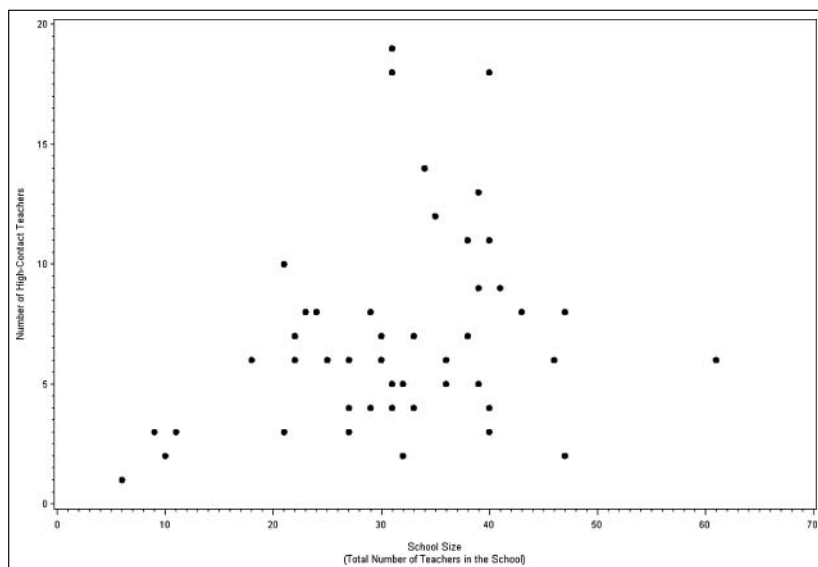
Figure 2. Scatterplot of number of high-contact teachers and school size

school. This suggests that principals typically employ a combination of broad and targeted instructional leadership activities and that the prevalence of targeted activities may vary widely from one principal to another, regardless of school size.

Our third research question sought to evaluate the relationship between the distribution (i.e., prevalence and degree) of teachers' reports of instructional change and the amount of time a principal spends on instructional leadership activities (regardless of scope or target). Results from the models predicting average instructional change and variability in instructional change based on the schoolwide principal self-report of the proportion of time devoted to instructional leadership are shown in Table 2. As the amount of time the principal reports spending on instructional leadership increases, there is no significant increase (or decrease) in the mean change in instruction in reading/ELA ($\beta_2 = 1.28$, $p = .19$) or in mathematics ($\beta_2 = 1.78$, $p = .13$); however, there is a marginally significant increase in the variability in change in reading/ELA instruction among teachers in the same school ($\gamma_2 = 1.33$, $p = .06$). This suggests that the principal's activities are not strongly predictive of schoolwide change in instruction but are suggestive of change in reading/ELA instruction for a subsample of teachers, which may account for the increase in

Table 2. Parameter Estimates for a Two-Level Log-Variance Model Predicting Change in Teachers' Instruction by School Size and Principals' Proportion of Time on Instructional Leadership

	Parameter	Subject	
		English language arts	Mathematics
Model parameters for mean			
Intercept	β_0	3.80***	3.72***
School size	β_1	0.01	−0.01
Instructional leadership	β_2	1.28	1.78
Model parameters for variance			
Intercept	σ^2	1.88***	2.01***
School size	γ_1	0.02	0.01
Instructional leadership	γ_2	1.33†	0.61
School-Level random intercept	Var$\{\alpha_j\}$	0.06*	0.11*

*$p < .10$. **$p < .05$. $^\dagger p < .001$.

within-school variability. The relationship between time on instructional leadership and within-school variability in instructional change in mathematics was positive but not statistically significant ($\gamma_2 = 0.61$, $p = .44$).

   Results from the models predicting average instructional change and variability in instructional change based on the within-school teacher reports of their contact with the principal around issues of instruction are shown in Table 3 (see Note 1). In both reading/ELA and mathematics, teachers who report engaging in targeted influence activities with their principals more than a few times per year have a higher average reported change in instructional practice in reading/ELA ($\beta_3 = 0.89$, $p < .001$) and also in mathematics ($\beta_3 = 0.75$; $p = .001$).

   In reading/ELA, in addition to the higher mean, there is also significantly less variation in self-reported change in instructional practices among teachers who report engaging in targeted influence activities with their principal at least a few times a year (some-contact teachers: $\gamma_2 = -0.46$, $p = .02$; high-contact teachers: $\gamma_3 = -0.41$, $p = .06$). This suggests that the relationship between the schoolwide measure of time spent on instructional leadership and higher within-school variation in instructional change may be explained by the notion that the principal's influence on instructional change is likely to be concentrated among a small subset of the faculty.

Table 3. Parameter Estimates for a Two-Level Log-Variance Model Predicting Change in Teachers' Instruction by School Size and Principals' Instructional Leadership Contact With Teachers

		Subject	
	Parameter	English language arts	Mathematics
Model parameters for mean			
Intercept	β_0	3.54***	3.57***
School size	β_1	−0.01	−0.01
Some-Contact teachers	β_2	0.19	0.06
High-Contact teachers	β_3	0.89***	0.75**
Model parameters for variance			
Intercept	σ^2	2.87***	2.51***
School size	γ_1	−0.01	−0.01
Some-Contact teachers	γ_2	−0.46*	−0.25
High-Contact teachers	γ_3	−0.41†	−0.19
School-Level random intercept	$Var\{\alpha_j\}$	0.09*	0.11*

*$p < .10$. **$p < .05$. ***$p < .01$. $^\dagger p < .001$.

Discussion

Most of the research that investigates instructional leadership focuses on the practices of principals, explaining the types of activities that they choose to adopt and the relationships between these types of activities and teacher and student outcomes. In this article, we adopt a different lens. Rather than examine the type of principal practice, we explore the scope of principals' work with teachers. We sought to understand how principals distributed their efforts and what was the relationship between those efforts and changes in instructional practice.

To execute our investigation, we examined both the frequency and the scope of principal contact with teachers around instructional improvement from both the teacher and principal perspective. The results indicate that principals' influence on instructional improvement is significantly related to their interactions with individual teachers. Analyses of school-level data show that the amount of time a principal focuses on instructional leadership is not significantly related to average instructional change in his or her school; however, the time

a principal spends on instructional leadership is predictive of increases in the variability in instructional change across teachers within a school.

The significant relationship between targeted instructional leadership and teacher-reported change, when contrasted with the nonsignificant relationship between time on instructional leadership and mean instructional change, supports the ideas that (a) studies of the effects of instructional leadership effects are most likely to find relationships when data can be traced to individual teachers and (b) a principal's activities may be more likely to yield meaningful changes in instructional practice when the principal's activities involve targeted influence. In other words, principals' instructional leadership efforts may yield only small changes in practice for an entire faculty, but they may yield large changes in practice for a subset of the school's faculty. Additional within-school analyses using individual teacher reports confirm that the teachers with the largest reported changes in instructional practice tend to be those teachers with the greatest amount of direct interactions with the principal around issues of instructional improvement.

More generally, the results of our analyses support the following conclusions. First, the scope of principals' instructional leadership activities varies from one school to the next, from very broad approaches that target the entire faculty to very targeted approaches that target just a few teachers. Second, the frequency of a principal's instructional leadership activities with an individual teacher is directly related to the magnitude of instructional change reported by that teacher.

This research yields important implications for practitioners, leadership professional developers, and researchers. The implications for practice and professional development are intertwined and focus on how principals might target their instructional leadership in ways that are most likely to yield the greatest instructional improvement for the largest number of students. It is reasonable to expect that principals currently organize and strategize their instructional leadership activities based on their knowledge of their staff and their school context. The results from this study suggest that a principal's choice of how to allocate time and energy across broad-based activities versus targeted activities is an important determinant of the actual amount and scope of instructional change achieved. One might be tempted to conclude that targeted interactions are more fruitful than broad activities, but that is unlikely to be the case in every situation. Therefore, the most effective instructional leaders are those who can produce an optimal balance of broad and targeted activities while also identifying the teachers who are most likely to be receptive to assistance through targeted instructional leadership.

Ideally, principals' decisions and professional development would be informed by research addressing the issues of scope and frequency of instructional leadership efforts. An important implication of our findings is that the focus of future research on instructional leadership should include two key perspectives. Although previous large-scale research on instructional leadership has focused almost exclusively on the principal and the principal's activities, future research should also pay close attention to the target of leadership activities. Instead of focusing only on the delivery perspective of leadership, it is important to collect data from the recipient perspective as well. This will move the field beyond the standard studies of "What does a principal do?" to studies that address questions such as, "With whom do instructional leaders work?" "How do principals allocate time across an entire teaching faculty?" and "How do instructional leaders work with different types of teachers?" To that end, further research might examine both the mix of broad and targeted leadership and which teachers principals target with their instructional leadership and the impacts of their targeting different types of teachers. Findings from these studies would broaden our knowledge of effective approaches to instructional leadership and may identify potential trends showing which teachers are most likely to be affected by broad versus targeted leadership. Studies designed to examine the effects of instructional leadership activities may also provide information about the optimal frequency of broad and targeted contact between principals and teachers, given the nature of the activity, the characteristics of the principal and teachers, and the context of the school.

The results and conclusions from this study are limited by several factors that might be addressed in future studies of this kind. First, although this study collected longitudinal data from principals through daily logs, the teachers in this study were surveyed only once and asked to retrospectively summarize their contact with their principal over the entire school year. This use of retrospective survey data may introduce unreliability in key variables, resulting in lower statistical power and biased estimation of effects. In addition, as these data were self-reported by principals, they are not direct measures of principals' efforts. A second limitation stems from our use of teacher self-report data to reflect instructional change. Ideally, instructional change would be measured using longitudinal classroom observations by trained field researchers. Unfortunately, producing valid, consistent, and reliable data through this mode of data collection is remarkably (usually prohibitively) expensive and intrusive. A third limitation of this study stems from our small sample size of only 51 schools. Although we detected no differences in these relationships across school levels (i.e., elementary, middle, and high), by school size, or by

the number of instructional leaders in a school, meaningful differences might be detectable with a larger sample of schools.

If research attention reflects the efforts of practitioners, then principals are largely focused on which types of activities they employ to bring about improvements in the instructional practices of their faculties. Less attention is paid to how principals distribute their attention and whom they target for instructional improvement. In this article, we have begun an exploration of the scope of principals' instructional leadership efforts. The findings indicate that teachers whom principals target for instructional assistance report more change in instructional practice and that these changes come only from a small proportion of a school's faculty. Together, these findings suggest that how principals choose to distribute their instructional improvement efforts has important consequences for the fate of school improvement.

Declaration of Conflicting Interests

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Note

1. We included control variables and interactions to test for differences in relationships across school levels (i.e., elementary, middle, and high), school size, and the number of instructional leaders in the school. No significant differences were found, although high correlations between school size and school level ($r = .82$) and between school size and number of instructional leaders ($r = .50$) produced collinearity, and the inclusion of additional parameters increased the standard errors of key predictors due to loss of degrees of freedom and our small sample size at the school level. This led us to select school size as the sole control variable in our final models.

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