Principals' time, tasks, and professional development: An analysis of Schools and Staffing Survey data

What's Happening

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This study describes how principals reported spending their time and what professional development they reported participating in, based on data collected through the Schools and Staffing Survey by the National Center for Education Statistics during the 2011/12 school year. The study analyzes schools by grade level, poverty level, and within poverty level by whether schools made adequate yearly progress on student performance the previous year. Overall, principals reported spending an average of 59 hours a week on the job, with most of their time spent on internal administrative tasks. Principals of high-poverty schools that did not make adequate yearly progress reported spending more time on the job per week than did principals of high-poverty schools that made adequate yearly progress. Regardless of school poverty level, principals of schools that made adequate yearly progress reported spending more time on administrative tasks, curriculum- and teaching-related tasks, and parent interactions than did principals of schools that did not make adequate yearly progress. Though almost all principals reported participating in professional development, the most frequently reported type was workshop or conference attendance, and the least frequently reported type was university courses.

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Why this study?

Administrative leadership has been recognized as one of the most influential school-level factors on student achievement (Brockmeier, Starr, Green, Pate, & Leech, 2013; Fullan, 2001; Hallinger & Heck, 1998; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Marzano, Waters, & McNulty, 2005; Sergiovanni, 2001; Valentine & Prater, 2011). A principal's day typically includes management activities such as scheduling, hiring teachers, reporting to the district, disciplining students, and relating with parents and the community, as well as dealing with the crises and special situations that are inevitable in schools (Fink & Resnick, 2001; Papa & Baxter, 2008).

At the same time, principals are expected to remain dynamic and adaptable despite school contexts such as shifts in district priorities or school climate and changes in student demographics or school performance (Shatzer, Caldarella, Hallam, & Brown, 2014). With increased accountability for student achievement associated with initiatives such as Race to the Top (Alvoid & Black, 2014), it is important to consider how principals manage a variety of tasks and access the necessary professional development to support their school's diverse needs. While research has been conducted on the pressures and tasks of school administrators (for example, Browne-Ferrigno & Muth, 2004; Institute for Educational Leadership, 2000), little is known about how principals use their time across these tasks.

The Regional Educational Laboratory (REL) Northeast & Islands Governing Board—which consists of state commissioners of education, district superintendents, principals, and representatives of unions, foundations, and institutions of higher education—requested information on how principals spend their time and what professional development they reported participating in. This report provides information that addresses REL Governing Board members' interest in research on the role of principals of high-poverty, low-performing schools by examining how principals spend their time on various tasks and whether there are significant differences in the time spent on tasks by school grade level, school poverty level, and within poverty level by school performance. This report provides REL Northeast & Islands Governing Board members and state and local leaders with information that may inform future research on the training of and support for principals to meet the demands of the position.

What the study examined

The study is based on 2011/12 school year self-reported data from principals of regular public schools[1] collected through the Schools and Staffing Survey by the National Center for Education Statistics (U.S. Department of Education, 2014). The study team examined the total number of hours per week that principals reported spending on the job overall, the number of hours per week that principals reported spending on various job-related tasks (internal administrative tasks, curriculum- and teaching-related tasks, student interactions, parent interactions, and other tasks), and the types of professional development that principals reported receiving in the previous school year. Outcomes were examined by school grade level (primary, middle, high, and combined), school poverty level, and, within poverty level, by whether the school made adequate yearly progress the previous year (see box 1 for definitions of key terms) to determine whether patterns of time allocation and professional development were different for principals managing schools with different characteristics. Two research questions guided this study:

- How much time do principals report spending on the job each week? How do they divide up their time on various job-related tasks? Do principals' time allocations vary based on school grade level and school poverty level? Among schools at the same poverty level, are there differences by whether a school made adequate yearly progress?
- In what types of professional development do principals report participating? Does principals' participation in professional development vary based on school grade level and school poverty level?

Among schools at the same poverty level, are there differences by whether a school made adequate yearly progress?

A summary of the study's methodology can be found in box 2, and more information, including the characteristics of the sample, can be found in the appendix.

Box 1. Key terms

School characteristics

Adequate yearly progress status. Whether a school made or did not make adequate yearly progress at the end of the last school year. Adequate yearly progress is a measure by which schools and districts are held accountable for student standardized test performance under the No Child Left Behind Act.

School grade level. Whether a school was designated as a primary (K–5), middle (grades 6–8), high (grades 9–12), or combined school (spanning more than one of the other grade-level categories).

School poverty level. Whether a school was considered high poverty (meaning that 75 percent or more of students were eligible for free or reduced-price lunch) or low poverty (meaning that 25 percent or fewer of students were eligible for free or reduced-price lunch; National Center for Education Statistics, 2010).

Principals' time

Time on tasks. Number of hours during the school day, before and after school, and on the weekends that principals reported spending during a typical full week at the school on:

- Internal administrative tasks (for example, human resource/personnel issues, regulations, reports, and school budget).
- Curriculum- and teaching-related tasks (for example, teaching, lesson preparation, classroom observations, and mentoring teachers).
- Student interactions (for example, discipline and academic guidance).
- Parent interactions (for example, formal and informal interactions).
- Other tasks (principals were asked to specify other types of tasks, if relevant).

Total time. Number of hours during the school day, before and after school, and on the weekends that principals reported spending during a typical full week at the school on all school-related activities.

Principals' professional development

Professional development. Principals' participation in professional development within the past 12 months reported in the following categories:

- University courses related to his or her role as principal.
- Visits to other schools designed to improve his or her own work as principal.
- Individual or collaborative research on a topic of professional interest.
- Mentoring or peer observation and coaching of principals, as part of a formal arrangement recognized or supported by the school or district.
- Participation in a principal network (for example, a group of principals organized by an outside agency or through the Internet).
- Workshops, conferences, or training in which he or she was a presenter.
- Other workshops or conferences in which he or she was not a presenter.

Source: U.S. Department of Education, 2014.

Box 2. Study data and methods

Data

The report includes results of a secondary analysis of self-reported data from the 2011/12 school year collected through the Principal and School Questionnaire forms of the Schools and Staffing Survey by the National Center for Education Statistics. The sample size for research question 1 was 5,950 principals; the sample size for research question 2 was 6,360 principals. The samples related to time allocations and professional development were used to address comparisons stated in the research questions. For details on sample selection and missing data, see the appendix.

Methods

Descriptive analyses were conducted for each research question, examining principals' reported time spent on the job and their reported professional development by school grade level, poverty level, and within poverty level by school adequate yearly progress status. Estimates that report differences in time spent by school adequate yearly progress status have been adjusted to account for differences in state-level criteria for designating a school as having made adequate yearly progress. For research question 2 logistic regression was used to predict the probability of principals' participation in different kinds of professional development based on school characteristics; all results are presented as the probability of reporting participation in each type of professional development.

Standard errors for all estimates were adjusted to account for nonresponse and for the complex, stratified design of the survey sample (U.S. Department of Education, 2014). Tests of statistical significance also were conducted. The threshold of significance for all analyses related to research question 1 was $p < .0008$, and the threshold of significance for all analyses related to research question 2 was $p < .0004$. The significance level was adjusted to account for the number of significance tests examined. See the appendix for additional information about the data and methodology.

What the study found

This section presents the findings for each research question.

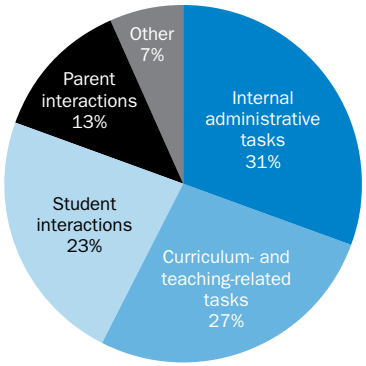
Principals of regular public schools reported spending an average of 59 hours per week on the job, with most of their time spent on internal administrative tasks

Across the five types of tasks examined (internal administrative tasks, curriculum and teaching-related tasks, student interactions, parent interactions, and other tasks), principals reported spending most of their time on internal administrative tasks (18.1 hours; 31 percent), followed by curriculum- and teaching-related tasks (15.8 hours; 27 percent; figure 1). Principals reported spending an average of 13.6 hours per week (23 percent) on student interactions versus 7.6 hours per week (13 percent) on parent interactions.

On average, high school principals reported spending 3.3–4.7 more hours per week on the job than did primary and middle school principals. High school principals reported spending more time on the job (62.5 hours per week, on average) than did primary and middle school principals. The differences were statistically significant. Middle school principals reported spending more time on the job (59.2 hours per week, on average) than did primary school principals (57.8 hours per week), but the difference was not statistically significant.[2]

High school principals reported spending more time on administrative tasks than did primary and middle school principals. High school principals spent statistically significantly more time on administrative tasks (20.5 hours, on average) than did primary school principals (17.7 hours) and middle school principals

Figure 1. Principals of regular public schools spent more than half their time on internal administrative tasks and curriculum- and teaching-related tasks, 2011/12



Note: Percentages do not sum to 100 because of rounding. *n* = 5,950.

Source: Authors' analysis of 2011/12 data from the Schools and Staffing Survey by the National Center for Education Statistics.

(17.2 hours). Primary school principals spent statistically significantly less time on student interactions (13.0 hours, on average) than did middle school principals (14.5 hours) and high school principals (14.4 hours). There were no statistically significant differences in time spent on parent interactions by school level.

Principals of high- and low-poverty schools reported working roughly the same number of hours per week. The difference in the average reported amount of time spent on the job between principals of high-poverty schools (60.0 hours per week, on average) and principals of low-poverty schools (58.5 hours) was not statistically significant. But principals of high-poverty schools reported spending two fewer hours per week on curriculum- and teaching-related tasks (15.0 hours, on average) than did principals of low-poverty schools (17.1 hours), a statistically significant difference.

Regardless of poverty level, principals of schools that did not make adequate yearly progress the previous year reported working 1.5 more hours per week than did principals of schools that made adequate yearly progress. This difference was statistically significant (table 1). Principals of high-poverty schools that did not make adequate yearly progress spent significantly more time on internal administrative tasks, curriculum- and teaching-related tasks, and other tasks and significantly less time on parent interactions than did principals of schools that made adequate yearly progress. Similarly, principals of low-poverty schools that did not make adequate yearly progress spent significantly more time on internal administrative tasks, curriculum- and teaching-related tasks, and other tasks and significantly less time on parent interactions than did principals of low-poverty schools that made adequate yearly progress. There were no significant differences in time spent on student interactions by school adequate yearly progress status among schools at the same poverty level.

Almost all principals of regular public schools reported participating in some professional development during the 2011/12 school year, although participation varied by school characteristics

During the 2011/12 school year 99 percent of principals of regular public schools reported participating in some professional development. The most commonly reported type of professional development among principals in 2011/12 was workshop or conference attendance (94 percent). The next most frequently reported type of professional development was visits to other schools designed to improve the principal's own work (72 percent). The type of professional development least frequently reported was university courses related to the role of principal (25 percent; figure 2).

Table 1. Regardless of school poverty level, principals of regular public schools that did not make adequate yearly progress reported spending significantly more total time on the job than did principals of schools that made adequate yearly progress, 2011/12

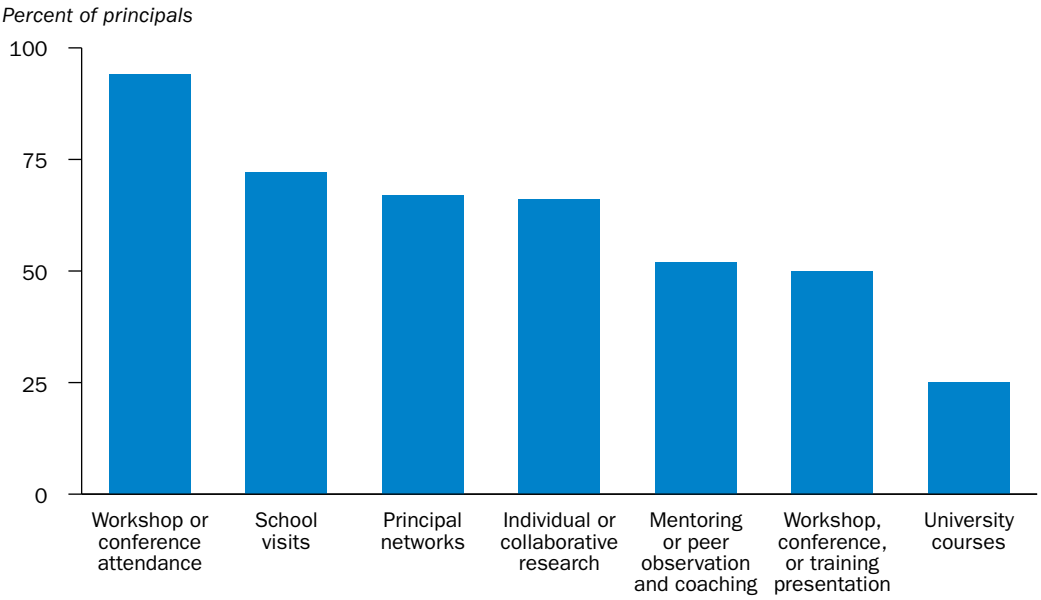
	High poverty schools				Low poverty schools			
	School made adequate yearly progress		School did not make adequate yearly progress		School made adequate yearly progress		School did not make adequate yearly progress	
Activity	Average hours per week	Average percent of time	Average hours per week	Average percent of time	Average hours per week	Average percent of time	Average hours per week	Average percent of time
Total time per week	58.4*	na	60.0*	na	58.1*	na	59.6*	na
Internal administrative tasks	17.9*	30.6	18.4*	30.7	17.9*	30.0	18.7*	31.4
Curriculum- and teaching-related tasks	15.6*	26.7	16.5*	27.5	15.1*	25.9	15.9*	26.6
Student interactions	13.6	23.2	13.5	22.5	13.7	23.6	13.6	22.7
Parent interactions	7.8*	13.3	7.5*	12.5	7.7*	13.2	7.4*	12.4
Other	3.6*	6.1	4.1*	6.8	3.8*	6.5	4.1*	6.9

* Mean differences were tested between schools at the same poverty level that made adequate yearly progress and schools that did not make adequate yearly progress; tests were statistically significant at $p < .0008$ after adjustment for multiple comparisons.

na is not applicable.

Source: Authors' analysis of 2011/12 data from the Schools and Staffing Survey by the National Center for Education Statistics.

Figure 2. Nearly all principals of regular public schools reported attending conferences or workshops as professional development, while only a quarter of principals reported attending a university course, 2011/12



Note: *n*= 6,360.

Source: Authors' analysis of 2011/12 data from Schools and Staffing Survey by the National Center for Education Statistics.

Primary school principals reported less participation in a principal network than did high school principals. Sixty-five percent of primary school principals reported participating in a principal network, compared with 74 percent of high school principals. This was the only statistically significant difference among primary, middle, and high school principals.

Principals of schools that made adequate yearly progress reported different rates of involvement in some kinds of professional development compared with principals of schools that did not make adequate yearly progress. No statistically significant differences in reported professional development were found between principals of high- and low-poverty schools. But principals of high-poverty schools that did not make adequate yearly progress showed a higher probability of involvement in school visits, research, and mentoring activities and a lower probability of involvement in networks compared with principals of high-poverty schools that made adequate yearly progress (table 2). Although statistically significant, the differences in the probabilities across each category are small (0.06 or less).

Implications of the study findings and directions for future research

This study found that principals of regular public schools, on average, reported spending far more than the standard 40 hours per week on the job and more time on internal administrative tasks than on any other job-related task. These findings confirm the widely held belief that principals balance a wide range of tasks within an average week (Fink & Resnick, 2001; Papa & Baxter, 2008; Wallace Foundation, 2013). The study further shows that principals' time is divided between tasks that are administrative in nature and tasks that focus on teachers and students. District and state leaders may consider how school principals could benefit from additional supports, such as adding an assistant principal to the administrative team or providing leadership coaching. Both types of support have been found to boost principals' leadership capacities (Aguilar, Goldwasser, & Tank-Crestetto, 2011; Bartholomew, Melendez-Delaney, Orta, & White, 2005).

The findings show that high school principals reported spending significantly more time on the job than did principals of primary and middle schools. The findings also show that principals of high-poverty schools that did not make adequate yearly progress reported spending more time on the job than did principals of high-poverty schools that made adequate yearly progress. Still, this study is purely descriptive and does not make any claims about how principals' time on tasks might relate to particular school characteristics—for

Table 2. Principals' probability of involvement in school visits, principal networks, individual or collaborative research, and mentoring or peer observation and coaching differed by schools' adequate yearly progress status, 2011/12

	High poverty schools		Low poverty schools	
Type of professional development	Made adequate yearly progress	Did not make adequate yearly progress	Made adequate yearly progress	Did not make adequate yearly progress
Workshop or conference attendance	0.94	0.94	0.94	0.93
School visits	0.72*	0.74*	0.72	0.73
Principal networks	0.69*	0.64*	0.70*	0.66*
Individual or collaborative research	0.64*	0.67*	0.66	0.69
Mentoring or peer observation and coaching	0.50*	0.56*	0.49*	0.55*
Workshop, conference, or training presentation	0.51	0.50	0.50	0.51
University courses	0.23	0.25	0.26	0.27

* Mean differences were tested between schools at the same poverty level that made adequate yearly progress and schools that did not make adequate yearly progress; tests were significant at $p < .0004$ after adjustment for multiple comparisons. See the appendix.

Source: Authors' analysis of the National Center for Education Statistics' Schools and Staffing Survey data for 2011/12.

example, that how principals spend their time is causally related to their schools' adequate yearly progress status. Further work is needed to examine principals' work patterns more deeply in order to understand whether principals of schools at different school grade levels, poverty levels, or adequate yearly progress statuses allocate time differently based on different pressures or expectations. State and district leaders may want to consider what additional supports, if any, are necessary for principals of high-poverty districts that do not make adequate yearly progress.

Finally, the findings show that nearly all principals reported participating in some professional development but that principals most frequently reported workshop or conference attendance or school visits; only half of principals reported engaging in mentoring, and only a quarter reported participating in a university course. This might suggest that principals more frequently participate in short-term rather than ongoing professional development. This may warrant further research into how principals make decisions about the professional development in which they participate and the effects of principals' participation in various types of professional development on school staff and students.

Limitations of the study

The current study has four main limitations.

First, because the study data were collected based on principals' self-reports, the findings should be interpreted with caution. It is possible that principals either underestimated or overestimated time spent on the job or on certain tasks. Studies that investigate principals' time based on other sources of data, such as conducting administrator observations over time (see, for example, Lai Horng, Klasik, & Loeb, 2009; Morris, Crowson, Porter-Gehrie, & Hurwitz, 1984) or daily time logs (see, for example, Camburn, Spillane, & Sebastian, 2010) might yield different results on the distribution of principals' time across tasks.

Second, many changes have occurred in the education landscape since these data were collected. For example, many states and districts have implemented new teacher evaluation systems since 2011/12. Principals may have shifted their time allocations after these systems were implemented.

Third, using schools' adequate yearly progress status is an imperfect proxy for school performance, as many other factors are related to student and school success.

Fourth, because significant between-state differences were found in predicting schools' adequate yearly progress status, some of the findings, particularly those related to school performance, may vary by state.

Appendix. Methodology

The study involved a secondary analysis of data collected through the 2011/12 School and Staffing Survey by the National Center for Education Statistics (NCES; U.S. Department of Education, 2014). The analyses focused on data collected from two separate questionnaires: the School Questionnaire and the Principal Questionnaire. This appendix discusses how the study team prepared and analyzed the data.

Data preparation

Data files containing information from the School and Principal Questionnaires (originating from the 2011/12 administration of the School and Staffing Survey) were merged based on school ID, yielding 7,510 principals of regular public schools. Principals were asked to select the option that best described their school: regular school (primary or secondary), special program emphasis school (for example, science/math school or gifted school), special education school, career/technical/vocational school, or alternative/other school. Only regular schools were selected for analysis. To comply with NCES data-reporting requirements, all unweighted sample entities were rounded to the nearest 10.

Variables. From the School Questionnaire, principals' reports of the grade range were used to sort schools into four categories: primary, middle, high, and combined. The combined category included any school that spanned grade levels sorted into more than one of the primary, middle, or high school categories (for example, K–8 or 6–12). Respondent reports of school enrollment and the number of students approved for free or reduced-price lunch were used from the School Questionnaire to calculate a percentage that reflected each school's poverty level. Consistent with NCES designations, any school with 75 percent or more of students eligible for free or reduced-price lunch was considered high poverty, and schools with 25 percent or fewer students eligible for free or reduced-price lunch were considered low poverty (National Center for Education Statistics, 2010).

The study examined one measure of school performance: adequate yearly progress status. A categorical variable was used to distinguish between schools that made adequate yearly progress and schools that did not based on whether principals reported that their schools made adequate yearly progress requirements during the previous school year.

Missing data. According to survey documentation, NCES previously screened the data for nonresponse and, where appropriate, imputed responses. Principals who had imputed outcomes (time spent for research question 1 and professional development for research question 2) were not included in the final sample. The sample sizes for the two research questions varied because the number of principals who had imputed outcome variables differed: n = 440 for research question 1 and n = 10 for research question 2. In addition, principals were removed from the sample if the study team was unable to link the Principal Questionnaire with the number of students approved for free or reduced-price lunch that was collected through the School Questionnaire (n = 200 for research question 1 and n = 220 for research question 2). One principal was removed because of an implausible value on the number of students approved for free or reduced-price lunch, resulting in the final sample: N = 5,950 for research question 1 and N = 6,360 for research question 2). A comparison of principal characteristics for principals excluded from the sample compared with those included in the sample can be found in table A1.

No significant differences were found in characteristics between principals excluded from the sample and those included in the sample used to answer research question 1. But significant differences were found in three characteristics between principals excluded from the sample and those included in the sample used to answer research question 2: age, highest degree, and school level taught.

Table A1. Characteristics of principals excluded from the sample versus those included in the sample, by research question, 2011/12

	Research question 1				Research question 2			
	Excluded from sample (*n* 640)		Included in sample (*N* = 5,950)		Excluded from sample (*n* = 230)		Included in sample (*N* = 6,360)	
Characteristic	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Age								
Younger than 40	130	20.9	1,160	19.5	60	27.4*	1,230	19.3*
40–60	420	66.3	4,150	69.7	150*	62.4*	4,420	69.6*
Older than 60	80	12.8	640	10.8	20	10.3	700	11.0
Female	280	43.0	2,410	40.5	100	40.6	2,590	40.7
Adequate yearly progress status								
Made adequate yearly progress	340	52.7	3,060	51.5	110	47.9	3,290	51.8
Highest degree								
Bachelor's	10	1.9	70	1.2	10	3.4*	70	1.2*
Master's	390	61.4	3,620	60.9	140	61.5	3,870	60.9
Professional	170	26.1	1,660	27.9	60	23.5	1,770	27.9
Doctorate	70	10.6	600	10.0	30	11.5	630	10.0
No degree	0	0	<10	<1	0	0	<10	<1
School level taught								
Primary	210	32.2	1,870	31.5	60	23.5*	2,020	31.8*
Middle	170	26.9	1,640	27.6	60	23.5	1,760	27.7
High	200	31.7	1,910	32.2	100	44.4*	2,010	31.6*
Combined	60	9.2	520	8.8	20	8.5	560	8.8

* Difference between value for principals excluded from the sample and value for principals included in the sample was significant at $p < .05$ based on chi-square tests.

Source: Authors' analysis based on 2011/12 data from the Schools and Staffing Survey by the National Center for Education Statistics.

Data analysis

Before addressing the study's proposed research questions, descriptive analyses were conducted to characterize the study's sample of principals of regular public schools (table A2).

Through the survey, principals supplied estimates on the average total amount of time they spent on the job per week and the percentage of time they spent on each type of task. Principals' reports of the percentage of time spent on each type of task were converted to the number of hours spent on each type of task to ensure that significant differences in the total amount of time spent on the job were preserved. Both the hours spent and the percentages of time (using the group average for total time spent) are reported.

Descriptive statistics were examined for principals' total amount of time spent on the job as well as for each type of task (internal administrative tasks, curriculum- and teaching-related tasks, student interactions, parent interactions, and other tasks). These statistics were examined for the following groups according to the research questions of interest to the Regional Educational Laboratory Northeast & Islands Governing Board:

- All principals of regular public schools—primary, middle, and high schools—and combined school principals.
- Principals of high- and low-poverty schools.
- Principals of high-poverty schools that made adequate yearly progress.

Table A2. Characteristics of sampled principals, by research question, 2011/12

Characteristic	Research question 1 (*N* = 5,950)	Research question 2 (*N* = 6,360)
Mean age of principal	47.9	48.0
Mean years of previous service as principal	7.2	7.2
Mean number of teachers at principals' school	38.9	38.6
Percentage of female principals	43.0	41.0
Proportion with Aspiring Principals training[a]	0.55	0.56
Proportion with school administrator licensure	0.97	0.97
Proportion with previous management experience	0.39	0.39

a. Aspiring Principals training is professional development offered by a nonprofit organization that trains principals to transform underperforming schools and the lives of the students they serve.

Source: Authors' analysis based on 2011/12 data from the Schools and Staffing Survey by the National Center for Education Statistics.

- Principals of high-poverty schools that did not make adequate yearly progress.
- Principals of low-poverty schools that made adequate yearly progress.
- Principals of low-poverty schools that did not make adequate yearly progress.

For research question 1, inferential tests (independent samples t-tests or, when more than two groups were present between school grade levels, one-way analysis of variance) were used to compare the means of principals in different school contexts. Tests of statistical significance included comparisons between principals of different grade-level schools, of high-poverty schools and low-poverty schools, of high-poverty schools that did and those that did not make adequate yearly progress, and of low-poverty schools that did and those that did not make adequate yearly progress. All *p*-values were subject to a Bonferroni correction (Shaffer, 1995) such that the threshold of significance was adjusted to account for the number of significance tests examined (α = .0008). This strategy was chosen because it is the most conservative approach for establishing test significance. Given the number of comparisons run, the significance level was adjusted to maximize the likelihood that significant differences reported likely were true differences in the population.

A school's adequate yearly progress status may predict a principal's reported time spent on the job; however, a school's adequate yearly progress status may also depend in part on the adequate yearly progress criteria set by the state. As a result, schools with similar characteristics in different states may not have the same adequate yearly progress status. To ensure comparability of the results across states, it was important to control for both school adequate yearly progress status and principals' state affiliations in the regression model. To obtain regression-adjusted estimates, each principal's responses for total time spent on the job were regressed on school's adequate yearly progress status and 50 dummy variables that represent state-level effects (49 states and the District of Columbia, leaving one state dummy variable off as the reference group), outputting a regression-adjusted average of time for each principal. The descriptive analyses by adequate yearly progress were then conducted using these regression-adjusted averages.

For research question 2, percentages of principals that participated in each type of professional development were presented for the full sample and by grade level (see figure 2 in the main text). Similar to the way principals' time was adjusted for state affiliation in research question 1, principals' participation in professional development was regressed on school adequate yearly progress status and state affiliation. Because these are regression-adjusted estimates derived from analysis of a binary outcome (whether a principal participated in each kind of professional development), the results are expressed in the form of the average probability that a principal reported participation in each kind of professional development.

This analysis was done for principals of high-poverty and low-poverty schools. Inferential tests determined whether the probability of participation in specific types of professional development was statistically higher in one group of principals than in the others (for example, principals of high-poverty, high-performing schools versus principals of high-poverty, low performing schools or principals of low-poverty, high-performing schools versus principals of low-poverty, low-performing schools). Similar to the approach used for research question 1, all *p*-values were again subjected to a Bonferroni correction such that the threshold of significance was adjusted for the number of significance tests examined ($\alpha = .0004$).

Notes

1. Principals were asked to select the option that best described their school: regular school (primary or secondary), special program emphasis school (for example, science/math school, gifted school), special education school, career/technical/vocational school, or alternative/other school. Only regular schools were selected for analysis.
2. Combined school principals spent an average of 60 hours a week on the job, which was not significantly different for the time spent by high, middle, or primary school principals. Mean differences for combined school principals are not discussed in the body of the report. The only statistically significant difference was that combined school principals spent less time on curriculum- and teaching-related tasks than primary school principals did.

References

Aguilar, E., Goldwasser, D., & Tank-Crestetto, K. (2011). Support principals, transform schools. *Educational Leadership, 69*(2), 70–73. Retrieved November 11, 2015, from http://www.ascd.org/publications/educational-leadership/oct11/vol69/num02/Support-Principals,-Transform-Schools.aspx.

Alvoid, L., & Black, W. L. (2014). *The changing role of the principal: How high-achieving districts are recalibrating school leadership.* Washington, DC: Center for American Progress. Retrieved December 5, 2014, from https://www.americanprogress.org/issues/education/report/2014/07/01/93015/the-changing-role-of-the-principal/.

Bartholomew, S. K., Melendez-Delaney, G., Orta, A., & White, S. (2005). Untapped resources: Assistant principals as instructional leaders. *Principal Leadership, 5*(9), 22–26. Retrieved November 11, 2015, from http://www.nassp.org/Portals/0/Content/51443.pdf.

Brockmeier, L. L., Starr, G., Green, R., Pate, J. L., & Leech, D. W. (2013). Principal and school-level effects on elementary school student achievement. *NCPEA International Journal of Education Leadership Preparation, 8*(1), 49–61. http://eric.ed.gov/?id=EJ1013001

Browne-Ferrigno, T., & Muth, R. (2004). Leadership mentoring in clinical practice: Role socialization, professional development, and capacity building. *Educational Administration Quarterly, 40*(4), 468–494. http://eric.ed.gov/?id=EJ739195

Camburn, E., Spillane, J. P., & Sebastian, J. (2010). Assessing the utility of a daily log for measuring principal leadership practice. *Educational Administration Quarterly*, *46*(5), 707–737.

Fink, E., & Resnick, L. B. (2001). Developing principals as instructional leaders. *Phi Delta Kappan, 82*(8), 598–606.

Fullan, M. (2001). *Leading in a culture of change.* San Francisco, CA: Jossey-Bass. http://eric.ed.gov/?id=ED467449

Hallinger, P., & Heck, R. H. (1998). Exploring the principal's contribution to school effectiveness: 1980–1995. *School Effectiveness and School Improvement*, *9*(2), 157–191. http://eric.ed.gov/?id=EJ568566

Institute for Educational Leadership. (2000). *Leadership for student learning: Reinventing the principalship.* Washington DC: Author. Retrieved June 7, 2016 from http://iel.org/archives-leadership-for-student-learning.

Lai Horng, E., Klasik, D., & Loeb, S. (2009). *Principal time-use and school effectiveness.* Stanford, CA: Stanford University Institute for Research on Education Policy & Practice. Retrieved January 15, 2016, from http://web.stanford.edu/~sloeb/papers/Principal%20Time-Use%20%28revised%29.pdf.

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning.* New York, NY: The Wallace Foundation. Retrieved August 12, 2015, from http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Pages/How-Leadership-Influences-Student-Learning.aspx.

Marzano, R., Waters, T., & McNulty, B. (2005). *School leadership that works: From research to results.* Alexandria, VA: Association for Supervision and Curriculum Development. Retrieved December 6, 2014, from http://www.ctc.ca.gov/educator-prep/ASC/4005RR_Superintendent_Leadership.pdf.

Morris, V. C., Crowson, R., Porter-Gehrie, C., & Hurwitz, Jr., E., (1984). *Principals in action: The reality of managing schools*. Columbus, OH: Merrill.

National Center for Education Statistics. (2010). *The condition of education* (NCES No. 2010–028). Washington, DC: U. S. Department of Education. Retrieved November 4, 2014, from http://nces.ed.gov/pubs2010/2010028.pdf.

Papa, F., & Baxter, I. (2008). Hiring teachers in New York's public schools: Can the principal make a difference? *Leadership and Policy in Schools, 7*(1), 87–117. http://eric.ed.gov/?id=EJ811557

Sergiovanni, T. (2001). *Leadership: What's in it for schools?* London, UK: Routledge/Falmer.

Shaffer, J. P. (1995). Multiple hypothesis testing. *Annual Review of Psychology, 46*(1), 561–584.

Shatzer, R. H., Caldarella, P., Hallam, P. R., & Brown, B. L. (2014). Comparing the effects of instructional and transformational leadership on student achievement: Implications for practice. *Educational Management Administration & Leadership, 42*(4), 445–459.

U.S. Department of Education. (2014). *Schools and Staffing Survey (SASS)*. Washington, DC: Author. Retrieved October 23, 2014, from http://nces.ed.gov/surveys/sass/index.asp.

Valentine, J. W., & Prater, M. (2011). Instructional, transformational, and managerial leadership and student achievement: High school principals make a difference. *NASSP Bulletin, 95*(1), 5–30.

Wallace Foundation. (2013). *The school principal as leader: Guiding schools to better teaching and learning.* New York, NY: Wallace Foundation. Retrieved February 18, 2015, from http://www.wallacefoundation.org/knowledge-center/school-leadership/effective-principal-leadership/Documents/The-School-Principal-as-Leader-Guiding-Schools-to-Better-Teaching-and-Learning-2nd-Ed.pdf.

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Lavigne, H. J., Shakman, K., Zweig, J., & Greller, S. L. (2016). *Principals' time, tasks, and professional development: An analysis of Schools and Staffing Survey data* (REL 2017–201). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. Retrieved from http://ies.ed.gov/ncee/edlabs.

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