

Principal Professional Development in U.S. Public Schools in 2017-18

STATS IN BRIEF

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Statistics in Brief publications present descriptive data in tabular formats to provide useful information to a broad audience, including members of the general public. They address simple and topical issues and questions. They do not investigate more complex hypotheses, account for inter-relationships among variables, or support causal inferences.

We encourage readers who are interested in more complex questions and in-depth analysis to explore other National Center for Education Statistics (NCES) resources, including publications, online data tools, and public- and restricted-use data sets. See nces.ed.gov and references noted in the body of this document for more information.

Principal professional learning, such as various professional development activities and coaching or mentoring, enables principals to cultivate more effective leadership skills and strengthen instructional practices (Herman et al. 2017). Effective principals are important because they play a role in higher levels of student achievement and lower levels of staff turnover (Gates et al. 2019; Herman et al. 2017). Many districts report that they tie school leadership to school improvement in their district goals, strategic plans, and initiatives (Gates et al. 2020).

Professional learning opportunities are frequently most intensive early in a principal's career or placement at a school (Gates et al. 2020; Herman et al. 2017). These early career opportunities may be particularly important, since fewer than half of the districts in a recent study of principal pipelines reported moderate or high satisfaction with their pool of principal candidates (Gates et al. 2020).

Principal professional development includes a wide range of administrative and instructional topics. Competencies identified by principal professional organizations and academic research as important include instructional leadership, building or operations management, community relations, school culture or climate, resource allocation, and human resource management (NPBEA 2015; Marzano, Waters, and McNulty 2005; Mendels 2012; Reeves 2009; The Wallace Foundation 2013).

National surveys show that most principals participate in professional development (Lavigne et al. 2016; Taie and Goldring 2019). Some professional development activities are associated with stronger demonstrations of principals' leadership skills, school culture, and student achievement. For example, principals who have mentors or receive coaching are more effective leaders than those who have not participated in these forms of professional development (Grissom

and Harrington 2010). Further, research shows a positive impact on leadership practices or student achievement when principals participate in activities such as learning communities, mentoring, or ongoing coaching and collaboration (Herman et al. 2017). Principals frequently report participating in principal networks, which is a form of learning community, as well as in mentoring and coaching (Lavigne et al. 2016; Taie and Goldring 2019). However, some activities, such as taking university courses, are not associated with leader effectiveness (Grissom and Harrington 2010). Few principals report taking university courses related to their role as principal (Lavigne et al. 2016; Taie and Goldring 2019).

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This report uses data from the 2017-18 National Teacher and Principal Survey (NTPS) Public School Principal Survey to describe professional development topics and activities reported by principals. Principals who were in the same school for 2016-17 and 2017-18 reported for the 2016-17 school year about their participation in professional development activities to help understand how it might be affecting principal practices during the 2017-18 school year. The data do not address the quality of the professional development activities or their effectiveness in improving

principals' leadership practices or student learning. Because principals were reporting about professional development activities undertaken as a principal at their current school in the previous school year, the analyses presented in this report are for principals with at least one year of experience at their current school.¹

The purpose of NTPS is to collect information that can provide a detailed picture of U.S. elementary and secondary schools and their staff.

Although the 2017-18 NTPS collected data from both public and private schools, this report focuses on the types of professional development activities public school principals are participating in and the topics covered during professional development.

All comparisons of estimates were tested for statistical significance using the Student's *t* statistic, and all differences cited are statistically significant at the $p < .05$ level. No adjustments for multiple comparisons were made.

¹ Eighty-four percent of principals reported at least one year of experience at their current school.

STUDY QUESTIONS

1. How prevalent among public school principals is participation in different professional development activities, and how does the prevalence of various activities vary with school characteristics and principal experience?
2. How prevalent among public school principals is participation in professional development in various topics, and how does this prevalence vary with school characteristics and principal experience?

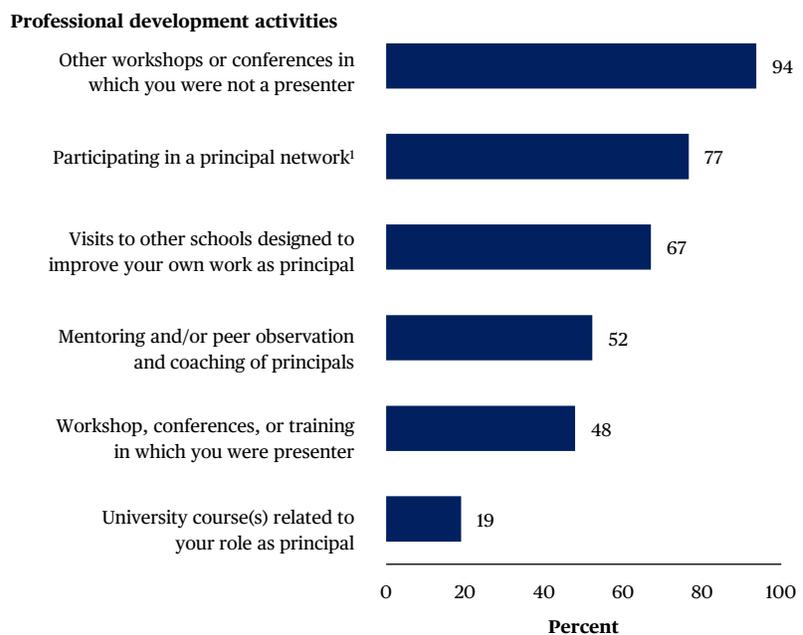
Key Findings

- In 2017-18, most public school principals (95 percent) with at least one year of experience at their current school reported participating in professional development during the prior school year (data not shown; see table 1 at <https://nces.ed.gov/pubsearch.pubsinfo.asp?pubid=2020045>). The most prevalent type of professional development activity reported by these principals was participating in workshops or conferences in which they were not a presenter (94 percent), and the least prevalent activity was taking university courses related to their role as principal (19 percent; **FIGURE 1**). For activities likely to have been part of district-sponsored professional development activities, 67 percent reported visits to other schools designed to improve their own work as principal, and 52 percent reported participating in mentoring and/or peer observation and coaching of principals.
- Professional development activities that are likely to have been part of district-sponsored professional development showed considerable variation by the community type of the school. Principals in city schools more often reported participating in visits to other schools designed to improve their own work as principal than did principals in suburban, town, or rural schools (78 percent compared with 59 to 69 percent). Principals in city schools also more often reported participating in mentoring and/or peer observation and coaching of principals than schools located in other types of communities (59 percent compared with 45 to 51 percent; **FIGURE 2**).
- Over 80 percent of public school principals who participated in professional development did so in supporting effective instruction (92 percent), analyzing and interpreting student achievement data (86 percent), and safety or school climate (85 percent; **FIGURE 4**). School improvement planning was studied by 77 percent of these principals, 65 percent learned about school management and policy, 54 percent learned about social services for students, and 49 percent studied human resource management.
- Topics related to planning and management were more prevalent among public school principals in city schools than in suburban, town, or rural schools. Those in city schools more often reported learning about school improvement planning (83 percent compared with 74 to 77 percent), school management and policy (72 percent compared with 62 to 64 percent), and human resource management (60 percent compared with 40 to 50 percent) than did principals in schools located in other types of communities (**FIGURE 5**). In addition, professional development related to providing social services for students was more common for principals of city schools than for principals of town or rural schools (60 percent compared with 51 and 47 percent, respectively).

1 How prevalent among public school principals is participation in different professional development activities, and how does the prevalence of various activities vary with school characteristics and principal experience?

In 2017-18, most (95 percent) public school principals with at least one year of experience at their current school reported participating in professional development during the prior school year (data not shown; see table 1 at <https://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2020045>). Among these principals, the most prevalent type of professional development activity was participating in workshops or conferences in which they were not a presenter (94 percent), followed by participating in a principal network² (77 percent; **FIGURE 1**). Both of these are activities that a principal can participate in on his/her own. The next most prevalent professional development activities are those likely to have been part of district-sponsored professional development such as visits to other schools designed to improve their own work as principal or participating in mentoring and/or peer observation and coaching of principals. Participation in workshops, conferences, or training in which they were a presenter was reported by 48 percent of principals. The least prevalent professional development activity was taking university course(s) related to their role as principal.

FIGURE 1. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in various kinds of professional development: 2017-18



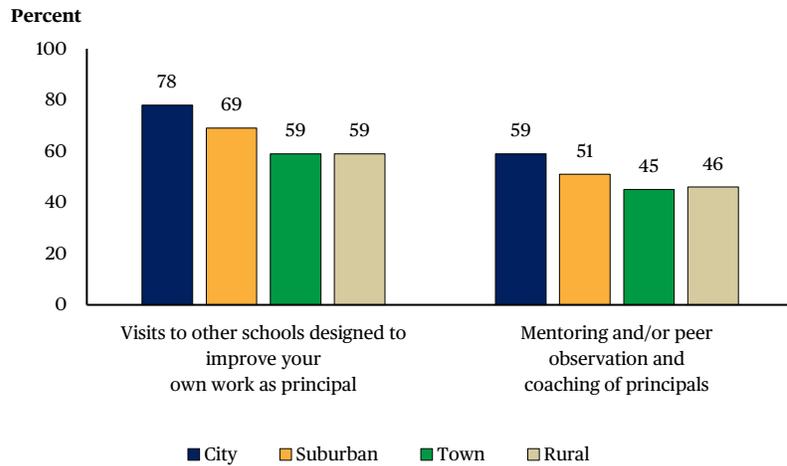
¹Participating in a principal network includes a group of principals organized within school systems, by an outside agency, or through the internet.
 NOTE: Percentages are from table 3; see <https://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Principal Data File," 2017-18.

² Participating in a principal network includes a group of principals organized within school systems, by an outside agency, or through the internet.

Participation rates in most types of professional development activities varied little by principal experience or school characteristics (data not shown; see table 3 at <https://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2020045>). However, public school principal experiences with professional development activities that often need direct district coordination or support varied considerably by the type of community in which the school was located. A higher percentage (78 percent) of city school principals visited other schools to improve their own work than principals serving in suburban, town, or rural schools (FIGURE 2). Likewise, city school principals reported participating in mentoring and/or peer observation and coaching of principals at a higher rate than principals in suburban, town, and rural schools.

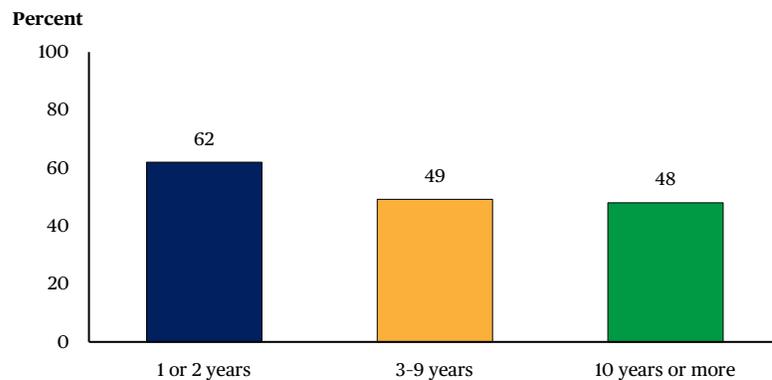
Research indicates that principals who have mentors or receive coaching are more effective leaders (Grissom and Harrington 2010), and principals may be more likely to benefit from this type of assistance early in their careers (Herman et al. 2017; Gates et al. 2020). Reported engagement in mentoring and/or peer observation and coaching of principals did vary among public school principals in 2017-18 by years of experience. Principals with 1 or 2 years of experience more often reported participating in these activities than did more experienced principals (FIGURE 3).

FIGURE 2. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in activities often requiring school district coordination, by community type: 2017-18



NOTE: Percentages are from table 3; see <https://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Data File,” 2017-18.

FIGURE 3. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in mentoring and/or peer observation and coaching of principals, by principal total years of experience: 2017-18

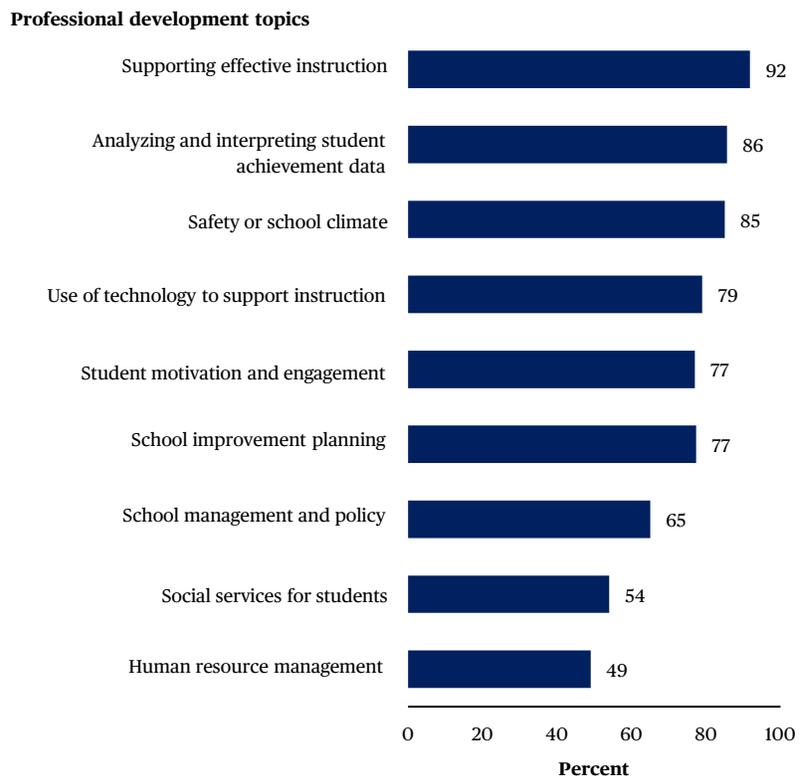


NOTE: Percentages are from table 3; see <https://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Data File,” 2017-18.

2 How prevalent among public school principals is participation in professional development in various topics, and how does this prevalence vary with school characteristics and principal experience?

The most prevalent professional development topic reported by public school principals was learning about supporting effective instruction (92 percent; **FIGURE 4**). Many principals also reported learning about analyzing and interpreting student achievement data and safety or school climate. About three-quarters of principals participated in professional development on the use of technology to support instruction, student motivation and engagement, and school improvement planning. About two-thirds of principals received training in school management and policy, and about half reported participating in professional development in social services for students, and human resource management.

FIGURE 4. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in professional development in various topics: 2017-18



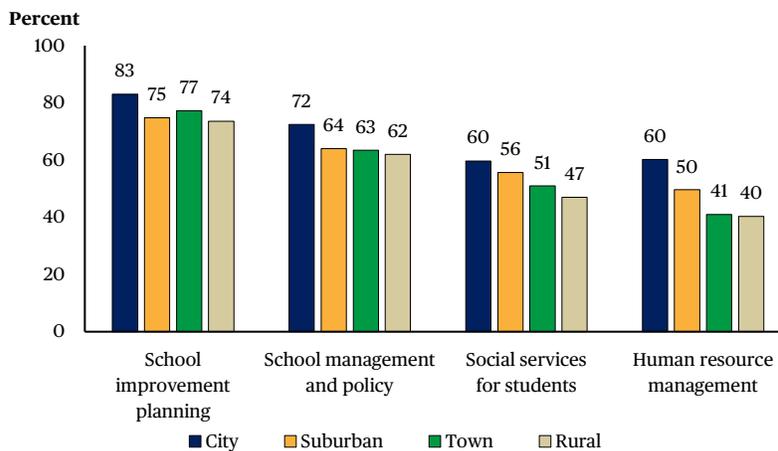
NOTE: Percentages are from table 4; see <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Principal Data File," 2017-18.

Professional development in most topic areas varied little by principal experience or school characteristics (data not shown; see table 4 at <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020045>). However, topics related to planning and management, as well as social services for students, were most prevalent in city schools. Principals in city schools more often reported learning about school improvement planning (83 percent), school management and policy (72 percent), and human resource management (60 percent) than did principals in suburban, town, or rural schools (FIGURE 5). In addition, principals in city schools reported learning about social services for students (60 percent) more often than did principals in town or rural schools.

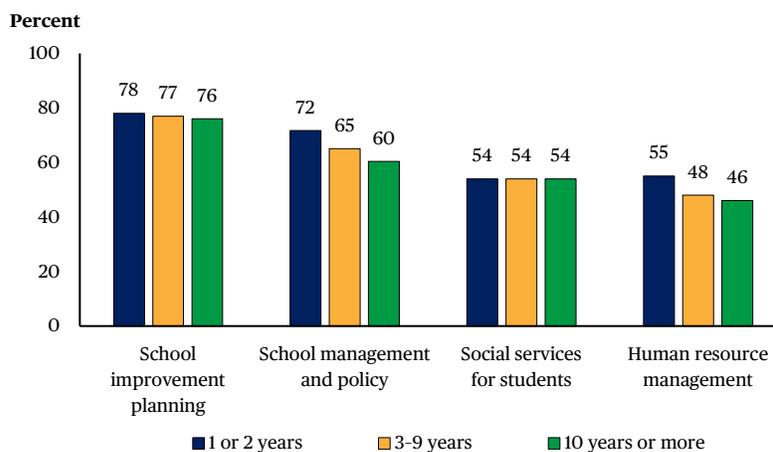
Considering the same content areas by the experience of public school principals, there is not significant variation in training rates in the subject areas of school improvement planning and social services for students (FIGURE 6). However, the least experienced principals engaged in professional development around school management and policy (72 percent) and human resource management (54 percent) at higher rates than more experienced principals.

FIGURE 5. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in professional development in various management topics and social service provision for students, by community type: 2017-18



NOTE: Percentages are from table 4; see <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school. SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Principal Data File," 2017-18.

FIGURE 6. Among public school principals with at least 1 year of experience at their current school and who participated in professional development during the last school year, percentage participating in professional development in various management topics and social service provision for students, by principal total years of experience: 2017-18



NOTE: Percentages are from table 4; see <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020045>. Percentages are among those principals who indicated that, during the last school year (2016-17), they participated in any professional development activities as a principal at their current school. SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Principal Data File," 2017-18.

Technical Notes

Overview of the NTPS

The National Teacher and Principal Survey (NTPS) is sponsored by the National Center for Education Statistics (NCES) of the Institute of Education Sciences within the U.S. Department of Education and is conducted by the U.S. Census Bureau. NTPS is a nationally representative sample survey of public and private K-12 schools, principals, and teachers in the 50 states and the District of Columbia. The NTPS was first conducted during the 2015-16 school year, and 2017-18 is the second NTPS collection.

The 2017-18 NTPS consisted of questionnaires for six types of respondents: public schools, private schools, public school principals, private school principals, public school teachers, and private school teachers. For the content of the questionnaires, see <https://nces.ed.gov/surveys/ntps/question1718.asp>. The information can be linked across teachers, principals, and schools by each sector (public and private). There is a separate data file for each type of respondent by sector (public school, private school, public school principal, private school principal, public school teacher, and private school teacher). For public schools, NTPS was designed to produce national, regional, and state estimates for elementary and secondary schools, principals, and teachers, including public charter schools and the principals and teachers within them.

For additional information on the specific NTPS-related topics discussed in this Technical Notes section, consult the *Survey*

Documentation for the 2017-18 National Teacher and Principal Survey (Cox et al. forthcoming) or the *User's Manual for the 2017-18 National Teacher and Principal Survey Volumes 1-4* (Goldring et al. 2019), as well as the report from the 2017-18 NTPS on characteristics of public and private school principals (Taie and Goldring 2019). To access additional general information on NTPS or for electronic copies of the questionnaires, go to the NTPS home page (<https://nces.ed.gov/surveys/ntps>).

Sampling Frames and Sample Selection

The starting point for the 2017-18 NTPS public school sampling frame was the 2014-15 Common Core of Data (CCD) Nonfiscal School Universe data file.³ The sampling frame was adjusted from the CCD to fit the definition of a school eligible for NTPS. To be eligible for NTPS, a school was defined as an institution or part of an institution that provides instruction to students, has one or more teachers to provide instruction, serves students in one or more of grades 1-12 or the ungraded equivalent, and is located in one or more buildings apart from a private home.

The 2017-18 NTPS universe of public schools is confined to the 50 states plus the District of Columbia and excludes the other jurisdictions, Department of Defense overseas schools, and CCD schools that do not offer teacher-provided classroom instruction in grades 1-12 or the ungraded equivalent. Since CCD and NTPS differ in scope and their definition of a school, some records were deleted, added, or modified to provide better coverage

and a more efficient sample design for NTPS. For a detailed list of frame modifications, see the *Survey Documentation for the 2017-18 National Teacher and Principal Survey* (Cox et al. forthcoming). After deleting, collapsing, and adding school records, the 2017-18 NTPS public school sampling frame consisted of about 86,800 traditional public schools and 6,800 public charter schools.

NTPS uses a systematic, probability proportionate to size sample, where size is defined to be the square root of the number of full-time-equivalent teachers in the school. Schools were oversampled based on school grade level, state, poverty status, enrollment, collapsed urbanicity, and charter status. These sampling procedures resulted in a total public school sample of about 10,580 schools (about 9,180 traditional public schools and 1,400 public charter schools). The principal or school head of each sampled school was selected.

Data Collection and Unit Response Rates

In 2017-18, NTPS employed a combined mail-based and internet survey approach, with subsequent telephone and in-person follow-up. The web was the primary mode of data collection for all questionnaire types for the 2017-18 NTPS. Paper questionnaires were introduced in the later mailings. Data collection began in September 2017 and ended in August 2018.

Unit response rates. The responses were weighted to produce national estimates. The weights were designed to reflect the probabilities of selection and were adjusted for differential nonresponse. The unit

³ For more information about CCD, see <https://nces.ed.gov/ccd/>.

response rate indicates the percentage of sampled cases that met the definition of a complete interview. The weighted NTPS unit response rate was produced by dividing the weighted number of respondents who completed questionnaires by the weighted number of eligible sampled cases, using the initial base weight (the inverse of the probability of selection).⁴ The weighted response rate using the initial base weight was 70.2 percent for public school principals.

Unit nonresponse bias analysis.

Because the *NCES Statistical Standards (4-4)* require analysis of nonresponse bias for any survey stage with a base-weighted response rate less than 85 percent, the NTPS principal files were evaluated for potential bias. For further information on unit response rates

and nonresponse bias analysis, see the *Survey Documentation for the 2017-18 National Teacher and Principal Survey* (Cox et al. forthcoming).

Variables Used and Item Response Rates

The variables from the survey used in this Statistics in Brief are listed in the text box below, along with the variable names used in the data file and the weighted item response rates. The analysis variables (with variable names) are defined after the text box. For additional information about the variables, see the *User’s Manual for the 2017-18 National Teacher and Principal Survey Volumes 1-4* (Goldring et al. 2019).

Principals reported in 2017-18 for the previous school year (2016-17)

about their participation in professional development activities while a principal at their current school to help understand how it might be affecting principal practices during the 2017-18 school year. Because principals were reporting about professional development activities undertaken as a principal at their current school in the previous school year, the analyses presented in this report are for principals with at least one year of experience at their current school.

Definitions of analysis variables.

This report focuses on national estimates and bivariate relationships between the analysis variables and questionnaire variables. The following variables were used for analysis in this report.

Variable label	Variable name	Response rate
Professional development participation, any activities	A2700	99.2
Professional development evaluation consideration	A2703	98.5
Professional development, university courses	A2704	98.3
Professional development, visit other schools	A2705	98.2
Professional development, coaching of principals	A2706	98.3
Professional development, principal network	A2707	98.3
Professional development, workshops, conferences or training as a presenter	A2708	98.4
Professional development, other workshops	A2709	98.3
Professional development participation-analyzing/interpreting student achievement data	A2710	98.4
Professional development participation-human resource management	A2711	98.1
Professional development participation-student motivation and engagement	A2712	98.2
Professional development participation-technology instructional support	A2713	98.2
Professional development participation-management and policy	A2714	97.7
Professional development participation-improvement planning	A2715	98.2
Professional development participation-student social services	A2716	97.8
Professional development participation-safety/school climate	A2717	98.2
Professional development participation-effective instructional support	A2718	98.4
Total years of experience as a school principal	A0104	99.7
Years of experience at the current school	A0105	99.9

⁴ For the formula used to calculate the unit response rate, see *2012 Revision of NCES Statistical Standards: Final* (NCES 2014-097), <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014-097>.

Urban-centric school locale code (URBANS12): Taken from the Public School Data Files, URBANS12 is a created variable collapsed from the 12 category urban-centric school locale code (SLOCP12) which was updated to incorporate Census population and geography information and recoded into four categories, as follows:

- City: includes city, large; city, midsize; city, small.
- Suburban: includes suburb, large; suburb, midsize; suburb, small.
- Town: includes town, fringe; town, distant; town, remote.
- Rural: includes rural, fringe; rural, distant; rural, remote.

Total years of experience as a school principal (A0104):

Taken from the public school principal questionnaire, A0104 is a continuous variable recoded as a categorical variable into three categories: 1 or 2 years, 3 to 9 years, and 10 years or more.

Sources of Error in Estimates

A survey estimate is subject to two types of errors: nonsampling and

sampling. Nonsampling errors are attributed to many sources, including definitional difficulties, the inability or unwillingness of respondents to provide correct information, differences in the interpretation of questions, an inability to recall information, errors made in collection (e.g., in recording or coding the data), errors made in processing the data, and errors made in estimating values for missing data. Quality control and edit procedures were used to reduce errors made by respondents, coders, and interviewers. In contrast, sampling errors result from the collection of data from a sample of the population rather than the full target population, and estimates of the magnitude of sampling error for NTPS data can be derived or calculated. Because of both types of errors, the survey estimates may differ from the values that would be obtained from the target population using the same questionnaire, instructions, and field representatives.

Statistical Procedures

Comparisons of estimates in the text have been tested for statistical

significance using the Student's *t* statistic to ensure that the differences are larger than those that might be expected due to sampling variation. All statements cited in the text are statistically significant at the $p < .05$ significance level (indicating that there is less than a 5 percent chance that the difference occurred by chance), using two-tailed statistical tests. Student's *t* values were computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. The threshold for determining significance at the 95 percent level for all comparisons in this report was $t = 1.96$. The standard errors of the estimates for difference subpopulations can vary considerably and should be taken into account when drawing conclusions about the estimates being compared. No adjustments for multiple comparisons were made in the analyses presented in this report.

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