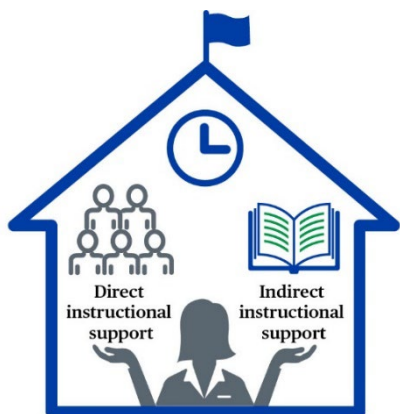


Time to lead: An illustrative look at how elementary school principals spend their workweek

National Center for Education Evaluation



Principals play a role in helping teachers improve their instruction. However, little is known about how much time elementary school principals spend providing instructional support to teachers, either directly or indirectly by arranging resources for teachers to use. New evidence suggests that elementary school principals spend more than one-third of their workweek providing these types of supports. Principals who previously taught in elementary schools provided more extensive and, in some cases, more helpful direct instructional support to their teachers.

Why This Topic?

School principals can play a key role in improving instruction and student achievement,¹ perhaps partly through the time they spend supporting teachers and their teaching.² Federal policy and guidance in recent years have recognized this important role, encouraging states and local education agencies to use federal funds and devote other resources to improving principals' school leadership skills.³

However, there is limited information about how principals typically use their time.⁴ This snapshot provides a look at how a large group of principals spent their workweek, including on instructional support and other activities. Because time spent coaching teachers may be particularly useful for improving instruction,

the snapshot separately examines the time principals spent *directly* supporting their teachers' instruction (such as providing feedback based on a classroom observation) and the time they spent *indirectly* supporting teachers' instruction (such as designing professional development activities).⁵ It also describes principals' time spent on other tasks, which may reduce the time that principals can devote to supporting instruction. Although previous studies have documented the importance of the role of principals as instructional leaders, the literature is inconclusive about whether increases in principals' time spent on direct instructional support activities lead to improved teacher or student outcomes.⁶

Data and Analysis

These findings are based on data collected for a study of principal professional development conducted by the Institute of Education Sciences.⁷ The study included 100 elementary schools from eight districts in five states. These districts were larger and more concentrated in the South, the schools were higher poverty and lower achieving, and the principals had fewer years of experience as a school administrator than their counterparts across the country (see Appendix Exhibit A.1). Therefore, these findings may not represent how all elementary school principals nationally use their time.

This snapshot uses data collected in the 2015-2016 and 2016-2017 school years from three sources: (1) quarterly principal time-use logs, in which principals recorded information about how they spent their time each day during four study-designated weeks each year, (2) annual surveys of the principals, and (3) annual surveys of all math, English/language arts, and general

education teachers in grades 3 through 5. In each case, about 90 percent or more responded with complete information.

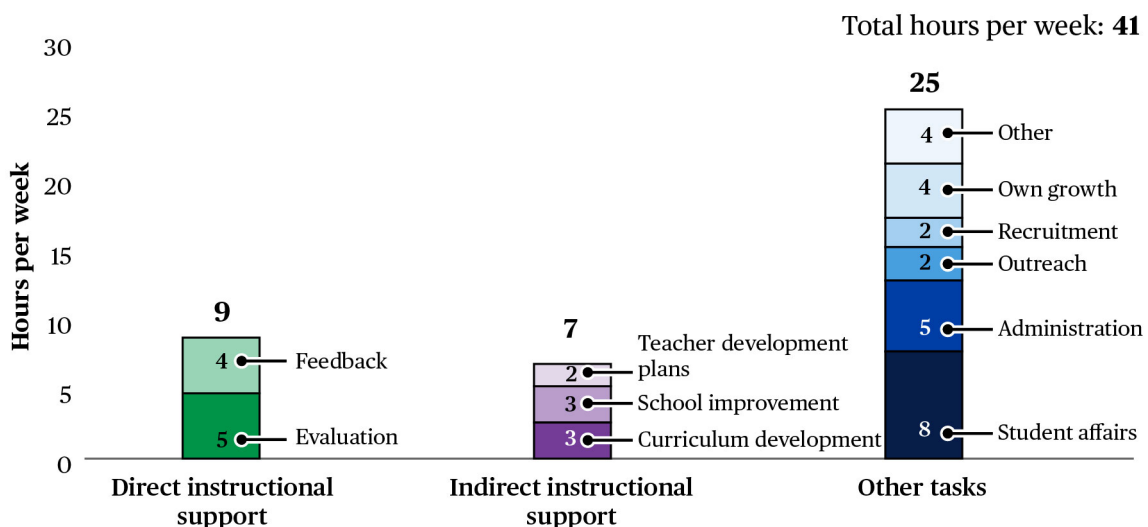
The data also include information on principals' prior elementary school teaching experience. Although previous studies have examined the relationship between principal time use and years of experience as a principal, this snapshot presents the first analysis of whether principal time use is related to whether principals have experience teaching in their schools' grade range.

Key Findings

Principals spent more time on tasks other than providing instructional support

- Other tasks occupied a majority of principals' time.** Out of a typical 41-hour workweek, principals on average spent about 25 hours on other tasks, including student affairs and administration, or just over 60 percent of their total hours (Figure 1).

Figure 1. Average hours per week principals spent on leadership activities, by time-use category



Source: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017).

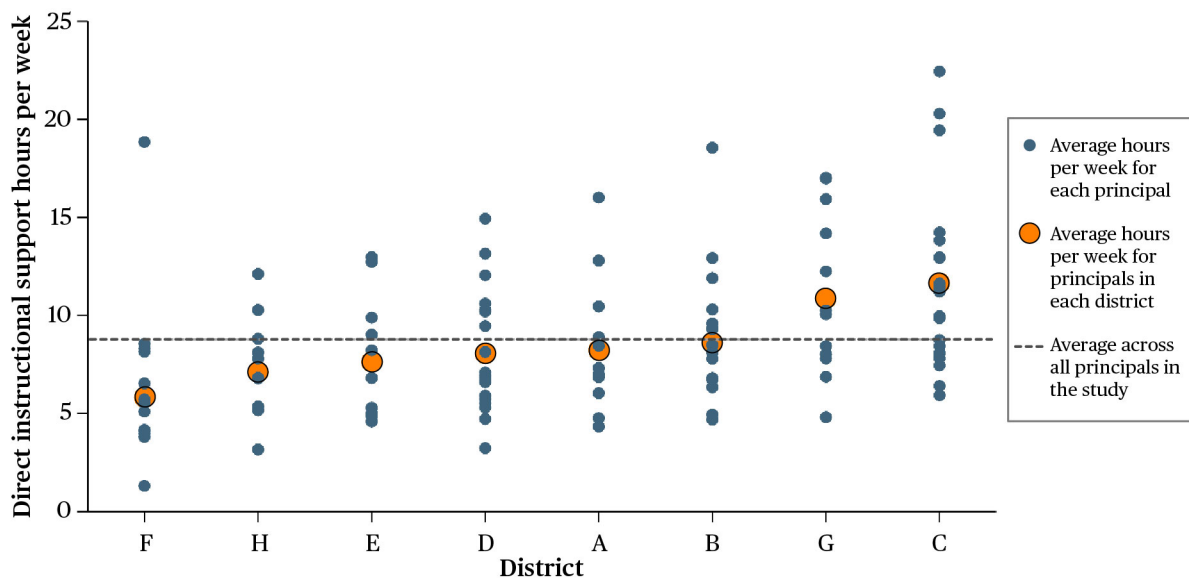
Note: This figure shows the average number of hours per week principals spent on each time-use category. See the appendix for more details on which activities are included in each category. Totals for each time-use category may not match with the sum of the subcategory totals because of rounding. Although the original study included 100 elementary schools, more principals and fewer schools are included in this analysis because of turnover among principals during the two years of the study. The appendix provides additional details.

- **Principals spent more than one-third of their time on instructional support to teachers on average, split fairly evenly between direct and indirect support.** Principals spent about 9 hours providing direct instructional support to teachers and 7 hours on indirect instructional support.⁸ The direct instructional support time included 5 hours evaluating and monitoring instruction and 4 hours providing feedback to teachers. The indirect instructional support time included 3 hours spent on curriculum development, 3 hours spent on school improvement efforts, and 2 hours spent on teacher development plans.
- **However, the amount of time spent on direct instructional support varied considerably across principals.** The

average amount of time that principals spent providing direct instructional support varied across districts, and even more so across principals within the same district (Figure 2). Principals also differed in how much time they spent providing indirect instructional support, although this varied less than the time spent providing direct instructional support (see Appendix Figure A.1).

- **Principals provided less feedback and indirect instructional support to teachers later in the school year.** Principals spent more than eight hours per week on average providing direct instructional support at each quarter during the school year that their time use was measured (Figure 3). This time was fairly equally divided between evaluation activities (such as observing teachers’

Figure 2. Average hours per week principals spent on direct instructional support, by principal and school district



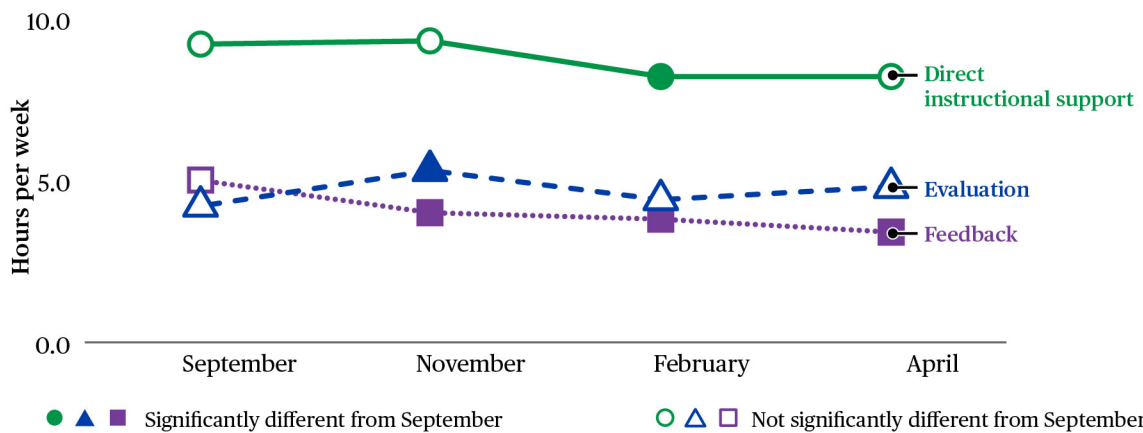
Source: Principal time-use logs (118 principals at 98 elementary schools in 2015–2016 and 2016–2017).

Note: This figure shows the average number of hours per week principals spent on direct instructional support. The small blue dots show the average for individual principals across their quarterly time-use logs, the large orange dots show the average across all principals in each district, and the dashed line shows the average across all principals in the study. The letters used to identify districts match those used in Herrmann et al. (2019). Thirteen percent of the variation in principal time spent on direct instructional support is due to differences across districts, and the remaining 87 percent is due to differences between principals within districts. Differences across both principals and districts are statistically significant at the .05 level. The appendix provides additional details about these calculations.

classrooms and monitoring teachers' performance) and providing teachers with feedback (which declined over the course of the school year). Principals also decreased the average hours per week spent on indirect

instructional support (such as designing professional development activities or developing educational programs) later in the school year (Figure 4). In September, principals spent about eight hours per week

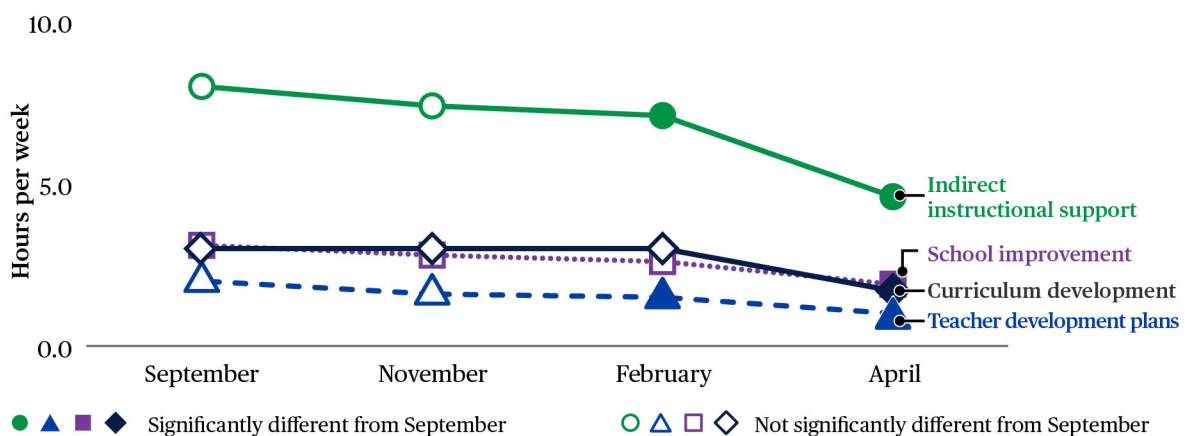
Figure 3. Average hours per week principals spent on direct instructional support and the subcategories of direct instructional support over the school year



Source: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017).

Note: This figure shows the average number of hours per week principals spent on each time-use category during each month across the two years of the study. Variation in time use across months was statistically significant at the .05 level for the evaluation and feedback subcategories of direct instructional support. However, the *p*-value of the test for significant differences across months for direct instructional support overall was .07.

Figure 4. Average hours per week principals spent on indirect instructional support and the subcategories of indirect instructional support over the school year



Source: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017).

Note: This figure shows the average number of hours per week principals spent on each time-use category during each month across the two years of the study. Variation in time use across months was statistically significant at the .05 level for indirect instructional support overall, as well as for all three subcategories of indirect instructional support (curriculum development, teacher development plans, and school improvement).

on indirect instructional support, but by April they spent less than five hours per week. The reduction in hours spent over the school year was evident across all three subcategories of indirect instructional support.

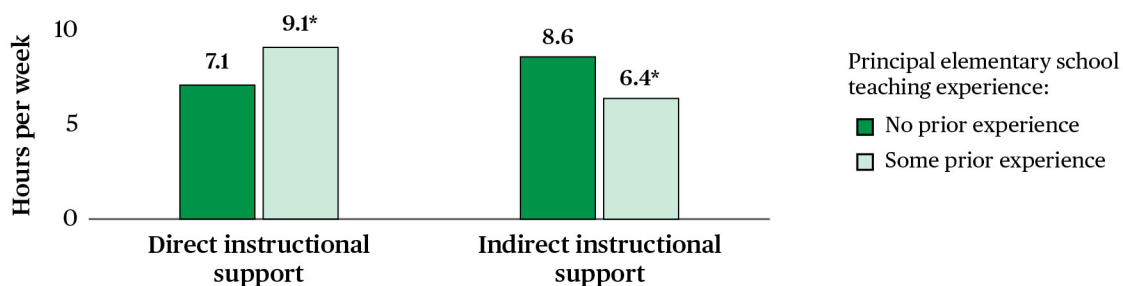
Principals with elementary school teaching experience reported providing more extensive direct instructional support. And according to teachers, they provided more helpful and actionable direct instructional support in some cases.

- **Principals who had prior elementary school teaching experience provided more direct instructional support and less indirect support.** Compared with principals who had not taught at an elementary school, principals with elementary school teaching experience provided an average of two more hours of direct instructional support to their teachers per week (Figure 5). Most of that difference was due to principals spending more time providing feedback to teachers—nearly 40 additional hours over the course of the school year (see Appendix Figure A.2). On

the other hand, compared with principals who had not taught at an elementary school, principals who had elementary school teaching experience spent on average about two fewer hours per week providing indirect instructional support (Figure 5). Most of this difference was due to these principals spending an hour less per week on average on school improvement activities (see Appendix Figure A.2).

- **Consistent with the finding that principals who had prior elementary school teaching experience reported spending more time providing direct instructional support, teachers generally reported receiving more frequent direct instructional support from their principal if their principal had experience as an elementary school teacher.** For example, 45 percent of teachers whose principals had elementary teaching experience reported their principal examined data at least monthly to determine whether the teacher’s instructional goals were met compared to 30 percent of teachers whose principal lacked that experience (Figure 6; see Appendix Table A.1). Although

Figure 5. Average hours per week principals spent on direct and indirect instructional support, by prior elementary school teaching experience

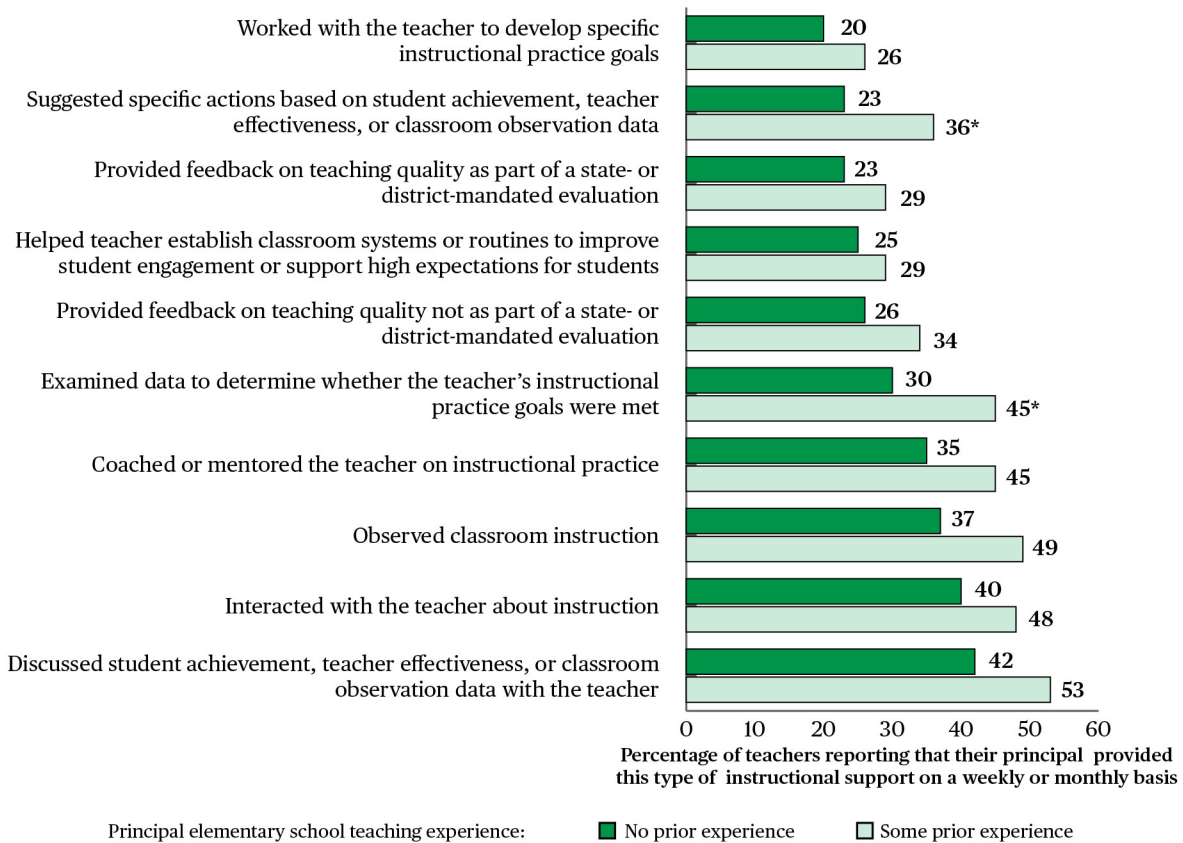


Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017) and principal survey responses.

Note: This figure shows the average number of hours per week principals spent on direct and indirect instructional support, by prior elementary school teaching experience. Eighty percent of principals had some prior elementary school teaching experience. All principals had some prior experience as a teacher.

* Indicates a statistically significant difference at the .05 level relative to principals with no prior elementary school teaching experience, two-tailed test.

Figure 6. Percentage of teachers who reported receiving direct instructional support from their principal, by principals' prior elementary school teaching experience



Sources: Principal and teacher survey responses, spring 2016 and spring 2017.

Note: This figure shows the percentage of teachers who reported that their principal provided direct instructional support on a monthly or weekly basis. The other response options for these questions were quarterly, yearly, and never. Appendix Table A.1 summarizes responses for the full list of questions related to the frequency of direct and indirect instructional support.

* Indicates a statistically significant difference at the .05 level relative to teachers at schools where the principal had no prior elementary school teaching experience, two-tailed test.

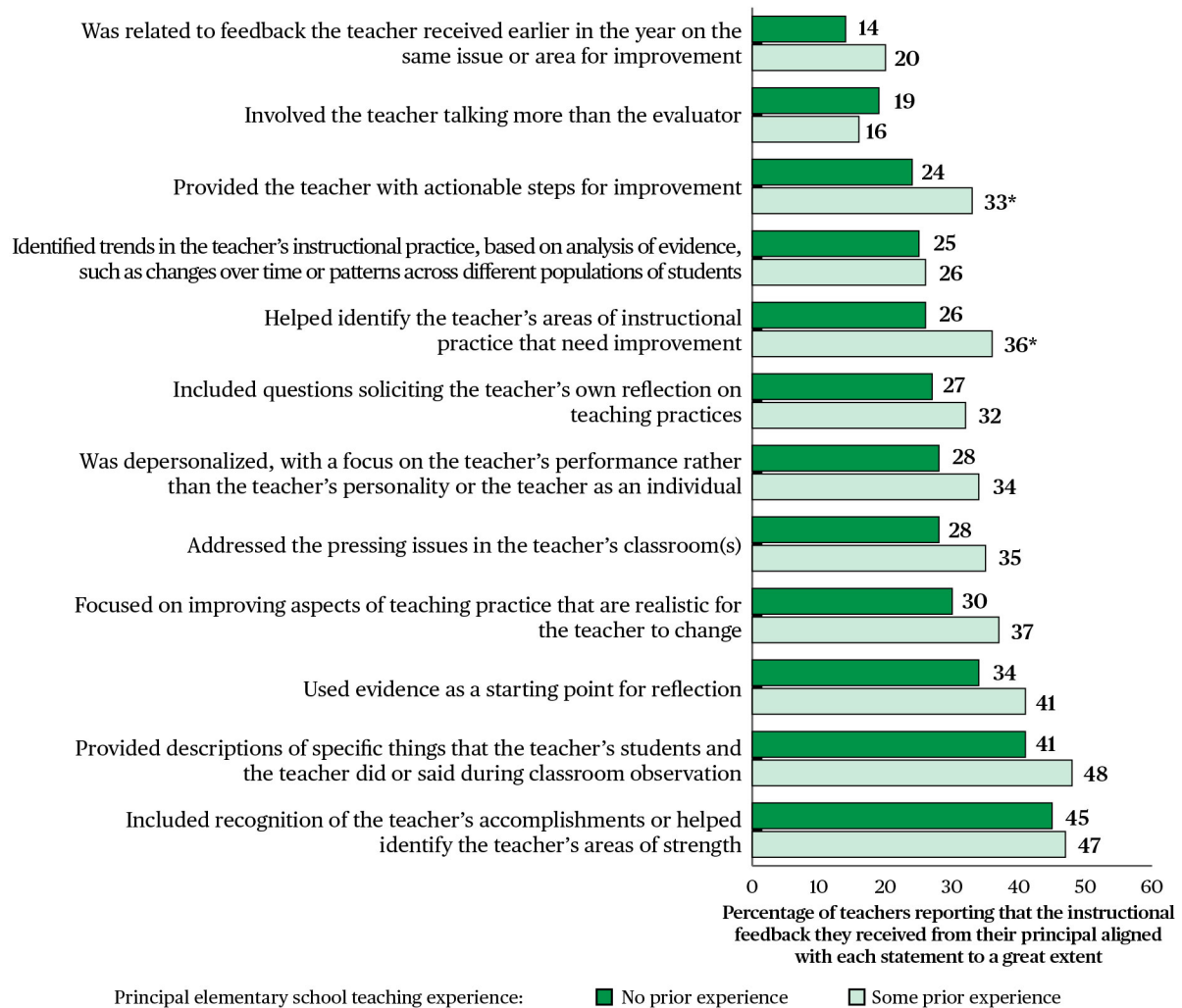
the pattern of responses across the ten questions in Figure 6 is similar, it is important to note that only two of the differences were statistically significant. Principals with elementary school teaching experience reported spending less time providing indirect instructional support, yet their teachers did not report receiving less frequent indirect instructional support (Appendix Table A.1).

- **And teachers were more likely to report that their principal helped them identify areas for improvement and provided action steps for improvement if their principal had experience as an elementary school teacher.** Thirty-six percent of teachers whose principal had elementary teaching experience reported that their principal helped them “to a great extent” identify areas of instructional practices that needed improvement

compared to 26 percent of teachers whose principal did not have that experience (Figure 7). Similarly, 33 percent versus 24 percent of teachers, respectively, reported that their principal provided them with actionable steps to improve their instruction.

Although the pattern of responses across the 12 questions in Figure 7 is generally similar, it is important to note that only two of the differences are statistically significant.⁹

Figure 7. Characteristics of instructional feedback teachers reported receiving from their principal, by principals' prior elementary school teaching experience



Sources: Principal and teacher survey responses, spring 2016 and spring 2017.

Note: This figure shows the percentage of teachers who reported that the instructional feedback from their principal aligned with each statement to a great extent. The other response options for these questions were to a moderate extent, to a small extent, and not at all. Teachers who said that they did not receive any instructional feedback from their principal are excluded from this analysis.

* Indicates a statistically significant difference at the .05 level relative to teachers at schools where the principal had no prior elementary school teaching experience, two-tailed test.

Time principals spent providing instructional support was similar, regardless of other principal, teacher, and school characteristics

- **Time principals spent providing instructional support did not differ based on other principal characteristics or behaviors (Exhibit 1).** Experienced principals might be expected to spend more time providing their teachers with instructional support because they have more familiarity providing such support. Alternatively, experienced principals might know how to complete other administrative tasks more efficiently, leaving more time to provide instructional support. Principals who delegate instructional support to others may not need to spend as much time providing instructional support themselves. However, time principals spent providing instructional support did not differ based on principals' experience level (see Appendix Figure A.3) or the extent to which they delegated provision of direct instructional support to others (see Appendix Table A.3).
- **Nor did instructional support time differ based on staff teaching experience or school characteristics.** Principals who have more novice teachers or teachers new to their school (regardless of their overall years

of teaching experience) might be expected to spend more time providing instructional support. However, this was not the case: the time principals spent providing direct or indirect instructional support did not differ based on the percentage of novice or new teachers at their school (see Appendix Table A.4).

Principals' need or ability to provide instructional support to their teachers could also be affected by the school's student achievement level, how much time principals spend addressing other school issues, or school size. For example, principals at schools with more problems with student absenteeism or conflicts between students might need to spend more time addressing those issues. However, on balance, the time principals spent providing instructional support to their teachers did not differ for schools with different achievement levels (see Appendix Table A.5) or different levels of behavioral problems (see Appendix Table A.6).

Exhibit 1. Relationship between other characteristics and time principals spent providing instructional support

The time principals spend providing instructional support may be related to other principal, teacher, and school characteristics. However, we found no relationship between the following characteristics and the time principals spent providing instructional support (see the appendix for details):

- Principals' experience
- Extent to which principals delegated providing instructional support to others
- Teachers' years of experience
- Student achievement
- Student behavioral problems

Looking Ahead

Although principals play an important role in improving student achievement, little is known about how principals spend their time and how that affects student achievement. This study found that elementary school principals who had elementary school teaching experience spent more time providing direct instructional support to their teachers, and teachers at those principals' schools generally reported receiving more helpful and actionable instructional support. Though not addressed in this snapshot, understanding the potential impact of principals' time use on teachers and students and the importance of principals' prior teaching experience might help districts hire better candidates and identify areas of support for principals so that they can more effectively use their time.

MAIN TEXT ENDNOTES

¹ See Branch et al. (2012), Dhuey and Smith (2018), and Leithwood et al. (2004).

² See Goldring et al. (2015), Grissom et al. (2013), Hermann et al. (2019), and Robinson et al. (2008).

³ U.S. Department of Education (2016).

⁴ Although several studies have provided a general description of principals' time use, they typically have one or more of the following limitations: (1) they measure time use through retrospective surveys, which may be less accurate than daily time-use logs if principals have difficulty recalling how they spent their time (for example, Huang et al. 2020; Lavigne et al. 2016); (2) they measure principal time use during a single year or a single time period with in the year, rather than longitudinally (for example, Grissom et al. 2015; Spillane and Hunt 2010); or (3) they use data from a single school district (for example, Goldring et al. 2018; Sebastian et al. 2018). As described further in the Data and Analysis section, this snapshot uses data from quarterly principal time-use logs obtained over the course of two years from eight school districts.

Goldring et al. (2015) is an exception, in that it does not have any of the limitations described above. However, when measuring time use the authors relied on principals' calendars, which led them to categorize approximately 30 percent of principals' time as unscheduled, meaning it is not known what principals did during those periods. In contrast, the principal time-use logs in this snapshot allowed principals to write in their own activity categories if the categories included in the log did not accurately describe all relevant tasks.

⁵ A meta-analysis of 60 well-designed studies of teacher coaching (Kraft et al. 2018) found strong evidence of positive impacts of coaching on both instructional practices and student achievement. Teacher coaching, which includes observing and providing feedback to teachers, is included in principals' direct instructional support.

⁶ See Murphy et al. (2016), Neumerski (2013), Robinson et al. (2008), Grissom et al. (2013), May et al. (2012), and Horng et al. (2010).

⁷ The study evaluated the impacts of a professional development program for elementary school principals (Herrmann et al. 2019).

⁸ The finding that principals on average spend 16 hours per week—39 percent of their work week—providing instructional supports to teachers is in line with Goldring et al. (2015), who found that principals spend on average 38 percent of their time providing instructional supports. Other studies typically found that on average principals spend smaller percentages of their workweek on instructional support activities, ranging from 8 percent (May and Supovitz 2011) to 27 percent (Lavinge et al. 2016), with multiple studies finding that principals on average spend about 20 percent of their workweek on these activities (Ongaga 2020; Sebastian and Moon 2017; May et al. 2012; Spillane and Hunt 2010; Goldring et al. 2008). The larger amount of time spent on instructional support activities found in this snapshot and in Goldring et al. (2015) may be due to differences in the years during which data were collected, the sample of districts included, or the previously described differences in methods for collecting data on principal time use.

⁹ The appendix provides additional details about the pattern of responses across the questions in Figure 7.

Appendix

Sample, Data, Methods, and Supplemental Findings

Sample and study design

This snapshot is based on an Institute of Education Sciences study on principal professional development.¹⁰ The study included 100 elementary schools across five states, 3,266 teachers, and 23,923 students. Schools within districts were randomly selected to either participate in the study’s principal professional development program for two years or to continue with the supports they typically provide to principals. Given the study recruited districts with at least 20 high-poverty elementary schools, study districts and schools differed from typical districts and schools nationwide in several ways (Exhibit A.1). For more information about the study design and sample, see Herrmann et al. (2019), Exhibit 1 and Appendix B.

Data

The data for this snapshot come from three main sources:

- **Principal time-use logs.** Most of the findings in this snapshot are based on data from principal time-use logs. Principals were asked to report in the logs how much time they spent on each of 10 leadership activities. Principals completed 20 daily logs a year in

both study school years (over five consecutive days during one week selected by the study team each quarter of the school year). In each daily log, principals reported which activities they conducted during each hour-long period of the school day. For each activity reported in that hour-long period, they indicated the amount of time they spent on the activity, within ranges (1 to 14 minutes, 15 to 29 minutes, 30 to 44 minutes, and 45 minutes to an hour). At the beginning and end of the school day, they also had the option of reporting “more than one hour.”

- **Teacher survey.** This snapshot uses teachers’ responses to questions on a teacher survey about their perceptions of their principals’ leadership practices, the frequency of instructional support they received from principals, and their own background characteristics. The survey was administered in spring 2016 and spring 2017.
- **Principal survey.** This snapshot uses principals’ responses to questions on a principal survey about their leadership practices and their own background characteristics. The survey was administered in spring 2016 and spring 2017.

Exhibit A.1. Characteristics of study districts, schools, and principals

- Compared with districts nationally, study districts were
 - Larger (73 schools versus 7 in the average district nationally)
 - More concentrated in the South (five districts in the West South Central region and three districts in the South Atlantic region)
- Compared with schools nationally, study schools were
 - Higher poverty (75 versus 55 percent of students eligible for free or reduced-price lunch)
 - Lower achieving (41st versus 50th percentile in their state in math and English language arts)
- Compared with elementary school principals nationally, study principals had fewer years of experience as school administrators (five versus seven years of experience, on average)

Response rates were consistently very high.¹¹ All or almost all of the study principals completed the time-use logs, with weekly response rates for both years ranging from 96 to 100 percent. At least 95 percent of principals completed each round of the principal survey and at least 89 percent of teachers completed each round of the teacher survey.

Because of principal turnover, the same principal did not always complete the principal time-use logs and the principal survey. For this snapshot, the sample of schools was limited to those where the same principal completed both the time-use log and the principal survey. This restriction resulted in two elementary schools being removed from the sample. The analysis ultimately included 98 schools and 118 principals across the two years of data collection.

Methods

This section describes the approach for examining the relationship between principal time use and the principal, teacher, and school characteristics examined in this snapshot.

To examine the relationship between principal time and other variables of interest, the following model was used:

$$Timeuse_{ijt} = \alpha + \beta X_{ijt} + \gamma Schoolsizes_j + \delta Year_t + \theta Treatment_j + \varepsilon_{ijt}$$

where $Timeuse_{ijt}$ is the amount of time principal i in school j spends on direct or indirect instructional support in year t , α is an intercept term, X_{ijt} is a characteristic of interest such as principal experience, $Schoolsizes_j$ is a set of indicators for school size, $Year_t$ is an indicator for calendar year, $Treatment_j$ is an indicator for whether the school was assigned to the group that received the principal professional development program, and ε_{ijt} is a random error term.

The model accounted for school size because that may directly affect the demands on a principal's time and may also be related to the number of support staff available at the school. School size indicators were chosen such that approximately 25 percent of principals in the sample were defined as being in small schools (fewer than 450 students), 50 percent were defined as being in medium-sized schools (between 451 and 700 students), and 25 percent in large schools (more than 700 students).

The model included a year indicator in case there were any year-to-year changes in principal time use that were unrelated to the characteristics of interest. Although the principal professional development program studied in Herrmann et al. (2019) did not have substantial impacts on principal, teacher, or student outcomes, a treatment indicator was included in the analyses in case the program affected some aspects of principal time use.

The β coefficients, therefore, represent the relationship between time use and the variable of interest, holding constant school size, year, and treatment status. In the analyses explicitly examining relationships by school size, the X_{ijt} term was omitted and the γ coefficients capture the relationship between school size and principal time use.

For all results, except those examining time use over the course of the school year, principal time-use logs were used to calculate the average hours per week spent on each activity across the school year. Most schools had the same principal throughout the study, so the analysis included up to two data points per principal, one for each study year. For analyses where a principal characteristic was the variable of interest, standard errors were clustered at the principal level to account for the fact that up to two data points per principal were included in the analysis. For analyses where school size was the variable of interest, standard errors were clustered at the school level.

Supplemental findings

This appendix section provides more information on the findings for this snapshot.

Additional information on principal time-use categories

Principals' time was grouped into three categories based on activities principals were asked about on the time log, as follows:

- **Direct instructional support** included (1) Monitoring/evaluation of instruction (observing classroom instruction; monitoring teacher performance in relation to standards or goals; evaluating teacher performance), and (2) Teacher development and feedback to teachers (coaching teachers; providing feedback to teachers on their instructional practice; facilitating teacher growth through activities such as conferences, meetings with mentors, teacher collaboration, or professional learning communities).
- **Indirect instructional support** included (1) Management of teacher development and personnel policies (designing professional development activities or professional growth plans for teachers; monitoring staff attendance at professional development activities), (2) Curriculum and instructional program development (taking steps to align curriculum, assessments, and/or standards; developing educational programs across the school; developing interventions or supplementary instruction), and (3) School improvement efforts (planning school improvements; setting and communicating school improvement goals; assessing or communicating progress towards school improvement).
- **Other tasks** included (1) Recruitment, hiring, and management of teachers; (2) Operations, finances, and administration; (3) Community/parent outreach; (4) Student affairs; (5) Principal's professional growth; and

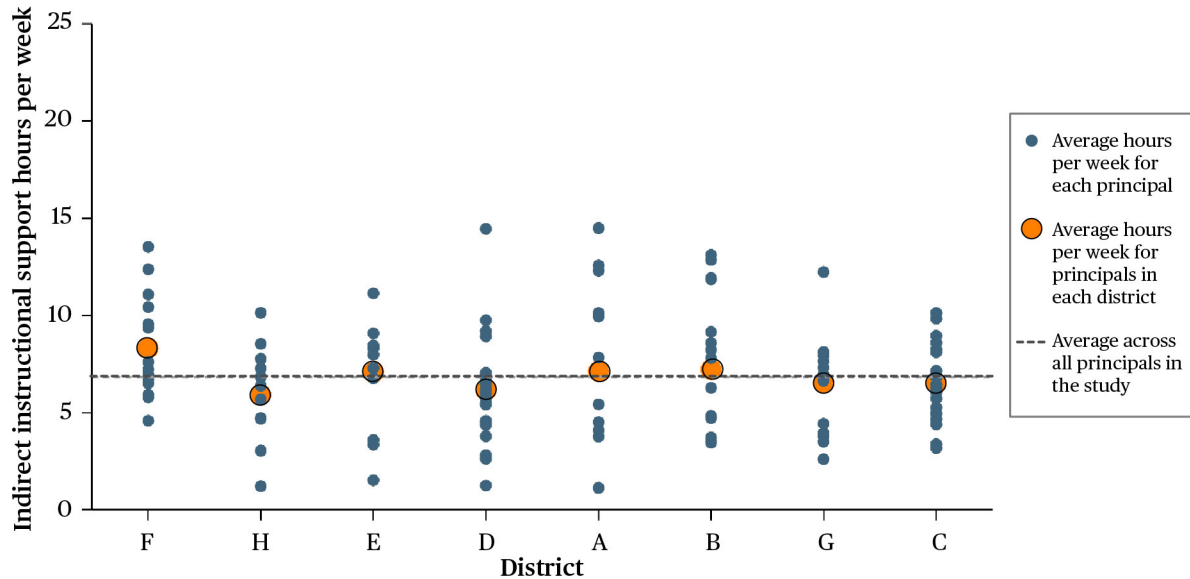
(6) Other activities (such as personal business and lunch).

Additional information on variation in principals' time spent on direct and indirect instructional support

To document the extent to which principal time use differs across schools and districts, Figure 2 in the main document shows the variation in average hours per week by principal and school district in time principals spent on direct instructional support. The statement in the note under Figure 2 about the percentage of the variation in principal time spent on direct instructional that is due to differences across districts and between principals within districts is based on the intraclass correlation coefficient from a linear mixed model where principals are clustered within districts. The statement in the note that differences across principals are statistically significant is based on a linear regression model with principal fixed effects, and an F-test of the equality of the fixed effect coefficients. The statement in the note that differences across districts are statistically significant is based on a similar regression model with district fixed effects and an F-test of the equality of those coefficients.

Figure A.1 shows the variation in principals' time providing indirect instructional support. Similar to their time providing direct instructional support shown in Figure 2, principals significantly varied in the amount of time spent on indirect instructional support across schools within the same district. However, in this case, the average amount of time principals spent on indirect instructional support was similar across districts. Overall there was less variation across principals in the amount time spent on indirect instructional support, compared with the amount of time spent on direct instructional support. That is, the standard deviation of time spent on indirect instructional support (3.0 hours) was significantly less than the standard deviation of

Figure A.1. Variation in principals' time providing indirect instructional support



Source: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017).

Notes: This figure shows the average number of hours per week principals spent on indirect instructional support. The small blue dots show the average for individual principals across their quarterly time-use logs, the large orange dots show the average across all principals in each district, and the dashed line shows the average across all principals in the study. The letters used to identify districts match those used in Herrmann et al. (2019). Differences across principals are statistically significant at the .05 level. Almost all variation in time spent on indirect instructional support was due to differences across principals; differences in average time spent on indirect instructional support across districts are not statistically significant.

time spent on direct instructional support (3.9 hours), based on an F-test for equality of variances.

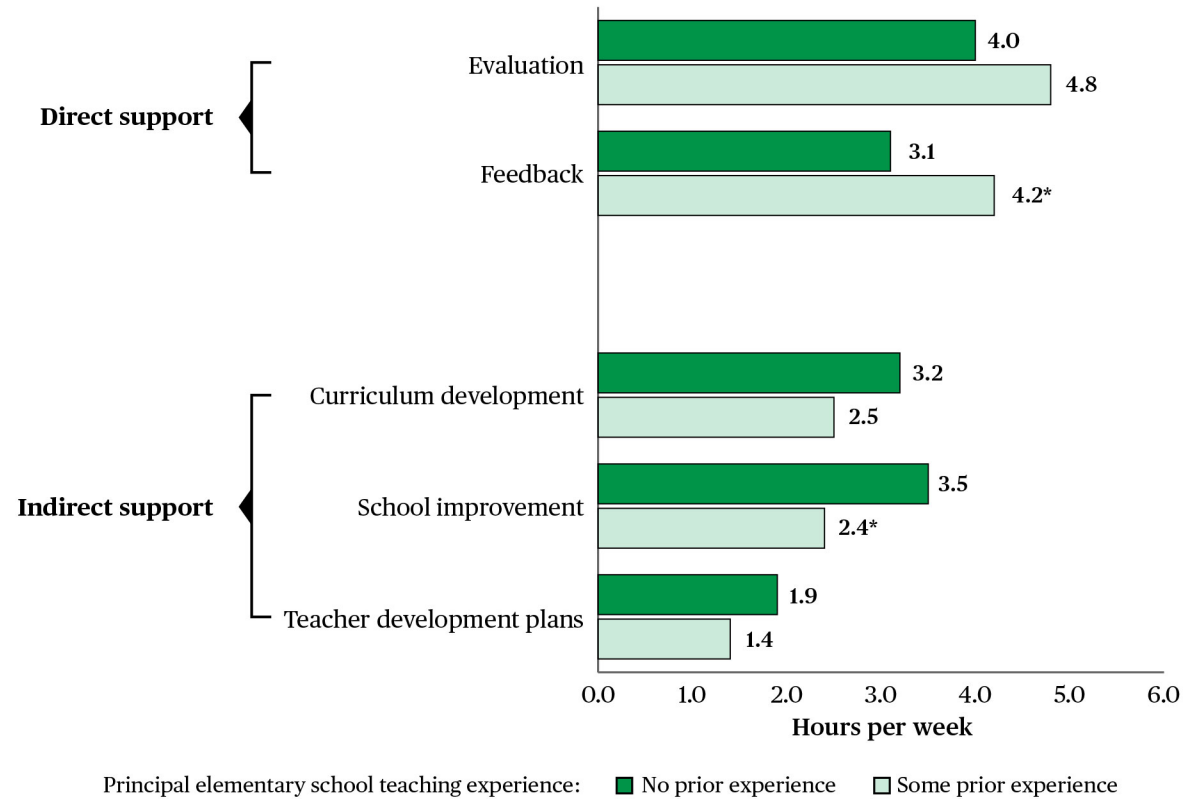
Additional information about differences based on whether principals had prior experience as an elementary school teacher

As noted in the snapshot, principals who had prior elementary school teaching experience spent more hours per week providing direct instructional support on average. Figure A.2 and Tables A.1 and A.2 provide more information about differences based on principals' years of prior elementary school teaching experience.

Figure A.2 shows that principals with prior elementary school teaching experience spent significantly more time (1.1 more hours on average) per week providing teachers with feedback. Assuming there are 36 instructional

weeks in the school year (180 instructional days per year divided by 5 days per week), this difference of 1.1 hours spent on feedback per week yields 39.6 additional hours spent on feedback per year. Although not significant, principals with prior elementary school teaching experience also reported spending more time on evaluation activities (just under one hour) on average. On the other hand, these principals spent less time on each subcategory of indirect instructional support (curriculum development, school improvement, and teacher development plans), though school improvement was the only subcategory where the difference was statistically significant.

Figure A.2. Average hours per week principals spent on the subcategories of direct and indirect instructional support, by prior elementary school teaching experience



Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017) and principal survey responses.

Note: This figure shows the average number of hours per week principals spent on each time-use category, by prior elementary school teaching experience.

* Indicates a statistically significant difference at the .05 level relative to principals with no prior elementary school teaching experience, two-tailed test.

Tables A.1 and A.2 provide more information on teachers' reports of the frequency and usefulness of the support they received from their principals. Table A.1 shows the percentage of teachers reporting that they received a particular type of instructional support from their principal on a monthly or weekly basis. Table A.2 shows the percentage of teachers who found that support very useful.

Across all 10 activities that teachers were asked about related to direct instructional support, a greater percentage of teachers with principals who had experience as an elementary school teacher reported both that they received these types of supports at least monthly and that they found the support very useful. However, only two of the differences shown in Table A.1 and none of the differences shown in Table A.2 met the threshold for statistical significance (p -value $\leq .05$). Within each table all ten responses related

to direct instructional support were more common for teachers whose principals had prior elementary school teaching experience, meaning that all ten differences were positive. For each table a binomial test rejected the hypothesis that positive and negative differences were equally likely to occur (p -value = 0.002). However, the p -value from the binomial test may be too small because an assumption of that test is that the observations are independent, whereas the responses are likely related because the questions were asked in the same section of the teacher survey. Within each table, the three differences related to indirect instructional support were also consistently positive, but insignificant. Given there were only three questions related to indirect instructional support, no statistical test was performed of whether positive and negative differences were equally likely to occur.

As stated previously, teachers were more likely to report that their principal helped them identify areas for improvement and provided action steps for improvement if their principal had experience as an elementary school teacher (see Figure 7 in the snapshot). Although only 2 of the 12 differences in Figure 7 are statistically significant, 11 of the differences are positive. A binomial test also rejects the hypothesis that positive and negative differences were equally likely to occur (p -value = 0.006). This provides suggestive evidence that, according to teachers, principals with elementary school teaching experience provided more helpful and actionable direct instructional support.

Table A.1. Percentage of teachers who reported receiving principal support for all support activities, by principals' prior elementary school teaching experience

	Percentage of teachers reporting that they received each support on a monthly or weekly basis at schools with principals who...		Difference	p-value of difference
	had no elementary teaching experience	had some elementary teaching experience		
Direct instructional support				
Worked with the teacher to develop specific instructional practice goals	20	26	6	0.18
Suggested specific actions based on student achievement, teacher effectiveness, or classroom observation data	23	36	13*	0.01
Provided feedback on teaching quality as part of a state- or district-mandated evaluation	23	29	6	0.29
Helped the teacher establish classroom systems or routines to improve student engagement or support high expectations for students	25	29	4	0.29
Provided feedback on teaching quality not as part of a state- or district-mandated evaluation	26	34	8	0.10
Examined data to determine whether the teacher's instructional practice goals were met	30	45	15*	0.01
Coached or mentored the teacher on instructional practice	35	45	10	0.08
Observed classroom instruction	37	49	12	0.16
Interacted with the teacher about instruction	40	48	8	0.16
Discussed student achievement, teacher effectiveness, or classroom observation data with the teacher	42	53	11	0.06
Indirect instructional support				
Shared materials to support the teacher's instructional goals	34	44	10	0.06
Made student achievement, teacher effectiveness, or classroom observation data reports available to the teacher	43	51	8	0.16
Reviewed teaching plans to ensure they are aligned with curriculum standards	65	69	4	0.36

Sources: Principal and teacher survey responses, spring 2016 and spring 2017.

Note: The numbers displayed in this table are the percentage of teachers who reported that their principal provided the instructional support on a monthly or weekly basis. The other response options for these questions were quarterly, yearly, and never.

* Indicates a statistically significant difference at the .05 level relative to principals with no prior elementary school teaching experience, two-tailed test.

Table A.2. Usefulness of instructional feedback teachers reported receiving from their principal, by principals' prior elementary school teaching experience

	Percentage of teachers reporting that the support they received was very useful at schools with principals who...		Difference	<i>p</i> -value of difference
	had no elementary teaching experience	had some elementary teaching experience		
Direct instructional support				
Worked with the teacher to develop specific instructional practice goals	38	41	3	0.51
Suggested specific actions based on student achievement, teacher effectiveness, or classroom observation data	36	41	5	0.35
Provided feedback on teaching quality as part of a state- or district-mandated evaluation	35	42	7	0.13
Helped the teacher establish classroom systems or routines to improve student engagement or support high expectations for students	34	43	9	0.09
Provided feedback on teaching quality not as part of a state- or district-mandated evaluation	36	44	8	0.09
Examined data to determine whether the teacher's instructional practice goals were met	31	39	8	0.09
Coached or mentored the teacher on instructional practice	39	44	5	0.27
Observed classroom instruction	29	35	6	0.14
Interacted with the teacher about instruction	36	39	3	0.55
Discussed student achievement, teacher effectiveness, or classroom observation data with the teacher	31	39	8	0.09
Indirect instructional support				
Shared materials to support the teacher's instructional goals	36	43	7	0.17
Made student achievement, teacher effectiveness, or classroom observation data reports available to the teacher	39	44	5	0.22
Reviewed teaching plans to ensure they are aligned with curriculum standards	32	38	6	0.24

Sources: Principal and teacher survey responses, spring 2016 and spring 2017.

Note: The numbers displayed in this table are the percentage of teachers who reported that the instructional support provided by their principal was very useful. The other response options for these questions were moderately useful, somewhat useful, and not very useful. For each type of instructional support, teachers who said that they never received that support from their principal when asked the corresponding question about the frequency of that support are excluded from this analysis.

Additional information on other characteristics that were not associated with principals' time on instructional activities

The analysis also examined the relationship between the time principals spent providing instructional support and a variety of other characteristics that might help explain differences in the time principals spent providing instructional support (Exhibit A.2). In general, there was little relationship between these additional characteristics and the time principals spent providing direct or indirect instructional support.

Because years of experience as a principal might be associated with time spent on direct and indirect instructional support, the analysis divided principals into those with two or fewer years of experience at their current school and those with three or more years of experience. There was no statistically significant difference in the average number of hours principals spent on either direct or indirect instructional support by experience level (Figure A.3).

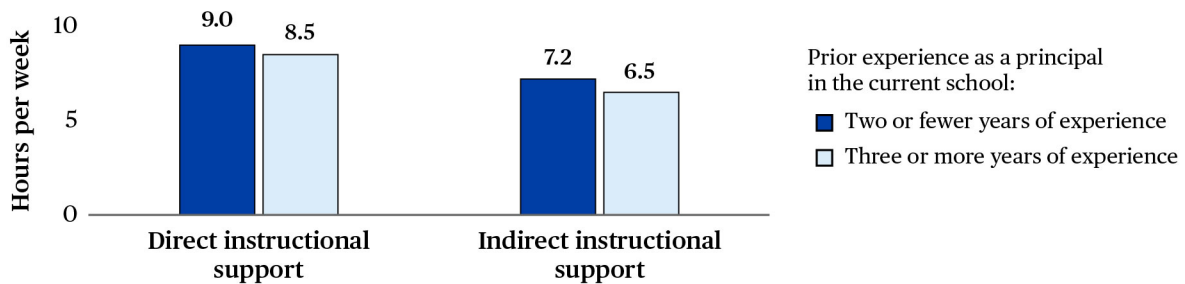
A related analysis examining differences based on principals' years of experience as a principal at any school showed similar results.

Because principals who spent less time providing instructional support may have done so because they delegated those responsibilities to others (for example, to an instructional coach), the analysis examined the relationship between delegating instructional support tasks to others and the time the principal spent providing instructional support. Principals were asked about the extent to which they delegated responsibility to others to conduct classroom observations, conduct walkthroughs (typically a short, informal classroom observation), or provide other instructional supports to teachers. Table A.3 shows no statistically significant relationship between the extent to which principals delegated these responsibilities to others and the time they spent on direct or indirect instructional support.

Exhibit A.2. Principal, teacher, and school characteristics that were not found to be associated with principals' time spent on instructional activities

- **Principals' experience:** those with two or fewer years as principal of their school versus those with three or more years of experience (Figure A.3)
- **Extent to which principals delegated providing instructional support to others:** extent to which principals delegated responsibility for conducting observations of classroom teaching, conducting walkthroughs, or providing other instructional support to teachers (Table A.3)
- **Teachers' years of experience:** the percentage of teachers at the school in their first year of teaching, the percentage of teachers with three or fewer years teaching (at their current school or at any school), and teachers with five or fewer years of experience in any school (Table A.4)
- **Student achievement:** for study schools, those with low baseline achievement (average achievement in math and English language arts below the 25th percentile), medium baseline achievement (average achievement between the 25th and 75th percentile) and high baseline achievement (average achievement above the 75th percentile) (Table A.5)
- **Student behavioral problems:** student absenteeism, widespread disorder in classrooms, bullying or harassment among students, physical conflicts among students, and student acts of disrespect for teachers (Table A.6)

Figure A.3. Average hours per week principals spent on direct and indirect instructional support, by prior principal experience



Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017) and principal survey responses.

Note: This figure shows the average number of hours per week principals spent on direct and indirect instructional support, by prior experience as a principal in the current school. Differences by experience as a principal in the current school were not statistically significant.

Table A.3. Relationship between principals’ delegation of responsibilities and principals’ time spent on instructional support

	Relationship with time spent on direct instructional support	<i>p</i> -value of direct instructional support relationship	Relationship with time spent on indirect instructional support	<i>p</i> -value of indirect instructional support relationship
Delegated responsibility for conducting observations of classroom teaching to a moderate or great extent	-0.22	0.76	0.17	0.70
Delegated responsibility for conducting walkthroughs in the school to a moderate or great extent	-0.15	0.82	0.15	0.72
Delegated responsibility for providing other instructional support to teachers to a moderate or great extent	-0.17	0.83	0.08	0.87

Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015-2016 and 2016-2017) and principal survey responses.

Note: The relationships reported in this table are coefficients from separate regressions of principal time use on indicators for whether principals said they delegated each instructional support to a moderate or great extent. The other response options for the delegation questions were to a small extent and not at all. The coefficients can be interpreted as the difference in average number of hours per week between principals who delegated instructional support to a moderate or great extent compared with principals who delegated instructional support to a small extent or not at all.

Principals who have more novice teachers at their schools might need to spend more time providing instructional support to their teachers. To examine this, the analysis involved calculating the percentage of teachers at each school who were novice teachers. Novice teachers were defined in four different ways: (1) teachers in their first year at the current school, (2) teachers with

three or fewer years of experience teaching at their current school, (3) teachers with three or fewer years of experience teaching in any school, and (4) teachers with five or fewer years of experience teaching in any school. Table A.4 shows no relationship between the percentage of novice teachers and the time principals spent on direct and indirect instructional support.

Table A.4. Relationship between the prevalence of novice teachers and principals’ time spent on direct and indirect instructional support

Percentage of novice teachers at the school, where novice is defined as...	Relationship with time spent on direct instructional support	<i>p</i> -value of direct instructional support relationship	Relationship with time spent on indirect instructional support	<i>p</i> -value of indirect instructional support relationship
...being in their first year as a teacher at the current school	0.013	0.46	-0.005	0.72
...having three or fewer years of experience as a teacher in the current school	0.005	0.75	-0.014	0.20
...having three or fewer years of experience as a teacher in any school	-0.009	0.61	0.020	0.18
...having five or fewer years of experience as a teacher in any school	0.003	0.88	0.020	0.13

Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015–2016 and 2016–2017), principal survey responses, and teacher survey responses.

Note: The relationships reported in this table are coefficients from separate regressions of principal time use on the percentage of novice teachers at their school. The coefficients can be interpreted as the difference in average number of hours per week that is associated with a one percentage point increase in the percentage of novice teachers at the school.

The time principals spent on instructional support may also differ based on their students' achievement level. On the one hand, principals whose students are low achieving might spend more time providing instructional support to their teachers to improve overall student achievement. In this case, one would expect a negative relationship between student achievement and the time principals spent on instructional support. On the other hand, principals who spend more time providing

instructional support to their teachers may have helped improve their teachers' practices, which could lead to higher student achievement. This case would suggest a positive relationship between student achievement and the time principals spent on instructional support. Table A.5 shows no significant difference in the average hours principals at low- and high-achieving schools spent on direct or indirect instructional support.

Table A.5. Relationship between school baseline achievement and principals' time spent on direct and indirect instructional support

	Low baseline achievement level	Medium baseline achievement level	High baseline achievement level	Difference between high and low baseline achievement level	<i>p</i> -value of difference
Hours per week spent on direct instructional support	8.1	9.7	7.4	-0.7	0.53
Hours per week spent on indirect instructional support	7.1	6.9	6.3	-0.8	0.28

Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015–2016 and 2016–2017). Baseline achievement information is from student administrative records for the 2014–2015 school year.

Note: The numbers reported in this table are average hours per week principals spent on direct and indirect instructional support, by school baseline achievement. Baseline achievement categories are assigned according to the grouping described in Table B.11 of Herrmann et al. (2019). Low baseline achievement is defined as average achievement in math and English language arts below the 25th percentile for study schools. Medium baseline achievement is defined as average achievement between the 25th and 75th percentile for study schools. High baseline achievement is defined as average achievement above the 75th percentile for study schools.

Principals at schools with more student behavioral issues may have to spend more time addressing those issues and, therefore, have less time to provide instructional support to their teachers. Principals were asked about the extent to which eight different types of behavioral issues were an issue at their school (Table A.6). The results did not generally show significant relationships between the prevalence of the issue and the average time

principals spent providing instructional support. The one exception was that principals who reported that bullying or harassment among students was at least a moderate problem at their school spent 1.7 hours less per week on average providing direct instructional support, compared with principals who said this was a problem to a small extent or not at all (p -value = .05).

Table A.6. Relationship between principal reports about students' behavior problems and principals' time spent on direct and indirect instructional support

Principal reports that the following issue was a problem at their school to a moderate or great extent...	Relationship with time spent on direct instructional support	p -value of direct instructional support relationship	Relationship with time spent on indirect instructional support	p -value of indirect instructional support relationship
Student absenteeism	1.1	0.09	0.8	0.12
Widespread disorder in classrooms	-0.3	0.76	-0.6	0.41
Bullying or harassment among students	-1.7*	0.05	-0.1	0.94
Physical conflicts among students	-0.6	0.48	0.7	0.29
Student acts of disrespect for teachers	0.1	0.91	-0.2	0.69

Sources: Principal time-use logs (118 principals at 98 elementary schools in 2015–2016 and 2016–2017) and principal survey responses.

Note: The relationships reported in this table are coefficients from separate regressions of principal time use on indicators for whether principals said each issue was a problem to a moderate or great extent. The other response options for the questions were to a small extent and not at all. The coefficients can be interpreted as the difference in average number of hours per week between principals who said each issue was a problem to a moderate or great extent compared with principals who said each issue was a problem to a small extent or not at all. Three other questions included in the principal surveys about student behavior problems were excluded from this analysis because too few principals reported that the issues were a problem to a moderate or great extent. Those questions asked about student racial tensions, conflicts between students and teachers or verbal abuse of teachers, and student possession of weapons.

* Indicates a statistically significant relationship with principal time use at the .05 level, two-tailed test.

APPENDIX ENDNOTES

¹⁰ Herrmann et al. (2019).

¹¹ Ibid, Table B.6.

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