

Documentation for the 2015–16 National Teacher and Principal Survey

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Chapter 1. Overview

The National Center for Education Statistics (NCES) sponsors the National Teacher and Principal Survey (NTPS) on behalf of the U.S. Department of Education in order to collect data on public elementary and secondary schools in the United States. The U.S. Census Bureau conducts the survey for NCES. NTPS provides data on the characteristics and qualifications of teachers and principals, teacher hiring practices, professional development, class size, and other conditions in schools across the nation.

NTPS is a large-scale, nationally representative sample survey of K–12 public schools and the principals/administrators and teachers who staff them in the United States. NTPS has replaced the Schools and Staffing Survey (SASS), which has historically collected the information necessary to form a complete picture of elementary and secondary education in the United States. NTPS has a different structure and sample from previous administrations of SASS; however, it maintains the same focus on schools and their teachers and administrators that was traditionally held by SASS. Like SASS, NTPS provides a wide range of opportunities for analysis and reporting on elementary and secondary educational issues.

The 2015–16 NTPS data products include three restricted-use data files: Public School, Public School Principal, and Public School Teacher. Data users can link these files together for additional analytical opportunities. The 2015–16 NTPS data will also appear in PowerStats (<https://nces.ed.gov/datalab/>), which allows users to create tables and regressions.

Background

In the early 1980s, education policymakers became increasingly aware of the need for studies that would provide national data on public and private schools and their programs, teachers, and staffing levels. Such data would inform policymakers about the status of teaching and education, identify the areas that most need improvement, and clarify conflicting reports on issues related to policy initiatives, such as teacher shortages.

The first attempt to address these concerns began in 1983 with a series of five surveys:

- The *Survey of Teacher Demand and Shortage* was conducted in 1983–84 among public and private schools and included questions on teacher demand and incentive plans for teachers.
- The *Public School Survey—School Questionnaire* was conducted in 1984–85 to provide descriptive information about public schools (e.g., enrollment and number of teachers) as well as data on use of teacher incentive plans, volunteers, and computers.
- The *National Survey of Private Schools—School Questionnaire* was conducted in 1985–86 to provide parallel information about private schools.
- The *Public School Survey—Teacher Questionnaire* was conducted in 1984–85 to provide information about teacher characteristics, qualifications, incentives, and opinions concerning policy issues.
- The *National Survey of Private Schools—Teacher Questionnaire* was conducted in 1985–86 to provide parallel information about private school teachers.

The Schools and Staffing Survey

Due to methodological and content-related concerns with the existing surveys and the increasing demands for more and improved education data, NCES initiated a redesign of its elementary/secondary education surveys in 1985, which resulted in SASS.

Under a contract with NCES, the RAND Corporation redesigned the elementary/secondary education surveys to collect information relevant to their expanded purposes and to correct the methodological difficulties affecting them. SASS was designed to provide a national snapshot of America’s public and private schools, with the first administration in the 1987–88 school year. In order to achieve high response rates and to maintain consistency in procedures across the different SASS questionnaires, NCES selected the U.S. Census Bureau to collect and process the data.

After the 1987–88 administration of SASS, the survey was conducted again during the 1990–91, 1993–94, 1999–2000, 2003–04, 2007–08, and 2011–12 school years. During the 6-year hiatus between the 1993–94 and 1999–2000 administrations, NCES examined the purpose, direction, and use of the survey. Toward this purpose, NCES commissioned 12 papers from experts that included recommendations regarding improving and expanding the scope and utility of SASS. These papers are compiled in *The Schools and Staffing Survey: Recommendations for the Future* (NCES 97-596) by John E. Mullens and Daniel Kasprzyk. Many of the recommendations in this report were considered for inclusion in SASS, but only some of them were implemented. Factors—such as the burden on the respondent, the need to test new items, how well the recommendations fit into the overall vision for SASS, and cost constraints—had to be balanced in the SASS survey redesign.

As a result of this redesign, the 1999–2000 SASS implemented a new set of questionnaires. The questionnaires for public charter schools were designed to collect some of the same data as the 4-year longitudinal survey, the National Study of Charter Schools, funded by the Office of Educational Research and Improvement (renamed the Institute of Education Sciences in 2002). By including public charter schools in SASS, public charter school data could be directly compared to “traditional” public school data for the first time. The availability of a complete universe, or sampling frame, for public charter schools made this development feasible in 1999–2000. Public charter schools that met the definition of a SASS school were sampled at 100 percent for the 1999–2000 SASS.¹

The 2003–04 SASS did not continue the practice of including all eligible charter schools. Instead, the 2003–04 SASS drew a sample of charter schools. The public charter school frame used for the 1999–2000 SASS was out of date, and the 2001–02 Common Core of Data (CCD) frame for charter schools was considered to be incomplete. Moreover, funding to continue administering a separate questionnaire for public charter schools was not available. The sampling of public charter schools continued for the 2007–08 and 2011–12 SASS, with an expanded sample size for the 2011–12 SASS to improve national estimates. Public charter school data are included with traditional public school data, as has been done since the 2003–04 SASS.

While SASS included Bureau of Indian Education-funded (BIE)² schools since its inception in the 1987–88 through 2007–08 collections, SASS has incorporated BIE-funded schools inconsistently over time. For the first administration of SASS, BIE-funded schools were included in the public school frame and treated like other public sector schools throughout the survey lifecycle. For the 1990–91 SASS, a sample of BIE-funded schools was drawn from a list of BIE-funded schools. The BIE-funded schools in the SASS sample were identified as a separate school sector with separate data files. From the 1993–94 SASS through the 2007–08 SASS, BIE-funded schools that met the definition of a SASS school were sampled at 100 percent. Due to funding constraints, BIE-funded schools were not sampled for the 2011–12 SASS and therefore are not included in the data files.

¹ A school was eligible for SASS if it had students in any of grades 1–12 and was in operation during the SASS data collection year.

² The Office of Indian Education Programs of the Bureau of Indian Affairs (BIA) was renamed and established as the Bureau of Indian Education (BIE) in 2006. BIE-funded schools were referred to as BIA schools in the documentation for SASS administrations prior to 2007–08.

The National Teacher and Principal Survey

Following the administration of the 2011–12 SASS, NCES initiated a redesign of SASS to NTPS with three key goals: flexibility, timeliness, and integration with other Department of Education data collections. In order to answer several key methodological questions and optimize the design of the 2015–16 NTPS, a Pilot Test was conducted during the 2014–15 school year. This pilot test included several experiments related to data collection strategies whose results informed the methods employed for NTPS production. The 2015–16 NTPS included additional experiments to further test data collection strategies for future NTPS administrations.

Although similar to SASS, NTPS is planned to be conducted every 2 years rather than every 4 years and, for the 2015–16 iteration, will yield only nationally representative estimates for teachers, principals, and schools. Specifically, NTPS collects data on core topics including teacher and principal preparation, classes taught, school characteristics, and demographics of the teacher and principal labor force. In addition, each administration of NTPS contains rotating modules on important education topics such as professional development, working conditions, and evaluation. This approach allows policymakers and researchers to assess trends on both stable and dynamic topics. NTPS uses both paper and internet data collection instruments. The 2015–16 NTPS included an experimental sample of schools to test the impact of offering internet response for the school-level questionnaires at the onset of data collection on the questionnaire response rates.

Although NTPS has a different structure and sample design than previous SASS administrations, the focus remains on schools and their teachers and principals. The content of the 2011–2012 SASS formed the basis of the NTPS content, though many questions have been shifted to different questionnaire instruments within the survey or will be answered through the use of extant data sources. For example, the Civil Rights Data Collection is used to indicate if a school has a schoolwide magnet program. For more details on the incorporation of extant data, see chapter 7. Cross-sectional analysis of trends is possible for SASS items that have been maintained in NTPS. The principal, school, and teacher questionnaires from past iterations of SASS have been updated and will serve as the primary survey materials for NTPS.

The 2015–16 NTPS provides valuable data for educators, researchers, and policymakers on public schools, including public charter schools, and the principals and teachers who work in these schools. BIE-funded schools were included in the public school frame and treated like other public sector schools throughout the survey lifecycle.

Due to the low response rates achieved for private school components in the 2011–12 SASS, private schools were not included in the 2015–16 NTPS, but there are plans for private schools to be included in future administrations of NTPS.

Chapter 2 includes details on the changes to questionnaires since the 2011–12 SASS.

Purpose and Content of the Survey

The overall objective of NTPS is to collect the information necessary for a comprehensive picture of elementary and secondary education in the United States. The abundance of data collected permits detailed analyses of the characteristics of schools, principals, and teachers. The linkage of the NTPS questionnaires enables researchers to examine the relationships among these elements of education. The 2015–16 NTPS consisted of three questionnaires: a school questionnaire, a principal questionnaire, and a teacher questionnaire.

School Questionnaire (Form NTPS-3)

The purpose of the 2015–16 School Questionnaire was to obtain information about public schools. The 2015–16 School Questionnaire included the following six sections:

- *Section I—General Information About This School* obtained information about grade range, enrollment, school type, attendance, length of the school day and school year, length of the school day for kindergarten students, whether the school has a library media center, online courses, and programs offered by the school.
- *Section II—School Staffing* obtained information about the number of full- and part-time staff, race/ethnicity of teachers, specialist and teacher coaching assignments, level of difficulty involved in filling teacher vacancies, and newly hired teachers.
- *Section III—Community Service Requirements* collected information about whether the district offers high school diplomas and, if so, the community service requirements for graduation.
- *Section IV—Special Programs and Services* obtained information about students with Individual Education Plans, instructional settings for students with disabilities, the National School Lunch Program, and Title I services.
- *Section V—Charter School Information* collected information from public charter schools on the governance structure.
- *Section VI—Contact Information* collected the respondent’s name, title, and contact information.

Principal Questionnaire (Form NTPS-2)

The purpose of the 2015–16 Principal Questionnaire was to obtain information about public school principals. The 2015–16 Principal Questionnaire included the following seven sections:

- *Section I—Principal Experience and Training* obtained information about principal work experience, previous positions held, highest degree earned, license or certification in school administration, and current teaching status.
- *Section II—Goals and Decision Making* obtained attitudinal information about education goals and principal’s influence on school policies and governance.
- *Section III—School Climate and Safety* obtained information about how often various types of problems occur at the school, parent involvement in school activities, teacher requirements with respect to students with academic and social/emotional needs, and teacher induction programs.
- *Section IV—Working Conditions and Principal Perceptions* collected information on time spent on school-related activities and interactions with students, percentage of time spent on various activities, contractual number of working days, union representation, job satisfaction, and plans to remain a principal.
- *Section V—Student Growth and Teacher Evaluation* collected information about the tracking of student achievement growth, the frequency and method of teacher performance evaluations, the impact of evaluations on teacher compensation and professional development opportunities, and decisionmaking concerning low-performing teachers.
- *Section VI—Principal Demographic Information* obtained information about the principal’s gender, race/ethnicity, age, and salary.
- *Section VII—Contact Information* obtained the principal’s name and contact information.

Teacher Questionnaire (Form NTPS-4)

The purpose of the 2015–16 Teacher Questionnaire was to obtain information about teachers. The 2015–16 Teacher Questionnaire included the following nine sections:

- *Section I—General Information* obtained general information about teaching status, year teacher began teaching in current school, main activity the previous year, number of schools in which teacher has taught, and years of teaching experience.
- *Section II—Class Organization* obtained information about grades taught, students with an Individualized Education Program, students of limited-English proficiency, main teaching assignment, whether teacher used instructional software, organization of classes, subjects taught, and class size.
- *Section III—Education and Training* collected information on academic degrees, major and minor fields of study, graduate/undergraduate courses on teaching methods or strategies, student teaching, and teacher preparation programs.
- *Section IV—Certification* obtained information on types of teaching certificates held by the teacher, content areas and grade ranges covered by the certification, and whether the teacher entered teaching through an alternative certification program.
- *Section V—Early Career Experiences* collected information about teachers' employment status prior to the start of their teaching career, their experiences during their first year of teaching, participation in a teacher induction program, and their involvement with a master or mentor teacher.
- *Section VI—Working Conditions* obtained information about total contract hours, hours delivering instruction, hours spent on all teaching and school-related activities, leadership or extracurricular activities, and money spent on classroom supplies without reimbursement.
- *Section VII—School Climate and Teacher Attitudes* obtained attitudinal information on teacher influence on school policy as well as classroom planning and teaching, satisfaction with teaching and school environment, student problems, plans to remain in teaching, and school safety.
- *Section VIII—General Employment and Background Information* obtained information about teacher salary, additional compensation based on student performance, supplemental income, union affiliation, tenure system, gender, marital status, race/ethnicity, and year of birth.
- *Section IX—Contact Information* requested that respondents provide personal contact information as well as contact information for two additional people who would be able to reach them in the event that they relocated before the mailing of the Teacher Follow-up Survey. This information was necessary for the Teacher Follow-up Survey that was planned to be administered the following year.

Target Populations, Estimates, and Respondent Status

Target Populations

The target populations for the 2015–16 NTPS are described below. For more information on sampling, see chapter 4.

- *Schools.* The target population included traditional public and public charter schools with students in any of grades 1–12 or in comparable ungraded levels and in operation during the 2015–16 school year. BIE-funded schools were included in the public school sample.
- *Principals.* The target population included principals of the targeted school populations.
- *Teachers.* The target population included teachers in the targeted school populations who taught students in any of grades K–12 or in comparable ungraded levels during the 2015–16 school year.

The sampling frame for public schools was the preliminary version of the 2013–14 CCD, which reflects the population of public schools during the 2013–14 school year. CCD includes traditional public schools, public charter schools, Department of Defense-operated domestic military base schools, and special purpose schools, such as special education, vocational, and alternative schools. Schools outside of the

United States and schools that teach only prekindergarten, kindergarten, or postsecondary students were excluded from the CCD frame prior to sampling for NTPS. Public schools that closed in school year 2013–14 or were not yet opened were not included. Prior to stratification and sampling, CCD schools were collapsed to match the NTPS definition of a school. The purpose and operations of this collapsing activity are discussed in chapter 4.

The sampling frame for the teacher questionnaire consisted of lists of teachers provided by schools in the NTPS sample or, for schools that did not provide a teacher list during NTPS, vendor-purchased teacher rosters and lookups on school and district websites. Teachers were defined as any staff who taught a regularly scheduled class to students in grades K–12 or comparable ungraded levels. U.S. Census Bureau staff requested the Teacher Listing Form (TLF), an electronic or paper roster of teachers, from all traditional public and public charter schools in the NTPS sample to obtain a complete list of all the teachers employed at each school. The form included space for schools to indicate the following: the teacher's assignment (subject matter), full- or part-time status, and e-mail address. If schools did not return TLF, the vendor-purchased teacher rosters were used for teacher sampling. For more details on TLF, see chapter 5. The sample of teachers was selected from all of the sampled schools for which a teacher list was obtained.

All principals from sampled schools were also surveyed for NTPS.

Estimates

NTPS was designed to produce national estimates for public primary, middle, and high schools and related components (e.g., schools, teachers, and principals), as well as national estimates for public schools with combined grade levels and public charter schools and related components (e.g., schools, teachers, and principals).

The teacher survey was designed to support comparisons between new and experienced teachers (3 years or less of experience vs. more than 3 years of experience) at the national level for public school teachers. Comparisons between teachers by race/ethnicity, detailed experience level (first year, second and third years, fourth or more years), and full-time or part-time status are possible at the national level.

Respondent Status

The number of respondents that were sampled, were determined to be in scope for NTPS, and completed the interview is presented in table 1 below. Sampled respondents are those who were selected for participation in NTPS for each respondent type. Sampled respondents were classified as in scope if they were deemed eligible for NTPS during the screening operation or data collection period. Interviews are in-scope respondents that completed their questionnaire. Cases were classified as having completed the questionnaire if specific items as well as a specific percentage of items had responses; these criteria differ by questionnaire. For details on sampling, see chapter 4. For details on in-scope and out-of-scope cases and on determining how many sampled respondents completed interviews (i.e., final interview status), see chapter 7.

Table 1. Number of schools, principals, and teachers, by interview status: 2015–16

Respondent and interview status	Public schools
School	
Sampled	8,300
In-scope	8,029
Interviews	5,767
Principal	
Sampled	8,300
In-scope	8,027
Interviews	5,713
Teacher	
Sampled	48,987
In-scope	46,780
Interviews	31,993

NOTE: Cases that met sampling requirements are included in the “sampled” category. Of those cases, “in-scope” refers to the sampled cases that met NTPS eligibility requirements (i.e., interviews as well as noninterviews). “Interviews” consist of eligible (in-scope) cases for which data were collected.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Documentation Data Files,” 2015–16.

Contents

This report contains chapters on the following topics: changes in design, content, and methodology from 2011–12 SASS; preparation for the 2015–16 NTPS; frame creation and sample selection; data collection; response rates and bias analysis; data processing; weighting and variance estimation; and data quality.

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- A. Key Terms for NTPS
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- C. Crosswalk Among Items in the 1987–88, 1990–91, 1993–94, 1999–2000, 2003–04, 2007–08, and 2011–12 SASS and 2015–16 NTPS and Crosswalk of Variables Across the 2015–16 NTPS Questionnaires
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Chapter 2. Changes in Design, Content, and Methodology From the 2011–12 SASS to the 2015–16 NTPS

After the 2011–12 cycle of the SASS, the NCES and the U.S. Census Bureau (Census Bureau) worked together to redesign SASS into a new survey called the NTPS. During this redesign, NCES and the Census Bureau made changes to the former SASS sample design, survey content, and data collection methodology in preparation for the 2015–16 NTPS. This chapter describes the changes implemented for the 2015–16 NTPS.

The planning for the redesign involved a pilot test, which was conducted during the 2014–15 school year, beginning in September 2014. The purpose of the pilot test was to test questionnaire content and data collection procedures in order to plan for the first production data collection for the 2015–16 NTPS. The pilot test evaluated a number of research projects and sample design changes described in detail below.

Sample Design Changes

Changes to the Sample Design for the 2015–16 NTPS

NTPS replaces SASS outright as one of the key sources of nationally representative data on a range of important education topics. NTPS will be conducted every 2 years rather than every 4 years. The more frequent data collection will give more timely data for national estimates and for estimates by key school characteristics, such as charter status, school level, school size, urbanicity, and participation in the National School Lunch Program.

There were two key differences between SASS and NTPS in the survey structure. First, unlike SASS, the 2015–16 NTPS is not designed to produce state-level estimates. Second, private schools were not included in NTPS data collection for the 2015–16 cycle.

A change to the sampling frame is the inclusion of the Bureau of Indian Education (BIE) schools on the 2015–16 NTPS frame, as they were previously excluded from the 2011–12 SASS frame.³

Frame Development Research

One of the major areas of research interest during the redesign from SASS to NTPS was investigating how best to create and update the NTPS sampling frame.

Like its predecessor, NTPS used the Common Core of Data (CCD) as the foundation for the sampling frame. CCD is a universe of public and charter schools collected from state education agencies. The definition of a school differs for NTPS and CCD. Therefore, the CCD universe needs to be modified to fit the NTPS definition of a school by adding, deleting, editing, and collapsing school records. In addition, due to the timing of CCD file availability, further adjustments are needed to account for changes to schools that occurred since the most recent CCD release. Since NTPS is conducted more frequently than SASS, research was conducted to determine if there were ways to reduce the cost of frame development while still maintaining frame coverage and quality. Four areas of the frame development activities—adding records, collapsing records, reviewing grade range edits, and deleting records—were researched to determine the effectiveness of the previous operations used for SASS and whether any changes should be made for NTPS. A summary of the frame development research conducted on the 2011–2012 SASS for

³ Definitions of school types and other key terms are provided in “Appendix A: Key Terms for NTPS.”

each of the four areas and the resulting changes made to the final 2015–16 NTPS frame development process follows.

Adding Records

The first area of frame development research consisted of evaluating two techniques that SASS used to add school records to the frame. One technique was contacting administrative entities (such as county offices of education and intermediate units) that had records on the School CCD but did not appear to be schools, and the other involved researching district records on the School District (local education agency) CCD that did not have matching schools on the School CCD. The frame research project evaluated the two techniques in terms of both cost and the number of in-scope cases added to the frame.

For the first technique, the results showed that adding school records provided from the administrative entities cost approximately \$95,000 and added 115 schools to the frame, representing a cost of \$3,700 per in-scope add (an estimated 22 percent of the added schools were in-scope). For the second technique, the results showed that adding school records by researching district records cost approximately \$13,000 and added 90 schools to the frame, representing a cost of \$300 per in-scope add (an estimated 48 percent of the added schools were in-scope). Based on these findings, the recommendation for the 2015–16 NTPS was to drop the process of adding records from the administrative entities but to continue the process of adding schools from the district records. As a result of this change, overall coverage was reduced by only 0.04 percent.

Collapsing Records

The second area of frame research evaluated the established procedure for collapsing two or more school records from CCD into one school record on the SASS frame. The purpose of collapsing was to reflect the true level of the schools on the SASS frame. Specifically, if separately listed schools appeared to be a single combined school from the available information—if they shared identical details including name and address—then they were collapsed into one combined school. The CCD records were collapsed according to replicable rules. This collapsing process relied on software currently used for updating the Private School Survey (PSS) list frame, modified to adhere to the strict and relaxed collapsing rules described further below. In general, this software compared schools on CCD and resulted in a list of entities that were potential candidates for collapsing based on matching criteria for school name, address, and phone number. This list of matches was then manually reviewed by Census Bureau staff to verify that the entities should be collapsed into a single school.

The research questions surrounding school collapsing were the following:

1. Should all of the collapsed schools have been collapsed?
2. Should any of the noncollapsed schools have been collapsed?

School CCD records were compared for matches in three fields: school name, address, and phone number. The criteria for collapsing schools vary by state. For some states, no collapsing was needed. The remaining states that did need their school records collapsed were assigned to one of two sets of collapsing rules—relaxed or strict. Relaxed collapsing rules meant that school records were collapsed if they matched on two of the three match fields, whereas strict collapsing rules meant they were collapsed only if the records matched for all three of the fields.

The conclusion of the collapsing research was that the school collapsing should continue in NTPS as it had in SASS and a few changes should be implemented:

- Maine and West Virginia will no longer be collapsed due to the minimal amount of collapsing that occurred in SASS.
- Collapsing in Iowa will continue but using the strict collapsing rules.
- Collapsing in Colorado, Idaho, Kansas, Michigan, and Minnesota will continue but using the relaxed rules.
- Schools in all other states will continue to be collapsed according to their SASS collapsing rules (relaxed collapsing, strict collapsing, or no collapsing).

Overall, records were collapsed for 22 states in NTPS. In summary, the relaxed collapsing rules were applied in 12 states: Arkansas, Colorado, Idaho, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Oklahoma, and South Dakota. The strict rules were applied in the other 10 states: Illinois, Iowa, New Hampshire, New Mexico, Ohio, Oregon, Utah, Washington, Wisconsin, and Wyoming.

Reviewing Grade Range Edits

The third area of frame development research reviewed the grade range editing process. For previous SASS administrations, reviewers would examine grade ranges coming from the CCD file and change the lowest or highest grade, or both. Changes were most common in circumstances where the grade range contained grades for which there were zero students or a small percentage of the student enrollment of other grades. In such cases, those grades would be dropped.

The research questions concerning the grade range edit process were the following:

1. Did the grade range correction process work appropriately?
2. Can the process be improved?

To assess whether the grade range correction process works, consistency checks were performed between the 2011–12 SASS survey data and the 2009–10 CCD and 2011–12 SASS sampling files. The research concluded that the edits improved the accuracy of the grade range for about 82 percent of schools with grade ranges edited. To assess if the process could be improved, a closer examination was done on the 6 percent of unedited schools for which the reported grade range in the SASS survey data was inconsistent with CCD. It was found that for most of these schools the grade range actually changed over time, in which case the grade range on CCD was correct at the time. Therefore, the SASS grade range edit process was determined to be a success, and there were no obvious improvements to be made. The research concluded that the same procedure would continue to be used as part of the NTPS frame creation process.

Deleting Records

The fourth area of frame development research analyzed the SASS process of deleting records from the frame based on either (1) nonpositive enrollment or teacher count values or (2) school name criteria.

The results of the research showed that frame schools with an enrollment or teacher count that is nonpositive (zero, missing, or not applicable) should be retained on the frame. It was found that for the 2011–12 SASS, 57 percent of the schools with nonpositive enrollment and 55 percent of the schools with nonpositive teacher count were actually in-scope. The enrollment and/or teacher count (and often other sample design variables) will be imputed, as has been done historically.

In order to enhance the deletion of records likely to be out of scope for NTPS, a list of additional keywords was added to those that have historically been used in SASS. These keywords are the following:

- DAEP (disciplinary alternative education program);
- educational COOP (educational cooperative/co-op);
- penitentiary;
- prison;
- EVIT (East Valley Institute of Technology—program in Arizona);
- individualized study;
- correctional;
- summer;
- exceptional student;
- secure detention; and
- county learning center.

Frame Imputation Research

As part of the SASS to NTPS redesign, NCES evaluated the imputation methods that were used to impute the regular public and charter school frame variables for SASS. In addition to the frame modifications described earlier, using CCD as the foundation for the NTPS frame also requires editing and imputation of variables with inconsistent and incomplete reporting that are used in the NTPS design. Accurate imputation is important because it improves the efficiency of the sample.

During the first step of frame imputation, the school’s missing data are filled in with that same school’s data from the previous CCD cycle, if available. This imputation technique will be referred to as “direct assignment.” Intuitively, this method should work well if the school’s values from the previous CCD cycle are consistent with the school’s values on the most recent CCD that are used to create the NTPS frame. The performance of the direct assignment method was evaluated based on how much the missing rate could be reduced by using data from previous CCD cycle(s). In addition, a two-step imputation process using two prior CCD cycles was investigated for use in NTPS; SASS historically used only one prior CCD in its imputation procedure.

Frame Imputation: Summary

Exhibit 1 provides a summary of the imputation method used in SASS and the recommended revised method for each frame variable. Research found that the two-step method performed well for direct assignment. Therefore, for several variables identified in exhibit 1 (grade range, teacher counts, total enrollment, and free and reduced-price lunch), imputation from two CCD cycles prior was added as a recommended method.

NTPS also introduced the use of poverty data from the Census Bureau’s Small Area Income and Poverty Estimates (SAIPE) program for the imputation of the variable TOTFRL (Total Free or Reduced-Price Lunch).

Finally, similar to the SASS imputation method, regular public and charter schools will be processed separately under the recommended imputation method for NTPS.

Exhibit 1. Summary of frame imputation research findings and recommendations

CCD Variable	SASS Imputation Method	Revised NTPS Method
Grade Offered—Lowest (GSLO) and Grade Offered—Highest (GSHI)	Step 1—Direct assignment using grade offered data from one prior CCD cycle. Step 2—School name matching for the remaining missing schools. Step 3—Assign values of “PK” to the remaining schools where grade offered—lowest is missing and “12” to schools where grade offered—highest is missing.	Step 1—Direct assignment using grade offered data from one prior CCD cycle. Step 2—Direct assignment using grade offered data from two prior CCD cycles for the remaining missing schools. Step 3—School name matching for the remaining missing schools. Step 4—Assign values of “PK” to the remaining schools where grade offered—lowest is missing and “12” to schools where grade offered—highest is missing.
Teacher Count (FTE) and Total Enrollment (MEMBER)	Step 1—Direct imputation using teacher count data from one prior CCD cycle. Step 2—Cell averages for the remaining missing schools.	Step 1—Direct imputation using teacher count data from one prior CCD cycle. Step 2—Direct imputation using teacher count data from two prior CCD cycles for the remaining missing schools. Step 3—Cell averages for the remaining missing schools.
Total Free or Reduced-Price Lunch (TOTFRL)	Step 1—Direct imputation using TOTFRL data from one prior CCD cycle. Step 2—Cell ratio for the remaining missing schools.	Step 1—Direct imputation using TOTFRL data from one prior CCD cycle. Step 2—Direct imputation using TOTFRL data from two prior CCD cycles for the remaining schools with missing data. Step 3—Regular public school, PMM ¹ with Pov_Ratio ² for the remaining missing schools. Charter school, PPM without Pov_Ratio for the remaining missing schools.
Enrollment by Race: White (WHITE), Hispanic (HISP), and Black (BLACK)	N/A	Step 1—Direct imputation using enrollment by race data from one prior CCD cycle. Step 2—Regular public school, PPM for the remaining missing schools. Charter school, cell ratio for the remaining missing schools.
Enrollment by Race: American Indian/Alaskan Native (AM), Asian (ASIAN), Hawaiian Native/Pacific Islander (PACIFIC), and Two or More Races (MR)	N/A	Step 1—Direct imputation using enrollment by race data from one prior CCD cycle. Step 2—Regular public and charter school, PMM for the remaining missing schools.

¹ Predictive Mean Matching (PMM) is an imputation technique for continuous variables, using other records with similar predicted values to impute a missing value.

² The Poverty Ratio (Pov_Ratio) is a value used for imputing TOTFRL using data from the Census Bureau’s Small Area Income and Poverty Estimates (SAIPE) program. The ratio is defined as the relevant total number of children age 5–17 in poverty divided by the total school district population, and it is calculated for each school district.

Sample Design and Stratification Issues

In addition to the frame creation research and resulting changes, several changes to the sample design were made during the transition from the 2011–12 SASS to the 2015–16 NTPS.

State-Based Design

SASS was stratified by state, with FIPS (Federal Information Processing Standards) state code second only to stratum in the sort order. The 2015–16 NTPS was not designed to publish state-level estimates and therefore did not stratify by state. However, inflation factors were incorporated to guarantee a minimum sample size in each state.

Grade Level Changes

During the 2011–12 SASS, there was a difference in stratification between the regular public schools and the charter schools. Regular public schools were separated into four strata (primary, middle, high, and combined schools) while charter schools were separated into three strata (elementary, secondary, and combined). For the 2015–16 NTPS, all regular public schools and charter schools used the same four strata for grade level.

Type 2 Certainties

The 2011–12 SASS school sample included both Type 1 and Type 2 certainties. Type 1 certainties are schools with a measure of size greater than the sampling interval, which means these schools were included in the sample with certainty. In other words, the Type 1 certainty schools were the schools with an unusually high number of teachers relative to other schools in the same sampling stratum, and therefore they were automatically included in the sample. Type 2 certainty schools are the schools with the highest probability of selection within each school district in four states: Florida, Maryland, Nevada, and West Virginia. These Type 2 certainty schools were included in the sample with certainty to guarantee that all school districts in these states would have at least one school in the sample, a requirement that was set to produce reliable school district estimates.

The 2015–16 NTPS kept the same definition of Type 1 certainty schools, but did not use Type 2 certainties in the same way, as there was not the same need for representation at the school district level. Instead, NTPS identified schools as Type 2 certainties if they had an adjusted measure of size that was less than the Type 1 certainty schools but high enough to be selected in the sample with certainty. The distinction is due to the selection of an additional 1,000 cases for an internet response experiment; Type 2 certainties for NTPS had nothing to do with school districts as they did for SASS. For the 2015–16 NTPS, Type 1 certainties are the schools that would automatically be in the sample with or without the selection of the extra 1,000 experimental cases, whereas Type 2 certainties are the schools that are only automatically in the sample because we selected the additional 1,000 cases.

Strata Definitions in Teacher Sampling

In the 2011–12 SASS, teachers were placed into strata for sampling based on years of experience, with four experience levels as follows: first year, 2–3 years, 4–19 years, and 20+ years. This stratification was used to sort after control number, with teacher subject used later in the sort order. For the 2015–16 NTPS, experience as a teacher did not factor into the sort order. Instead, teachers were placed into strata based on a combination of subject taught (math, science, English/language arts, social studies, other) and teacher order within the teacher listing for the school. This process led to a diversification of the sort order with respect to these variables.

Sample Allocation

The respondent universe for the 2015–16 NTPS full-scale data collection consisted of 94,128 public schools in the 50 U.S. states and the District of Columbia that offered instruction in any of grades K–12. The sample size was designed for a target of completed interviews from 5,300 schools and 27,450 teachers.

Given that target, the 2015–16 NTPS sample included the following:

- 8,300 schools and school principals (7,127 traditional public and 1,173 charter schools); and
- 48,987 teachers (43,674 traditional public and 5,313 charter school teachers).

An additional 1,000 schools and principals were sampled for an internet response experiment conducted during the 2015–16 NTPS data collection.

The number of sampled schools was reduced, compared to the total sample of 14,000 schools included in the 2011–12 SASS. Note that 3,000 of those were private schools, which are not in scope for the 2015–16 NTPS data collection. Of the remaining 11,000 public schools sampled for the 2011–12 SASS, 750 were public charter schools and the remaining 10,250 were traditional public schools. See chapter 4 for further details on the sample allocation and stratification.

Content Changes

Prior to the first administration of NTPS during the 2015–16 school year, extensive pretesting was conducted. Chapter 3 provides a description of the field test. With both the change in priorities that were the foundation of the NTPS redesign and the information from the field test in the 2014–15 school year, the questionnaires from the 2011–12 SASS were significantly revised for use in the 2015–16 NTPS. Private schools were not included in the 2015–16 NTPS, so the private versions of these questionnaires were not used. In addition, the District Questionnaire and School Library Media Center Questionnaire components of SASS are not part of NTPS. “Appendix B. Questionnaire Availability Online, Downloadable PDF Files” provides the website and instructions for accessing electronic files of the final 2015–16 NTPS questionnaires.

Exhibit 2 includes a synopsis of actions (deleted, newly added, revised, or no change) that occurred to questionnaire items during the revision process, organized by questionnaire type. The items with 9000 series source codes are not included in the counts below because these are respondent contact information items that are not included on the restricted-use data files.

Exhibit 2. Number of deleted, added, revised, and unchanged source codes, by data file: 2015–16

Questionnaire	Number of source codes deleted from the 2011–12 SASS	Number of source codes on the 2015–16 NTPS			
		Newly added	Revised	No changes	Total
Principal Questionnaire	126	32	0	79	111
School Questionnaire	90	16	0	115	131
Teacher Questionnaire	93	30	0	339	369

NOTE: Source codes are used to identify specific items on the SASS/NTPS questionnaires.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS) Questionnaires, 2011–12 and National Teacher and Principal Survey 2015–16.

Because private schools were excluded from the 2015–16 NTPS, all survey questions related to private schools were removed for the 2015–16 cycle. Items that were deleted for this administration from the public school, principal, and teacher questionnaires fell within the following topics: racial/ethnic makeup of schools, teacher and principal professional development, and school climate and safety. The sections below present detailed information on questions that were deleted. The specific question numbers from the 2011–12 SASS are included in parentheses following the question wording for the items deleted. Some of the items that were deleted from this administration are scheduled to appear on later NTPS collections.

Some of the new content included in the 2015–16 NTPS delves into topics such as teacher education and training, personal growth and teacher evaluations, and online curriculum resources. Detailed information on questions that were added is presented in the sections below. The specific question numbers from the 2015–16 NTPS questionnaires are included in parentheses following the question wording for the items added.

An item crosswalk (by source codes) of the 2011–12 SASS with the 2015–16 NTPS for each questionnaire type is located in “Appendix C. Crosswalk Among Items in the 1987–88, 1990–91, 1993–94, 1999–2000, 2003–04, 2007–08, and 2011–12 SASS and 2015–16 NTPS and Crosswalk of Variables Across the 2015–16 NTPS Questionnaires.” Also included in this appendix are crosswalks that compare similarities and differences across the 2015–16 SASS questionnaires given to each type of respondent (i.e., school, principal, or teacher).

Principal Questionnaire

Principal Questionnaire—2011–12 SASS Questions Not Included in the 2015–16 NTPS

- **PRINCIPAL EXPERIENCE AND TRAINING**
 - (6) BEFORE you became a principal, did you hold the following school positions? (6a) Department Head (6b) Curriculum specialist or coordinator (6d) Guidance Counselor (6e) Library media specialist/Librarian (6f) Athletic Coach/Athletic director (6g) Sponsor for student clubs, debate teams (6a, 6b, 6d–6g)
- **PRINCIPAL EDUCATION AND PROFESSIONAL DEVELOPMENT**
 - (a) Do you have a bachelor’s degree? (b) Was this degree awarded by a university’s Department or College of Education, or a college’s Department or School of Education? (c) What was your major field of study? (d) Did you have a second major field of study? (e) What was your second major field of study? (10a–10e)
 - (a) Do you have a master’s degree? (b) Was this degree awarded by a university’s Department or College of Education, or a college’s Department or School of Education? (c) What was your major field of study? (11a–11c)
 - In the past 12 months, have you participated in any professional development activities related to your role as a principal? (13)
 - In the past 12 months, have YOU participated in the following kinds of professional development? (a) University course(s) related to your role as principal (b) Visits to other schools designed to improve your own work as principal (c) Individual or collaborative research on a topic of interest to you professionally (d) Mentoring and/or peer observation and coaching of principals, as part of a formal arrangement that is recognized or supported by the school or district (e) Participating in a principal network (e.g., a group of principals organized by an outside agency or through the Internet) (f) Workshops, conferences, or training in which you were a presenter (g) Other workshops or conferences in which you were not a presenter (14a–14g)
- **TEACHER AND AIDE PROFESSIONAL DEVELOPMENT**
 - Does this school provide TEACHERS with time for professional development during regular contract hours? (17)
 - Are the following used to provide teachers in this school with time for professional development during regular contract hours? (a) Substitute teachers to cover teachers’ classes (b) Early dismissal or late start for students (c) Professional days built in before the beginning of the students’ school year (d) Professional days built in during the students’ school year (e) Professional days built in after the students’ school year (f) Common planning time for teachers for professional development (g) Reduced teacher workloads (less time in the

- classroom with students or less time on assigned non instructional duties) for professional development (18a–18g)
- How often is professional development for teachers at this school: (a) Designed or chosen to support the school’s improvement goals? (b) Designed or chosen to support the district’s improvement goals? (c) Designed or chosen to support the implementation of state or local standards? (d) Evaluated for evidence of improvement in student achievement? (e) Considered part of teachers’ regular work? (f) Planned by teachers in this school or district? (g) Presented by teachers in this school or district? (h) Accompanied by the resources that teachers need (e.g., time and materials) to make changes in the classroom? (19a–19h)
 - Does this school provide INSTRUCTIONAL AIDES with time for professional development during regular contract hours? (20)
- SCHOOL CLIMATE AND SAFETY
 - LAST school year (2010–11), how many students were expelled from this school, that is, removed or transferred for at least the remainder of the school year? (21)
 - What was the total number of suspensions during the LAST school year (2010–11)? (22)
 - THIS school year (2011–12), is it the practice of this school to do the following? (a) Control access to school buildings during school hours (e.g., locked or monitored doors) (b) Control access to school grounds during school hours (e.g., locked or monitored gates) (c) Require students to pass through metal detectors each day (d) Perform one or more random metal detector checks on students (e) Close the campus for most or all students during lunch (f) Use one or more random dog sniffs to check for drugs (g) Perform one or more random sweeps for contraband (e.g., drugs or weapons), but not including dog sniffs (h) Require students to wear uniforms (i) Enforce a strict dress code (j) Require clear book bags or ban book bags on school grounds (k) Require students to wear badges or picture IDs (l) Use one or more security cameras to monitor the school (m) Maintain a daily presence of police or security personnel (23a–23m)
 - THIS school year (2011–12), does this school have any of the following? (a) Programs or activities where students participate in the community during or after normal school hours (e.g., service learning and community service projects) (b) Programs to acknowledge student achievement (e.g., assemblies, principal list/honor roll, or student of the week/month) (c) An incentive/reward program that encourages students’ academic success (e.g., pizza parties, cash for grades) (d) A program designed to help students prepare for the next grade or college (24a–24d)
 - THIS school year (2011–12), does this school have the following? (a) A staff member assigned to work on parent involvement (b) Workshops or courses for parents or guardians (c) Services to support parent participation, such as providing child care or transportation (d) A parent drop-in center or lounge (27a–27d)
 - INSTRUCTIONAL TIME
 - Does this school have students enrolled in the THIRD GRADE? (28)
 - How long is the TYPICAL FULL WEEK of school for THIRD GRADE students? (29)
 - During a TYPICAL FULL WEEK of school, approximately how many minutes do most THIRD GRADE students spend on the following activities at this school? (a) Combined TOTAL of English, reading, or language arts (1) Of these minutes, how many were designated for reading instruction? (b) Arithmetic or mathematics (c) Social studies or history (d) Science (e) Foreign Language (Not English as a Second Language [ESL]) (f) Physical education (g) Music (h) Art (i) Recess (30a–30i)
 - Does this school have students enrolled in the EIGHTH GRADE? (31)
 - How long is the TYPICAL FULL WEEK of school for EIGHTH GRADE students? (32)

- During a TYPICAL FULL WEEK of school, approximately how many minutes do most EIGHTH GRADE students spend on the following activities at this school? (a) Combined TOTAL of English, reading, or language arts (1) Of these minutes, how many were designated for reading instruction only? (b) Arithmetic or mathematics (c) Social studies or history (d) Science (33a–33d)
- WORKING CONDITIONS AND PRINCIPAL PERCEPTIONS
 - How many total hours do you spend interacting with students during a typical FULL WEEK at this school? (35)
 - (a) Were you, or are you going to be, rated in a FORMAL evaluation this school year? (b) Are student test score outcomes or test score growth included as an evaluation criterion in your FORMAL evaluation this school year? (c) How often are you rated in a FORMAL evaluation? (39a–39c)
- TEACHER AND SCHOOL PERFORMANCE
 - In your opinion, are the following considered barriers to the dismissal of poor-performing or incompetent teachers in this school? (a) Personnel policies (b) Termination decisions not upheld (c) Length of time required for termination process (d) Effort required for documentation (e) Tight deadlines for completing documentation (f) Tenure (g) Teacher associations or unions (h) Dismissal is too stressful and/or uncomfortable for you (i) Difficulty in obtaining suitable replacements (j) Resistance from parents (41a–41j)
 - (a) How often are INFORMAL classroom observations typically conducted on TENURED OR EXPERIENCED TEACHERS of grades K-12 or comparable ungraded levels? (b) How often are INFORMAL classroom observations typically conducted on NON-TENURED OR NEW TEACHERS of grades K-12 or comparable ungraded levels? (42a–42b)
 - (a) How many FORMAL classroom observations are typically conducted prior to completing an evaluation on a TENURED OR EXPERIENCED TEACHER of grades K-12 or comparable ungraded levels? (b) How many FORMAL classroom observations are typically conducted prior to completing an evaluation on a NON-TENURED OR NEW TEACHER of grades K-12 or comparable ungraded levels? (43a, 43b)
 - (a) How long is the typical FORMAL classroom observation that occurs prior to completing an evaluation on a TENURED OR EXPERIENCED TEACHER of grades K-12 or comparable ungraded levels? (b) How long is the typical FORMAL classroom observation that occurs prior to completing an evaluation on a NON-TENURED OR NEW TEACHER of grades K-12 or comparable ungraded levels? (44a, 44b)
 - (a) For TENURED OR EXPERIENCED K-12 TEACHERS, how often are teachers rated in FORMAL evaluations? (b) For NON TENURED OR NEW K-12 TEACHERS, how often are teachers rated in FORMAL evaluations? (45a, 45b)
 - Are any of the following types of information included in the formal evaluation of any regular classroom teachers of grades K-12 and comparable ungraded levels? (a) Evaluation by the principal (1) Which best describe the type of evaluation (b) Evaluation by peers (1) Which best describe the type of evaluation (c) Evaluation by the vice principal or assistant principal (d) Evaluation by an outside group (e.g., consultant) (e) Conference with the principal (f) Teacher self-evaluation (g) Students' test score outcomes or test score growth (h) Student ratings of the teacher (i) Teacher's portfolio of examples of student learning (e.g., student essays, lab reports) (j) Completion of professional development activities (k) Other (47a–47k)
 - Are teachers' evaluations used, at least in part, to determine a teacher's compensation? (48)
 - At the end of the LAST school year (2010–11), did this school make Adequate Yearly Progress (AYP)? (49)

- At the end of the LAST school year (2010–11), was this school identified for improvement due to Adequate Yearly Progress (AYP) requirements? (50)
- DEMOGRAPHIC INFORMATION
 - Are you enrolled in a state- or federally recognized tribe? (53b)

Principal Questionnaire—Questions Added to the 2015–16 NTPS

- PRINCIPAL EXPERIENCE AND TRAINING
 - Which of the following best describes the highest degree you have earned? (1-8)
 - WHILE serving as a principal, have you also regularly taught one or more classes at the elementary, middle, or secondary level? (1-10)
- SCHOOL CLIMATE AND SAFETY
 - Are teachers at this school REQUIRED to do the following? Help students with academic needs OUTSIDE of regular school hours (3-3a) Help students with social and emotional needs OUTSIDE of regular school hours (3-3b)
 - Are BEGINNING teachers at this school enrolled in a formal schoolwide or districtwide program aimed to enhance teachers' effectiveness by providing systematic support (sometimes called a teacher induction program)? (3-4)
- WORKING CONDITIONS AND PRINCIPAL PERCEPTIONS
 - To what extent do you agree or disagree with each of the following statements? (a) The stress and disappointments involved in being a principal at this school aren't really worth it. (b) I am generally satisfied with being principal at this school. (c) If I could get a higher paying job I'd leave this job as soon as possible. (d) I think about transferring to another school. (e) I don't seem to have as much enthusiasm now as I did when I began this job. (f) I think about staying home from school because I'm just too tired to go. (4-5a–4-5f)
- STUDENT GROWTH AND TEACHER EVALUATION
 - During this school year (2015–16), is student achievement growth on standardized assessments used in the performance evaluation of teachers in this school? Please include student achievement growth within a teacher's classroom as well as teamwide, gradewide, or schoolwide student achievement growth. Student achievement growth on standardized assessments is: (5-1)
 - During this school year (2015–16), which of the following sources of information on teacher performance does your school use in teacher evaluations? (a) Classroom observations using a teacher professional practice rubric, conducted by the principal or other school administrator (b) Classroom observations using a teacher professional practice rubric, conducted by someone other than a school administrator (such as a peer or mentor teacher, instructional coach, central office staff member, or an observer from outside the school or district) (c) Teacher self-assessment (d) Portfolios or other artifacts of teacher professional practice (e) Assessments by a peer or mentor teacher that are not based on a teacher professional practice rubric (f) Student work samples (g) Student surveys or other student feedback (h) Parent surveys or other parent feedback (5-2a–5-2h)
 - Will the performance evaluation results for teachers for this school year (2015–16) be used to inform any of the following decisions about teacher professional development? (a) Feedback given to teachers on their professional practice (b) Planning professional development for individual teachers (c) Development of performance improvement plans for low-performing teachers (d) Setting goals with teachers for student achievement growth for the next school year (e) Identifying low-performing teachers for coaching, mentoring, or peer assistance (5-3a–5-3e)

- Will the performance evaluation results for teachers for this school year (2015–16) be used to inform any of the following decisions about teacher career advancement? (a) Recognizing high-performing teachers (b) Determining annual salary increases (c) Determining bonuses or performance-based compensation other than salary increases (d) Granting tenure or similar job protection (e) Career advancement opportunities, such as teacher leadership roles (5-4a–5-4e)
- Will the performance evaluation results for teachers for this school year (2015–16) be used to inform any of the following decisions about low-performing teachers? (a) Loss of tenure or similar job protection (b) Sequencing potential layoffs to reduce staff (c) Dismissing or terminating employment for cause (5-5a–5-5c)

School Questionnaire

School Questionnaire—2011–12 SASS Questions Not Included in the 2015–16 NTPS

- GENERAL INFORMATION ABOUT THIS SCHOOL
 - Around the first of October, how many MIGRANT students in grades K–12 and comparable ungraded levels were enrolled in this school? (3)
 - Around the first of October, how many MALE students in grades K–12 and comparable ungraded levels were enrolled in this school? (4)
 - Around the first of October, how many students enrolled in grades K–12 and comparable ungraded levels were – (a) Hispanic or Latino, regardless of race? (b) White, not of Hispanic or Latino origin? (c) Black or African American, not of Hispanic or Latino origin? (d) Asian, not of Hispanic or Latino origin? (e) Native Hawaiian or other Pacific Islander, not of Hispanic or Latino origin? (f) American Indian or Alaska Native, not of Hispanic or Latino origin? (g) Two or more races, not of Hispanic or Latino origin? (h) Total students (5a–5h)
 - Is this ENTIRE SCHOOL specifically for students who have been suspended or expelled, who have dropped out, or who have been referred for behavioral or adjustment problems? (7)
 - How long is the school DAY for students in this school? (9)
- ADMISSIONS AND PROGRAMS
 - Does this school use any special requirements when admitting students OTHER THAN proof of immunization, age, or residence? (14a)
 - Does this school use the following requirements when deciding whether to admit students? (1) Student scores on an admission test (2) Student scores on a standardized achievement test (3) Academic record (4) Special student needs (5) Special student aptitudes, skills, or talents (6) Personal Interview (7) Recommendations (8) Signed school-parent contract (14b1–14b8)
 - This school year, did any students enroll in this school as a result of a lottery draw? (15)
 - (a) Does this school have a magnet program? (b) Is this a school-wide magnet program in which all students in this school participate in the program? (16a, 16b)
 - Does this school offer the following programs? (a) Programs with special instructional approaches (b) Talented or gifted program or honors courses (c) A program in which at least half of the core subjects are taught in a foreign language (d) Advanced placement (AP) courses for college credit (e) International Baccalaureate (IB) (f) Distance Learning course(s) (17a–17f)
 - LAST summer (2011) or LAST school year (2010–11), were summer school activities or academic intersessions provided for students enrolled in this school who needed ACADEMIC ASSISTANCE? (19)
 - LAST summer (2011) or LAST school year (2010–11), were summer school activities or academic intersessions provided for students enrolled in this school who sought ACADEMIC ADVANCEMENT OR ENRICHMENT? (20)

- **STUDENTS AND CLASS ORGANIZATION**
 - THIS school year (2011–12), does this school use the following methods to organize most classes or most students? (a) Traditional grades or academic discipline-based departments (b) Grades subdivided into small groups such as “houses” or “families” (c) Student groups that remain two or more years with the same teacher (d) Multi age grouping (e) Block scheduling (21a–21e)
 - (a) Does this school use a year-round calendar to distribute school days across 12 months? (b) Do all students attend on the same cycle? (22a, 22b)
 - Does this school have students in one or more of grades 9–12? (23)
 - Are the following opportunities available for students in grades 9–12 in this school? (a) Dual or concurrent enrollment that offers both high school and college credit (1) Is this funded by the school or district? (b) Career and technical education courses (c) Work-based learning or internships outside of school, in which students earn COURSE CREDITS for supervised learning activities that occur in paid or unpaid workplace assignments (d) Specialized career academy (24a–24d)
 - (a) LAST school year (2010–11), were any students enrolled in 12th grade? (b) How many students were enrolled in 12th grade around October 1, 2010? (25a, 25b)
 - (a) LAST school year (2010–11), how many students graduated from the 12th grade with a diploma? (b) Of those who graduated with a diploma LAST school year (2010–11), approximately what percentage went to four-year colleges? (26a, 26b)
- **SPECIAL PROGRAMS AND SERVICES**
 - (a) Of the students enrolled in this school as of October 1, have any been identified as limited-English proficient, also known as English-language learners (ELLs)? (b) How many limited-English proficient students or English-language learners are enrolled in this school? (35a, 35b)
 - How are English-language learners taught English? Are any of them taught – (a) Using ESL, bilingual, or immersion techniques? (b) In regular English-speaking classrooms? (37a, 37b)
 - How are English-language learners taught subject-matter courses such as mathematics, science, and social studies? Are any of them taught – (a) In their native language? (b) Using ESL, bilingual, or immersion techniques? (c) In regular English-speaking classrooms? (38a–38c)
 - Does this school require limited-English proficient students or English-language learners (ELLs) to pass a test of English language proficiency to complete its limited-English proficient program? (39)
 - Are limited-English proficient students or English-language learners (ELLs) in this school administered assessments at least once per year to determine their level of English language proficiency? (40)
 - Does this school provide the following services for any PARENTS with limited-English skills? (a) Interpreters for meetings or parent-teacher conferences (b) Translations of printed materials, such as newsletters, school notices, or school signs (41a, 41b)
- **CHARTER SCHOOL INFORMATION**
 - (b) In what year did this school start providing instruction as a public CHARTER school? (48b)
 - Which of the following best describes the origin of this public charter school? (49)
 - Who granted the current charter? (50)
 - Does this charter school provide support for or monitor homeschooling or home-based learning? (52)

School Questionnaire—Questions Added to the 2015–16 NTPS

- GENERAL INFORMATION ABOUT THIS SCHOOL
 - (a) Does this school offer any courses that are taught entirely online? (b) Among all the courses you offer at this school, about how many of the courses are entirely online? (1-9a, 1-9b)
- SCHOOL STAFFING
 - Around the first of October, how many STAFF held full-time or part-time positions or assignments in this school in each of the following categories? (k) Data coaches or data coordinators (l) Technology specialists (m) Security guards or security personnel (not law enforcement) (n) School Resource Officers (include all career law enforcement officers with arrest authority, who have specialized training and are assigned to work in collaboration with school organizations) (o) Sworn law enforcement officers who are not School Resource Officers (2-3k–2-3o)
- COMMUNITY SERVICE REQUIREMENTS⁴
 - Does this DISTRICT grant high school diplomas? (3-1)
 - For high school graduates of the class of 2016, does this school or district have a community service requirement for a standard diploma? (3-2)
 - What is the minimum number of community service hours required of the high school graduates in the class of 2016? (3-3)

Teacher Questionnaire***Teacher Questionnaire—2011–12 SASS Questions Not Included in the 2015–16 NTPS***

- GENERAL INFORMATION
 - (a) Did you mark box 9 (Working in a position in the field of education, but not as a teacher) OR box 10 (Working in an occupation the field of education) in item 7? (b) What kind of work did you do, that is, what was your occupation? (c) What were your usual activities or duties at the job? (d) In addition to these usual activities, were you also teaching in one or more of grades K-12 last school year? (e) How would you classify that teaching position? (8a–8e)
 - Of the school years you have worked as an elementary- or secondary-level teacher in public, public charter or private schools, how many were – (a) In public and private schools during the SAME school year? (b) In public schools only? (1) How many years were FULL-TIME? (2) How many years were PART-TIME? (c) In private schools only? (1) How many years were FULL-TIME? (2) How many years were PART-TIME? (12a–12c)
- EDUCATION AND TRAINING
 - Did any of your coursework result in a concentration or specialization in READING? (29)
- CERTIFICATION
 - (a) Are you certified by the National Board for Professional Teaching Standards in at least one content area? (b) In what content area(s) do you hold a National Board for Professional Teaching Standards certificate? (c) Are you working toward certification from the National Board for Professional Teaching Standards? (39a–39c)

⁴ The questions that appear in the “Community Service Requirement” section of the NTPS School Questionnaire were previously included on the 2011–12 SASS School District Questionnaire (SASS-1A) and the 2011–12 SASS Public School Questionnaire (with District Items) (SASS-3Y).

- Have you taken the following tests? (1) The Praxis I Pre-Professional Skills Test (PPST): Reading (2) The Praxis I Pre-Professional Skills Test (PPST): Mathematics (3) The Praxis I Pre-Professional Skills Test (PPST): Writing (4) The Praxis II: Subject Assessment in a specific content area (5) The Praxis III: Teacher Performance Assessment in a specific content area (6) Another test of basic skills or subject knowledge, other than those listed above, required by your state or district (40.1–40.6)
- This school year, are you a Highly Qualified Teacher (HQT) according to your state's requirements? (42)
- PROFESSIONAL DEVELOPMENT
 - In the past 12 months, did you participate in any of the following professional development activities? (a) University course(s) related to teaching? (1) How many? (b) Observational visits to other schools? (1) How many? (c) Workshops, conferences, or training sessions in which you were a presenter? (1) How many? (d) Other workshops, conferences, or training sessions in which you were NOT a presenter? (1) How many? (43a–43d)
 - (a) In the past 12 months, have you participated in any professional development activities specific to and concentrating on the content of the subject(s) you teach? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (44a–44c)
 - (a) In the past 12 months, have you participated in any professional development activities that focused on the uses of computers for instruction? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (45a–45c)
 - (a) In the past 12 months, have you participated in any professional development activities that focused on reading instruction? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (46a–46c)
 - (a) In the past 12 months, have you participated in any professional development activities that focused on student discipline and management in the classroom? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (47a–47c)
 - (a) In the past 12 months, have you participated in any professional development on how to teach students with disabilities? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (48a–48c)
 - (a) In the past 12 months, have you participated in any professional development on how to teach limited-English proficient students or English-language learners (ELLs)? (b) In the past 12 months, how many hours did you spend on these activities? (c) Overall, how useful were these activities to you? (49a–49c)
 - In the past 12 months, have you participated in any professional development activities that focused on other topics not included in items 43–49? (50)
 - As a result of completing these professional development activities, did you receive credits toward re-certification or advanced certification in your main teaching assignment or other teaching field(s)? (51)
 - For the professional development in which you participated in the past 12 months, did you receive the following types of support? (a) Release time from teaching (i.e., your regular teaching responsibilities were temporarily assigned to someone else) (b) Scheduled time in the contract year for professional development (c) Stipend for professional development activities that took place outside regular work hours (d) Full or partial reimbursement of college tuition (e) Reimbursement for conference or workshop fees (f) Reimbursement for travel and/or daily expenses (52a–52f)
 - In the past 12 months, did you do any of the following? (a) Engage in individual or collaborative research on a topic of interest to you professionally (b) Participate in regularly

scheduled collaboration with other teachers on issues of instruction (c) Observe, or be observed by, other teachers in your classroom (for at least 10 minutes) (53a–53c)

- **WORKING CONDITIONS**
 - (a) How often are you INFORMALLY evaluated? (b) How often are you rated in a FORMAL evaluation? (59a, 59b)
 - (a) Were you, or are you going to be, rated in a FORMAL evaluation this school year? (b) Are student test score outcomes or test score growth included as an evaluation criterion in your FORMAL evaluation this school year? (60a, 60b)
- **SCHOOL CLIMATE AND TEACHER ATTITUDES**
 - If you could go back to your college days and start over again, would you become a teacher or not? (66a)
- **GENERAL EMPLOYMENT AND BACKGROUND INFORMATION**
 - Are you enrolled in a state- or federally-recognized tribe? (82)

Teacher Questionnaire—Questions Added to the 2015–16 NTPS

- **CLASS ORGANIZATION**
 - (a) During any of your classes, do you have students use instructional software to learn some or all of their lessons? (b) Does any of the instructional software the students use AUTOMATICALLY ADJUST the level of instruction to an individual student's performance? (2-6a, 2-6b)
- **EDUCATION AND TRAINING**
 - Which of the following best describes your bachelor's degree? (3-1d)
 - Which of the following best describes your master's degree? (3-2d)
 - Did you take any of the courses you marked in 3-4 before your first year of teaching? (3-5)
 - BEFORE your first year of teaching, did you take any graduate or undergraduate courses which taught you — (a) Classroom management techniques? (b) Lessons planning? (c) How to assess learning? (d) How to use student performance data to inform instruction? (e) How to serve students from diverse economic backgrounds? (f) How to serve students with special needs? (g) How to teach students who are limited-English proficient (LEP) or English-language learners (ELLs)? (3-6a–3-6g)
 - In how many different classrooms did you student teach? (3-7b)
- **EARLY CAREER EXPERIENCES**
 - What was your MAIN activity the year before you began teaching at the K-12 or comparable ungraded level? (5-2)
 - (a) What kind of work did you do, that is, what was your occupation? (b) What were your most important activities or duties on that job? (c) How would you classify yourself on that job? (5-3a–5-3c)
 - In your FIRST year of teaching, how well prepared were you to — (i) Teach students who are limited-English proficient [LEP] or English-language learners [ELLs]? (j) Teach students with special needs? (5-4i, 5-4j)
 - Did you receive the following kinds of support during your FIRST year of teaching? (f) Observation and feedback on your teaching aimed at helping you develop and refine your teaching practice BEYOND any formal administrative observation and feedback you may have received (g) Release time to participate in support activities for new or beginning teachers (5-6f, 5-6g)

- Did your assigned master or mentor teacher provide the following types of support during your FIRST year of teaching? (a) Helped with paperwork or record keeping (b) Demonstrated lessons (c) Helped you prepare lessons that address learning standards (d) Helped you develop student assessment tools (5-8a–5-8d)
- GENERAL EMPLOYMENT AND BACKGROUND INFORMATION
 - (b) Are you currently living with a boyfriend/girlfriend or partner? (c) Are you currently living in a registered domestic partnership or civil union? (8-12b, 8-12c)

Methodological and Procedural Changes

The 2015–16 NTPS used a similar methodology as the 2011–12 SASS—a mail-based survey with telephone and field follow-up. During telephone follow-up, interviewers called schools with one or more outstanding questionnaires to remind staff to complete and return them. During field follow-up, local Census Bureau field representatives contacted schools via telephone or personal visits.

Several changes were implemented to improve the efficiency of the data collection methodology. These changes included a return to collecting the Teacher Listing Form (TLF) from schools, rather than districts, augmented by the use of publicly available teacher lists for nonresponding schools; an early field follow-up operation for priority schools; use of e-mail to invite teachers to complete their Teacher Questionnaire online; and the beginning of data collection at an earlier date. These changes are discussed in more detail in the individual sections below.

Teacher Listing Form

The TLF collects the name and selected information for every eligible teacher in NTPS sampled schools. In the 2011–12 SASS, telephone interviewers called public school districts prior to data collection to ask whether the district would be willing and able to provide electronic lists of teachers for their selected schools at the start of data collection. Districts that indicated that they could provide an electronic list of teachers were sent the initial request for the teacher information in the fall. A paper TLF was mailed to schools in nonresponding districts in late November.

In the 2015–16 NTPS, TLFs were requested only from schools, rather than a combination of schools and school districts. The majority of schools received a paper TLF to complete; however, an experimental sample received a request to provide an electronic list of teachers via the NTPS Respondent Status Center.⁵

In addition, the Census Bureau purchased publicly available teacher lists for schools sampled for the 2015–16 NTPS. Teacher lists were available for approximately 83 percent of sampled schools. The teacher lists included each teacher’s name, e-mail address, and subject matter taught. Census Bureau staff conducted web research of school and district websites to supplement the purchased teacher lists. These teacher lists were used as the teacher sampling frame for schools that did not complete their TLF.

In addition to the methodological change described above regarding how the teacher lists were collected, two changes were made in the information requested on the TLF. The 2011–12 SASS TLF asked for each teacher’s years of teaching experience, with response options of 1 year, 2 to 3 years, 4 to 19 years, and 20

⁵ The Respondent Status Center (previously called the Control Center in the 2011–12 SASS) served several functions. It contained the Screener interview, which verified the school’s eligibility for the survey and established a survey coordinator. Survey coordinators functioned as the main contact for all survey operations within the school. The Respondent Status Center allowed the survey coordinator or school principal to complete the TLF electronically via an Excel template or manual entry directly into the website. It also included a table displaying the status of each questionnaire assigned to the school and allowed the respondent to request a replacement questionnaire for any questionnaire that was lost or damaged.

or more years. This item was included so that beginning and early career teachers could be oversampled to ensure that there would be enough of these teachers in both the 2011–12 SASS and the 2012–13 Teacher Follow-up Survey. This item was not included on the 2015–16 NTPS TLF. Additionally, an e-mail address field was added to the TLF so that teachers could be contacted via e-mail. For more information on teacher sampling, see chapter 4.

Early Field Follow-up Operation for Priority Schools

In the 2011–12 SASS, schools were contacted by mail and telephone follow-up before being contacted in an in-person field follow-up operation, which began in late March. Due to the timing of the field follow-up operation, TLFs were collected through early April. Teachers sampled from TLFs collected during the field follow-up operation did not have a sufficient amount of time to respond to the survey, since the data collection period for SASS is limited to the school year.

For the 2015–16 NTPS, NCES and the Census Bureau sought to reduce the number of contacts needed to obtain the TLF. The Census Bureau developed a propensity model using 2011–12 SASS response data to identify schools with characteristics that correlate with a low propensity to respond and that have a significant impact on weighting. This model was used to assign priority status to a subsample of 2015–16 NTPS schools. A field follow-up operation was conducted in the fall for schools identified as high-priority schools under this model. Schools without a survey coordinator were also included in the field follow-up operation because telephone follow-up is less effective for these schools. The primary purpose of the operation was to collect the TLF, though field representatives also followed up on the School and Principal Questionnaires.

Use of E-Mail for Internet-Based Teacher Questionnaire Invitations

The Teacher Questionnaire was primarily internet based for the 2011–12 SASS. However, invitations to complete the internet-based questionnaire were sent only by mail. Sampled teachers for whom we received a valid e-mail address received an invitation to complete the internet-based Teacher Questionnaire by both mail and e-mail at the time of the first and second teacher mailouts. Sampled teachers without a valid e-mail address received a paper Teacher Questionnaire in lieu of an invitation to complete the survey online. All teachers received a paper Teacher Questionnaire in their third and fourth mailouts.

The vast majority of the teachers sampled for the survey (91.5 percent) had a valid e-mail address and thus received an invitation to complete the internet-based questionnaire. Teachers in the internet treatment group had a final response rate of 71.7 percent, with approximately 53 percent of teachers completing the questionnaire online.

Chapter 5. Data Collection, provides additional details on the methodology for the 2015–16 NTPS, as well as a brief evaluation of the methodology employed.

Earlier Start to the Data Collection Schedule

For the 2011–12 SASS, data collection for the school-level questionnaires began on October 11, 2011. The data collection for the 2015–16 NTPS was originally scheduled to begin on August 24, 2015, but was postponed until September 4, 2015, due to a delay in receiving the commercially printed TLF, Principal Questionnaires, and School Questionnaires. The NTPS data collection was planned to begin as early in the school year as possible to allow time to conduct the fall field follow-up operation for priority schools prior to the winter holiday break. See chapter 5 for a detailed description of the data collection schedule and methodology.

Addition of Extant Data to the 2015–16 NTPS

For the 2015–16 cycle of NTPS, additional data from three administrative NCES data collections—Civil Rights Data Collection (CRDC),⁶ *EDFacts*,⁷ and CCD⁸—were incorporated into the final NTPS data products. These outside data sources are referred to collectively as “extant data.” The main purpose of including the extant data on the final data files was to enhance the utility of NTPS data while reducing the burden on school staff.

For additional information about the addition of extant data to the final 2015–16 NTPS data files and products, see chapter 7 and “Appendix L. Description of Frame, Created, and Derived Variables.”

⁶ CRDC has been conducted on behalf of the U.S. Department of Education since 1968. As the name indicates, a major function of CRDC is to provide data on vital education and civil rights issues for American public schools. For NTPS, six variables were added from the 2013–14 CRDC. These variables provided information pertaining to alternative schools, magnet programs, gifted/talented programs, and Advanced Placement (AP) or International Baccalaureate (IB) participation. For more information, visit <https://www2.ed.gov/about/offices/list/ocr/data.html?src=rt>.

⁷ *EDFacts* is an initiative put forth by the U.S. Department of Education that seeks to merge performance data from state education agencies with other sources such as financial grant information. Having access to the state-level school and district data on a national level not only reduces respondent burden but also allows these open, robust data sources to be placed at the forefront for any educational policymaking whether that be at the federal, state, or local level. One major area *EDFacts* specializes in is graduation rates across different demographic characteristics such as race, ethnicity, socioeconomic status, and limited English proficiency. Overall rates as well as the cohort sizes were copied from the 2014–15 *EDFacts* to NTPS. For more information, visit <https://www2.ed.gov/about/inits/ed/edfacts/index.html>.

⁸ CCD is an annual set of five surveys distributed to state and local agencies that in turn collect data from approximately 100,000 schools and 18,000 school districts. CCD has been utilized in the past on SASS administrations, and this survey cycle was no different. While CCD was previously used primarily as a source for the frame and occasionally as a reference on data processing, this cycle brought about using additional CCD variables as a replacement for a set of questions on NTPS. The 2015–16 NTPS was designed to omit asking for the counts of students by race on the school questionnaire, which had been on previous SASS cycles, because these data exist on CCD. Comprehensive male, female, prekindergarten, and race counts were added from the 2014–15 CCD to NTPS. This set of variables was slightly different in that, instead of a direct copy with minimal programming, additional variables were created using the aforementioned CCD variables. The end result on the NTPS final files was variables that estimated the percentage of students at a particular school that were male, female, or of a particular race or ethnicity. For more information, visit <https://nces.ed.gov/ccd/aboutCCD.asp>.

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Chapter 3. Preparation for the 2015–16 NTPS

The NCES and the Census Bureau have worked throughout the redesign process to improve the questionnaire content and procedures for the NTPS. Prior to the administration of the 2015–16 NTPS, the data collection methodology and survey content were examined, tested, and revised to improve the quality of the data. Exhibit 3 summarizes the research conducted. The full report on the NTPS Pilot Test, with the methodology and detailed findings, is included as “Appendix D. Summary of the 2014–15 NTPS Pilot Test Findings and Recommendations for the 2015–16 NTPS.”

Exhibit 3. Summary of research conducted for the 2015–16 NTPS

Title	Methodology	Study period	Respondent(s)	Key areas of focus
Summary of the 2014–15 Pilot Test Findings and Recommendations for the 2015–16 NTPS	Pilot test	10/2014–5/2015	Principal, school staff, and teacher	Methodology
Analysis of Vendor School and Teacher Frames for the 2014–15 National Teacher and Principal Survey Field Test	Analysis	2013	N/A	Methodology
An Evaluation of Commercial Teacher Lists in the 2014–15 NTPS Pilot Test	Analysis	2014–15	N/A	Methodology

Research on NTPS Methodology

NTPS Pilot Test

As discussed in chapter 1, the Schools and Staffing Survey (SASS) underwent a redesign. This redesigned survey was named the National Teacher and Principal Survey (NTPS). NCES and the Census Bureau worked together to revise the content and improve the data collection methodology. The methodology included elements from past SASS data collections as well as new or modified methodologies based on results of previous administrations of SASS and knowledge of current survey practices. Several key methodological questions needed to be answered before the 2015–16 collection. To address these questions, a pilot test was conducted during the 2014–15 school year to optimize the design of the 2015–16 NTPS. This pilot test included several experiments related to data collection strategies. The results were used to inform the methods employed for the 2015–16 NTPS collection.

The NTPS Pilot Test served as a platform to conduct three experiments:

- *School-Level Questionnaire Mode Experiment*—Determine whether paper questionnaires or internet survey instruments (i.e., mail-only versus internet sequential modes) are the more effective mode for collecting the teacher list, School Questionnaire, and Principal Questionnaire data from schools and principals;
- *Teacher Listing Form (TLF) E-Mail Experiment*—Assess the feasibility and quality of collecting teacher e-mail addresses from schools on the TLF; and
- *Teacher Invitation Mode Experiment*—Identify the most effective method for inviting teachers to complete the Teacher Questionnaire: e-mailed and mailed paper invitations to the internet instrument, a mailed paper invitation to the internet instrument, or a mailed paper questionnaire.

The NTPS Pilot Test also sought to meet the following nonexperimental objectives:

- Test proposed modifications made to the TLF Data Collection Operation;
- Monitor data collection strategies to make a determination about the methods that should be employed for future NTPS production cycles; and
- Evaluate the feasibility and reliability of vendor-purchased teacher lists to supplement or replace school-collected TLFs.

A summary of the research and findings follows.

Pilot Test Sample

The 2011–12 SASS sampling frame was augmented with updated information from the 2011–12 Common Core of Data (CCD). The Census Bureau sampled 8,954 schools and randomly assigned them to four distinct treatment groups, as presented in exhibit 4.

Exhibit 4. School sample experimental treatment groups: 2014–15 NTPS Pilot Test

Teacher Listing Form (TLF) E-Mail Experiment treatment		
School-Level Questionnaire Mode treatment	Panel 1	Panel 3
	3,256 schools	1,221 schools
	TLF with e-mail address field	TLF without e-mail address field
	Internet questionnaires	Internet questionnaires
	Panel 2	Panel 4
	3,256 schools	1,221 schools
	TLF with e-mail address field	TLF without e-mail address field
	Paper questionnaires	Paper questionnaires

The public school teacher frame comprised the teachers listed on the completed TLFs. Sampling was done on a flow basis as TLFs were received and processed. The final teacher sample size was 23,171 teachers. Teachers were assigned to one of three treatment groups for the Teacher Invitation Mode Experiment. Treatment groups were assigned at the school level; therefore, all teachers within a school received the same treatment. The teacher treatment groups were as follows:

- Treatment A—Mailed and e-mailed internet invitations, 10,698 teachers in 2,108 schools;
- Treatment B—Mailed internet invitation, 6,299 teachers in 1,240 schools; and
- Treatment C—Paper questionnaire, 6,174 teachers in 1,236 schools.

Pilot Test Methodology for School-Level Questionnaires and the TLF

Prior to the initial mailout, Census Bureau staff submitted applications to school districts that required approval to conduct research in their schools. The pilot test utilized a mail-based survey approach with telephone and in-person follow-up. The first school package was mailed on October 1, 2014.

Schools in the internet questionnaire treatment group received a package containing a letter, instructions for completing each questionnaire online, and a TLF reference card. The letter introduced the survey, provided login credentials for accessing the NTPS Respondent Status Center,⁹ and provided answers to frequently asked questions. The TLF instructions explained the purpose of the TLF, mentioned the TLF reference card, provided the URL and login credentials, and gave step-by-step instructions for providing teacher information. The TLF reference card provided details on the type of information requested and

⁹ The NTPS Respondent Status Center is an internet application that the Census Bureau designed to serve many functions for sampled schools and telephone interviewers. School respondents were able to upload their teacher list or enter teacher information manually, view the status of questionnaires, and request replacement questionnaires.

instructions on whom to include and exclude from the list. There were two versions of the TLF instructions and the reference card: one that referenced providing each teacher's e-mail address and one that did not. The Principal Questionnaire and School Questionnaire instructions indicated the appropriate respondent for the questionnaire and provided the URL and login credentials.

Schools in the paper treatment group received a package containing a letter and the paper TLF, the Principal Questionnaire, the School Questionnaire, and three return envelopes. There were two versions of the TLF: one that included a field for each teacher's e-mail address and one that did not request e-mail addresses.

Schools were mailed a second package on October 14, 2014. Schools in the internet questionnaire treatment group received a reminder letter and replacement instructions for completing each questionnaire online. A second copy of the TLF reference card was also included. Schools in the paper questionnaire treatment group received a reminder letter, replacement paper questionnaires, and return envelopes.

Schools were mailed a third package on October 24, 2014. Schools in the internet questionnaire treatment group received a second reminder letter and replacement instructions for completing each questionnaire online. Another copy of the TLF reference card was also included. Schools in the paper questionnaire treatment group received a second reminder letter, replacement paper questionnaires, and return envelopes.

Schools were mailed a fourth package on November 3, 2014. Schools in the internet questionnaire treatment group received a third reminder letter and their first paper copies of the TLF (with or without an e-mail address, as appropriate), the Principal Questionnaire, and the School Questionnaire, along with a return envelope for each. Schools in the paper questionnaire treatment group received a third reminder letter, replacement paper questionnaires, and return envelopes.

Following the fourth mailout, the TLF response rate was lower than expected. Therefore, the schools that had not provided their TLF were randomly split into two groups. Approximately half of the schools that had not provided their TLF were included in a telephone reminder operation that was conducted from November 12 to December 19, 2014. Interviewers reminded the respondent to complete their TLF either electronically or by returning the paper form. Interviewers were also able to complete the TLF with the respondent over the phone using the manual data entry option in the Respondent Status Center. If the Principal or School Questionnaire was also outstanding, interviewers reminded the respondent to complete and return those forms, as well. Clerical staff conducted a web research operation to attempt to compile a teacher list for the other half of nonresponding schools.

Table 2 presents the response rates for each school-level questionnaire by treatment group for key dates in data collection. Dates presented are based on the mailout and telephone operations discussed above.

Table 2. Unweighted response rates (in percentages) for school-level questionnaires on key dates, by treatment group: 2014–15 NTPS Pilot Test

Questionnaire treatment group	Response rates achieved by key dates				
	10/16/2014	10/28/2014	11/5/2014	12/24/2014	2/4/2015
Teacher Listing Form					
Paper treatment group, all	4.1	13.1	23.3	36.2	37.1
With e-mail address field	3.8	12.8	22.6	36.0	37.0
Without e-mail address field	5.0	13.9	25.0	36.7	37.6
Internet treatment group, all	1.9	4.6	7.0	20.8	21.6
With e-mail address field	1.7	4.5	6.9	20.2	21.1
Without e-mail address field	2.3	4.9	7.3	22.2	22.8
Principal Questionnaire					
Paper treatment group	5.1	15.1	25.7	37.1	37.8
Internet treatment group	3.8	8.1	11.3	25.4	26.2
School Questionnaire					
Paper treatment group	5.0	14.5	25.5	37.3	38.0
Internet treatment group	3.1	5.9	8.9	23.0	23.5

NOTE: The 12/24/2014 and 2/4/2015 TLF response rates exclude TLFs that were completed via clerical web research.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, National Teacher and Principal Survey (NTPS) Pilot Test, 2014–15 (previously unpublished tabulation).

Key Findings From the Pilot Test for School-Level Questionnaires and TLF

The pilot test sought to determine whether paper questionnaires or internet survey instruments are the more effective mode of collecting the school-level data. The response rate for the paper treatment group exceeded the response rate for the internet treatment group for all three questionnaire types throughout the entire data collection period (see table 2). At the end of data collection, the TLF had a self-reported response rate of 37.1 percent for the paper treatment groups and 21.6 percent for the internet treatment groups.¹⁰ The Principal Questionnaire had a response rate of 37.8 percent for the paper treatment group and 26.2 for the internet treatment group. The School Questionnaire had a response rate of 38.0 for the paper treatment group and 23.5 percent for the internet treatment group.

There are known factors that could have influenced these response rates. For example, survey coordinators, who have been shown to boost response rates during previous administrations of SASS, were not used during the pilot test data collection, which could have had a negative impact on the response rates in general.

In addition, there were known problems with the contact materials for the internet treatment groups, which may have significantly impacted the response rates for the internet treatment panels. These problems were largely related to the structure, content, and envelope size of the mailed packages to the internet groups.

The internet treatment groups received a letter-sized envelope containing a 5-page, trifolded letter, which included a cover letter for the principal; frequently asked questions; and three separate sheets of paper, which included the login credentials for each school-level questionnaire instrument (TLF, School

¹⁰ The TLFs collected during the clerical operation were omitted from the response rates reported in the experiment results. The final response rates of the internet and paper treatment groups at the end of TLF data collection, which included the TLFs collected during the clerical operation, were 46.9 percent and 56.3 percent, respectively.

Questionnaire, and Principal Questionnaire). In contrast, the paper treatment groups received their forms in a large, 8-1/2 x 11-inch envelope. The paper treatment groups' task was likely perceived by respondents as more straightforward than that for the internet treatment groups. In addition, their survey invitation package was less likely to have been overlooked by sampled schools.

Due to the low response rates for the internet treatment group, it was determined that the 2015–16 NTPS should be primarily paper based. However, because there are known benefits of administering questionnaires using internet instruments, such as cost savings and better quality survey data through the use of automated edits, collecting NTPS through the use of internet survey instruments should be explored further during the 2015–16 NTPS.

The second experimental objective of the pilot test was to assess the feasibility of collecting teacher e-mail addresses on the TLF. The TLF response rate for schools with the e-mail address field was slightly lower than the TLF response rate for schools without the e-mail address field. At the end of data collection, TLFs without the e-mail address field had a self-reported response rate of 30.2 percent while the group with the e-mail address field had a self-reported response rate of 29.0 percent. Because the difference in the response rate was minor and there is an advantage of having teacher e-mail addresses for Teacher Questionnaire data collection, it was decided that the 2015–16 NTPS should request teachers' e-mail addresses on the TLF.

Pilot Test Methodology for Teacher Questionnaires

The National Processing Center (NPC) in Jeffersonville, Indiana, mailed the initial teacher packages on a flow basis as teachers were sampled from the teacher lists. Initial packages were generally mailed on Fridays, from November 7, 2014, through February 6, 2015. There were two versions of the initial teacher package: the internet invitation package and the paper questionnaire package. Teachers in the internet invitation treatment groups received a letter inviting them to complete the Teacher Questionnaire over the Internet. There were two versions of the letter: the letter to teachers in the mailed and e-mailed internet invitation treatment group referenced the e-mails containing the survey's URL and their login credentials that were sent to the teachers around the same date. The letter to teachers in the mailed internet invitation treatment group did not reference an e-mail. Teachers in the paper questionnaire treatment group received a letter introducing the survey, a paper Teacher Questionnaire, and a return envelope.

NPC mailed the second teacher packages on a flow basis approximately 2 weeks after the initial package. The second teacher packages were mailed from November 21, 2014, through February 20, 2015. Teachers in the internet invitation treatment groups received a reminder letter to complete their survey over the Internet. The letter to teachers in the mailed and e-mailed internet invitation treatment group referenced the reminder e-mail that was sent to the teachers around the same date. Teachers in the paper questionnaire treatment group received a reminder letter, a second paper Teacher Questionnaire, and a second return envelope.

NPC mailed the third teacher packages on a flow basis approximately 2 weeks after the second package. The third teacher packages were mailed from December 5, 2014, through March 6, 2015. Teachers in the internet invitation treatment groups received a second reminder letter to complete their survey over the Internet. The letter to teachers in the mailed and e-mailed internet invitation treatment group referenced the reminder e-mail that was sent to the teachers around the same date. Teachers in the paper questionnaire treatment group received a reminder letter, a third paper Teacher Questionnaire, and a third return envelope.

NPC mailed the fourth teacher packages on a flow basis approximately 2 weeks after the third package. The fourth teacher packages were mailed from December 19, 2014, through March 20, 2015. All teachers received a reminder letter and a paper Teacher Questionnaire.

The response rates for the Teacher Questionnaire by treatment group for various dates in data collection are reported in table 3. Because teachers were sampled on a flow basis, the response rates for the Teacher Questionnaire were calculated based on the number of teachers who had been sampled by each date.

Table 3. Unweighted response rates (in percentages) for Teacher Questionnaires on various dates, by treatment group: 2014–15 NTPS Pilot Test

Teacher Questionnaire treatment group	Response rates achieved by various dates				
	12/2/2014	1/7/2015	2/4/2015	3/4/2015	4/9/2015
Mailed and e-mailed internet invitation	4.8	11.9	24.6	32.9	35.6
Mailed internet invitation	3.5	8.7	19.4	26.7	29.4
Paper questionnaire	4.0	9.7	23.8	32.7	35.7

NOTE: The response rates for the Teacher Questionnaire were calculated based on the number of teachers who had been sampled by each date. Response rates beginning on 2/4/15 reflect the response rate for all sampled teachers.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, National Teacher and Principal Survey (NTPS) Pilot Test, 2014–15 (previously unpublished tabulation).

Key Findings From the Pilot Test for Teacher Questionnaires

The pilot test sought to identify the more effective method to invite teachers to complete the Teacher Questionnaire. The response rate for teachers in the group receiving an internet invitation by mail and e-mail exceeded that of the teachers who received an internet invitation by mail only (see table 3). At the end of data collection, the mailed and e-mailed internet invitation teacher treatment group had a response rate of 35.6 percent while the mail-only internet invitation teacher treatment group had a response rate of 29.4 percent. The paper questionnaire teacher treatment group had a response rate of 35.7 percent. Because of the benefits of administering questionnaires using internet instruments and the near-identical response rates of the paper group and the optimal internet response option, the Census Bureau recommended using a combination of e-mailed and mailed internet invitations for teachers with an available e-mail address. NCES accepted this recommendation. Teachers with an available e-mail address were contacted using a combination of e-mailed and mailed paper internet invitation letters to complete the Teacher Questionnaire for the 2015–16 NTPS. Teachers without an available e-mail address were mailed a paper Teacher Questionnaire for the 2015–16 NTPS.

Evaluation of Commercial Teacher Lists

During the process of redesigning SASS, which became NTPS, the Census Bureau looked into alternative methods of creating the teacher sampling frame. Traditionally, the SASS teacher sampling frame comprised TLF data. The TLF was mailed to sampled schools with the other school-level questionnaires. School staff were asked to list each teacher's name along with other information used for sampling. Nonresponding schools were contacted by telephone and personal visits to obtain the TLF. Given the redesign of the survey and increasing costs of teacher list collection operations, the Census Bureau and NCES sought to find an alternative method of obtaining a high-quality teacher sampling frame.

Commercial teacher lists were proposed as a means to replace or supplement the TLF. The Census Bureau analyzed teacher lists purchased from vendors in a two-part study. These studies are summarized in the following sections.

Analysis of Vendor School and Teacher Frames Using 2011–12 SASS Data

The initial study sought to determine the viability of using teacher lists purchased from a vendor as an alternative to, or enhancement of, the traditional TLF, using the 2011–12 SASS data. The Census Bureau

purchased school and teacher lists covering the 2011–12 school year for both public and private schools from three different vendors. These lists were composed of every school in the 50 U.S. states and the District of Columbia as of the 2011–12 school year. The vendors provided school lists at the building level with each record representing a unique address. The following variables were requested and provided on the school lists for both public and private schools: school name, mailing address, physical address, phone number, NCES ID, public/private school status, K–12 enrollment, full-time-equivalent (FTE) teacher count, grades offered, number of teachers, and urbanicity. Additional variables were requested and provided for public or private schools. The teacher lists were composed of every teacher in the 50 U.S. states and the District of Columbia as of the 2011–12 school year. The Census Bureau requested the following variables: teacher name, school NCES ID, subject matter taught, full- or part-time status, and years of teaching experience. All three vendors were able to provide teacher name, school NCES ID, and a text description of subject matter taught. None of the vendors provided full- or part-time status or an acceptable teaching experience variable.

The vendor-provided school lists were compared with the 2011–12 SASS school universe file, which is a modified version of the 2009–10 CCD and 2009–10 Private School Survey (PSS). The vendor-provided teacher lists were compared with the 2011–12 SASS teacher sampling frame, which was built using teacher lists provided by sampled schools or their associated school districts.

Analysis of School Coverage

The initial assessment of the vendor lists focused on the school coverage. Schools were matched on the NCES ID. Schools on the vendor-provided lists that were missing the NCES ID were dropped from the analysis. The coverage rate was calculated by dividing the number of schools contained in both the vendor file and the school universe file by the number of schools in the school universe file. Table 4 contains the overall coverage rate of each vendor file for both public and private schools. The table shows that the vendors have a higher coverage rate in public schools than in private schools; therefore, the majority of the subsequent analyses focused on public schools.

Table 4. School coverage rate, by control of school and vendor

Control of school	Coverage rate		
	Vendor A	Vendor B	Vendor C
Public	85.43	86.41	92.25
Private	64.56 ¹	66.46	60.08

¹ Vendor A did not provide the NCES ID for private schools. This is an estimate based on address-level matching.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Analysis of Vendor School and Teacher Frames for the 2014–15 National Teacher and Principal Survey Field Test (previously unpublished tabulation).

In addition to the overall coverage rate, staff looked at the coverage rate by charter status, school type, and state. The vendor-provided files had higher coverage rates for regular, traditional public schools than for charter, special education, vocational, and other/alternative schools. There was substantial variation in the public school coverage rate within each vendor across states; however, regular, noncharter public schools in most states had a greater than 90 percent coverage rate on all three vendor lists. Staff also looked at the rate of ineligible schools included on the vendor-provided lists. The school ineligible rate refers to the proportion of schools on each vendor-provided school file that were not included on the school universe file. The ineligible rates for public schools ranged from approximately 3 to 6 percent by vendor.

Analysis of Teacher Coverage

The vendor-provided teacher lists were matched to the 2011–12 SASS teacher sampling frame. Teachers were matched within schools in four passes: by name within schools matched on NCES ID; by first and last name flipped within schools matched on NCES ID; by name within address; and, finally, by first and last name flipped within address. Teachers were only matched within schools. If one of the vendor lists contained a teacher’s name at a different school, this teacher was not considered a match.

The vendor files were matched to the SASS teacher universe for all schools included in the SASS teacher universe. Teachers in schools that were not contained on the vendor file were included in the teacher matching.

Table 5 contains the overall teacher coverage rate of each vendor file for both public and private schools. The coverage rate was calculated by dividing the number of teachers contained in both the vendor file and the SASS teacher sampling frame by the number of teachers in the SASS teacher sampling frame. As with schools, the vendors have a higher teacher coverage rate in public schools than in private schools; therefore, the majority of the subsequent analyses focused on public schools.

Table 5. Teacher coverage rate, by control of school and vendor

Control of school	Coverage rate		
	Vendor A	Vendor B	Vendor C
Public	70.60	58.37	55.80
Private	†	34.56	22.87

† Not applicable. Vendor A did not provide the NCES ID for private schools.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Analysis of Vendor School and Teacher Frames for the 2014–15 National Teacher and Principal Survey Field Test (previously unpublished tabulation).

In addition to the overall coverage rate, staff looked at the coverage rate by charter status, school type, locale, and state. As with schools, the vendor-provided teacher files had higher coverage rates for regular, traditional public schools than for charter, special education, vocational, and other/alternative schools. The coverage rates were generally higher in cities and suburbs than in rural areas. There was substantial variation in the public school teacher coverage rate within each vendor across states. Teachers with more teaching experience, as reported on the TLF, displayed higher coverage rates than less experienced teachers. Full-time teachers, as reported on the TLF, had higher coverage rates than part-time teachers.

Staff also calculated the rate of ineligible teachers included on the vendor-provided lists. The teacher ineligible rate refers to the proportion of teachers on each vendor-provided school file who are not on the SASS teacher sampling frame. There was considerable variation of teacher ineligible rates within public, noncharter schools by vendor. In over 95 percent of the schools on all three vendor files, at least 10 percent of the listed teachers were ineligible. In one vendor file, over half of the teachers were ineligible in approximately 52 percent of the schools. The vendor files contained a higher total number of teachers than the SASS teacher sample file for many schools, which helps to explain the high ineligible rates. This may be due to the inclusion of school personnel who are not teachers and duplicate teachers on the vendor lists.

Recommendations

The Census Bureau recommended that CCD and PSS continue to be used as the basis for developing the school sample frame, given the low match rates for private, charter, and nonregular public schools. NCES accepted this recommendation, and the 2015–16 NTPS utilized CCD and PSS to develop the school sample frame. The Census Bureau recommended conducting further analysis of the teacher lists provided

by Vendor A during the 2014–15 NTPS Field Test. NCES accepted this recommendation, and further testing is described below.

Evaluation of Third-Party Teacher Lists in the 2014–15 NTPS Pilot Test

The second part of the study sought to determine the viability of vendor teacher lists as an alternative to, or enhancement of, the traditional TLF by comparing the vendor lists from the best performing vendor to the school-provided teacher lists in real time. The Census Bureau purchased teacher lists covering the schools sampled for the 2014–15 NTPS Pilot Test in August 2014. The Census Bureau provided the NCES ID for the sampled schools to the vendor and asked the vendor to provide a full teacher list for those schools that included the following variables: teacher name, school NCES ID, subject matter taught, full- or part-time status, years of teaching experience, and e-mail address. The vendor was not able to provide the full- or part-time status or years of teacher experience variables. Although the Census Bureau requested that only teachers be included on the list, the vendor included other school personnel, as well. The vendor provided both a categorization and a text description of subject matter taught; therefore, analyses were limited to records on the vendor list where “teacher” appears in the job description.

Analysis of School Coverage

As in the previous study, the initial assessment of the vendor lists focused on the school coverage. The vendor was asked to provide teacher lists for 8,954 schools. Table 6 summarizes the availability of data in the TLF and vendor files. The vendor was able to provide data for approximately 90 percent of the sampled schools.

Table 6. Data availability in vendor and TLF files

	N	Percent of all schools	Percent of TLF responder schools
TLF and vendor response status:			
TLF responder, vendor data available	2,432	27.16	93.03
TLF responder, vendor data unavailable	182	2.03	6.97
TLF clerical, ¹ vendor data available	1,912	21.35	†
TLF clerical, ¹ vendor data unavailable	61	0.68	†
TLF nonresponder, vendor data available	3,727	41.62	†
TLF nonresponder, vendor data unavailable	640	7.15	†
Total:			
All schools	8,954	100	†

† Not applicable.

¹ At the end of the mailout operations, half of the nonresponding schools were sent to a TLF telephone follow-up operation aimed at collecting teacher list data over the telephone, and the other half were sent to a clerical operation aimed at obtaining teacher lists from school and/or district websites.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, An Evaluation of Third-Party Teacher Lists in the 2014–15 NTPS Pilot Test (previously unpublished tabulation).

Analysis of Teacher Coverage

The vendor-provided teacher lists were assessed in terms of coverage rates and ineligible rates. The first assessment of coverage compared the number of teachers on the teacher sampling frame with the number of teachers on the vendor list. Table 7 presents average count differences between schools. Table 7 shows that the average teacher count difference is -2.80 teachers for traditional (school-reported) TLFs and 5.02 teachers for clerically researched TLFs.

Table 7. Average count differences between TLF and vendor files

	TLF-vendor average count difference ¹	TLF-vendor average absolute value of count difference ²	TLF-vendor percent count difference ³	TLF-vendor percent absolute value of count difference ⁴
Traditional TLF	-2.80	11.12	-0.25	5.94
Clerical	5.02	8.54	3.46	5.12

¹ The TLF-vendor count difference is equal to $(TLF\ Count - Vendor\ Count)$.

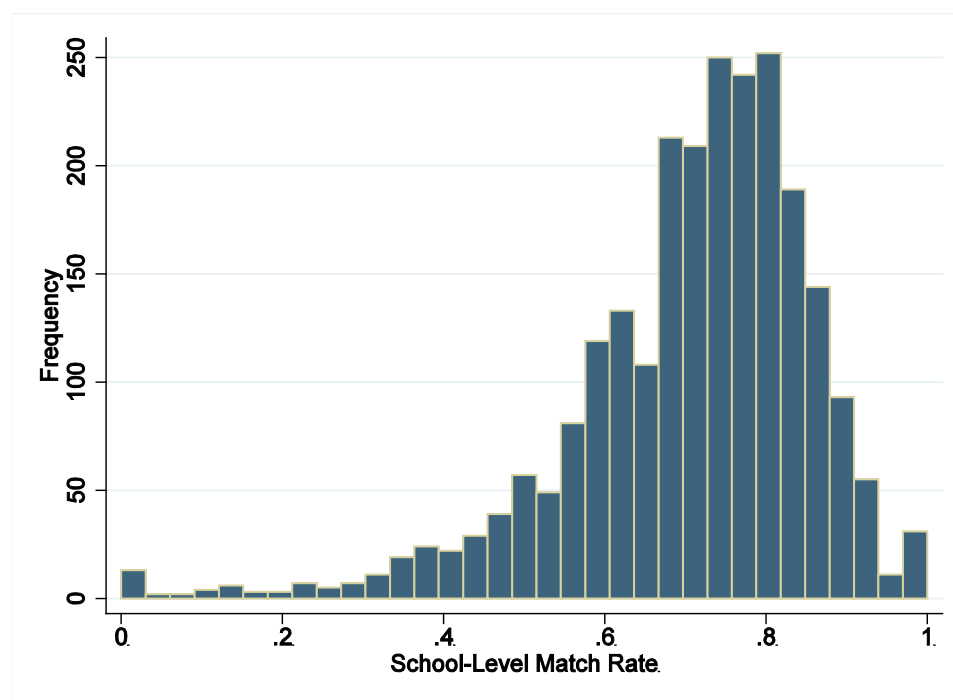
² The absolute value of the TLF-vendor count difference is equal to $|TLF\ Count - Vendor\ Count|$.

³ The TLF-vendor percent count difference is defined as $\frac{2*(TLF\ Count - Vendor\ Count)}{(TLF\ Count + Vendor\ Count)}$.

⁴ The TLF-vendor percent absolute value of count difference is defined as $|\frac{2*(TLF\ Count - Vendor\ Count)}{(TLF\ Count + Vendor\ Count)}|$.

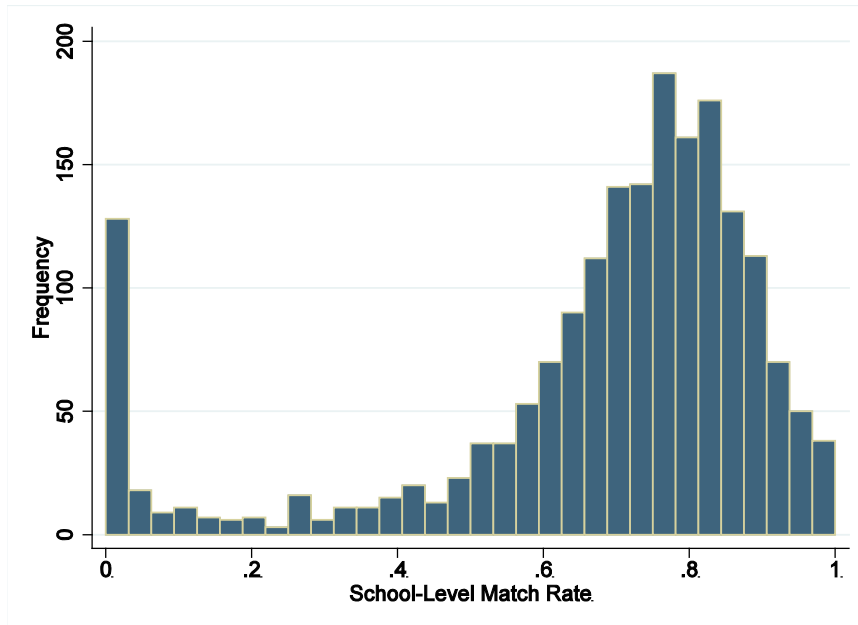
SOURCE: U.S. Department of Commerce, U.S. Census Bureau, An Evaluation of Third-Party Teacher Lists in the 2014–15 NTPS Pilot Test (previously unpublished tabulation).

Next, teacher names were matched between the teacher sampling frame and the vendor list. Match rates were defined as the fraction of teachers provided in a school's TLF who could be matched to the vendor file. Figure 1 displays the distributions of match rates across the 2,432 schools that responded to the TLF and were contained in the vendor data. The majority of schools have match rates of above 70 percent, with relatively few schools with match rates below 50 percent. Figure 2 displays the distributions of match rates across the 1,912 schools with TLFs obtained through clerical research and contained in the vendor data. The majority of schools have high match rates of over 70 percent.

Figure 1. Distribution of match rates across schools, traditional TLF

NOTE: N = 2,432.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, An Evaluation of Third-Party Teacher Lists in the 2014–15 NTPS Pilot Test (previously unpublished tabulation).

Figure 2. Distribution of match rates across schools, clerical operation

NOTE: N = 1,912.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, An Evaluation of Third-Party Teacher Lists in the 2014–15 NTPS Pilot Test (previously unpublished tabulation).

Match rates were also examined by the following teacher characteristics: teacher experience, full- or part-time status, and subject matter taught. Match rates were extremely low for first-year teachers (6.8 percent) and were considerably lower for part-time teachers than for full-time teachers (46.1 percent and 73.6 percent, respectively). There was relatively little variation in match rates across the majority of the subject groups.

Ineligible rates were also calculated. The ineligible rate represents the fraction of teachers on the vendor teacher list who cannot be matched to the teacher sampling frame for either a school-completed or clerical research TLF. The majority of schools have ineligible rates of below 30 percent, with relatively few schools with ineligible rates above 50 percent.

The Census Bureau initiated a telephone follow-up operation with 331 of the schools included on the teacher sampling frame to resolve differences between the teacher sampling frame and the vendor teacher list. The Census Bureau resolved the discrepancies between the lists for 217 schools. The results indicated that when there were differences between the teacher sampling frame and the vendor teacher list, the school-provided or clerically researched TLF was usually correct.

In addition to match rates and ineligible rates, the Census Bureau also examined the quality of the vendor-provided teacher e-mail addresses. The vendor list included e-mail addresses for approximately 83 percent of listed teachers. When e-mail addresses between the vendor list and the TLF were compared, they had an agreement rate of over 75 percent.

Recommendations

The vendor was able to provide teacher lists for over 90 percent of requested schools, and the vendor and TLF data had relatively high rates of agreement; therefore, the Census Bureau recommended that vendor data be used in the 2015–16 NTPS. However, it was recommended that the absence of the teacher experience and full- or part-time status variables and the low coverage of first-year teachers be considered

when determining how to incorporate the use of vendor teacher lists in the 2015–16 NTPS. Vendor data were used as a supplement to, rather than a replacement of, TLF data for the 2015–16 NTPS.

Chapter 2 provides details on the changes in the methodology in the transition from the 2011–12 SASS and the 2015–16 NTPS implementations. Chapter 5 provides details on the methodology for the 2015–16 NTPS as well as a brief evaluation of the methodology.

Research on NTPS Content

During the process of redesigning SASS to become NTPS, new items were proposed for the School Questionnaire, Principal Questionnaire, and Teacher Questionnaire. These items, as well as items that were problematic in past administrations of SASS, were tested with appropriate school personnel in order to gather feedback.

Cognitive Interviews—2014

NCES contracted with researchers from the nonpartisan and objective research organization NORC at the University of Chicago to conduct a series of cognitive interviews to test newly proposed questions, as well as some of the 2011–12 SASS questions, prior to the 2014–15 NTPS Pilot Test. The purpose of these interviews was to gather feedback on proposed and current questions for the School, Principal, and Teacher Questionnaires; report the findings; and make recommendations for revisions, if necessary, to the items.

Methods

Recruitment and interviewing took place from December 2013 through May 2014. Researchers completed interviews with principals and teachers. NORC recruited 35 respondents through personal connections. The remaining respondents were recruited via “cold-calling” schools directly and requesting interviews. Respondents were recruited from Washington, DC, and the following states: Indiana, Illinois, Maryland, and Virginia.

Researchers, with some assistance from NCES contractors and the Census Bureau, completed 124 cognitive interviews in two distinct sets. The first set of interviews included a subset of the items intended for the Principal Questionnaire and Teacher Questionnaire. This set of interviews was intended to gather in-depth information about how respondents understood and responded to critical survey items. Items were modified throughout the interviewing process, and the new items were then tested to confirm that the changes made to the item served the intended purpose. In the early stages of planning for the 2014–15 NTPS Pilot Test, NCES considered including a subset of the items traditionally collected on the SASS School Questionnaire on the Principal Questionnaire to reduce the number of questionnaires the school received. Therefore, the Principal Questionnaire used for the first set of cognitive interviews included items from the School Questionnaire. Prior to the second set of cognitive interviews, NCES decided to administer the Principal Questionnaire and School Questionnaire separately. During the second set of interviews, the Principal Questionnaire, School Questionnaire, and Teacher Questionnaire were tested in their entirety.

Cognitive interviews took place at the respondent’s school or at a quiet place, such as a coffee shop.

During the first set of interviews, respondents completed the questionnaire while thinking aloud. Interviewers probed, as needed, to gather additional information about the respondent’s thought process while answering the items. Interviewers also asked open-ended follow-up questions. A total of 97 respondents, comprising 43 principals and 54 teachers, participated in the first set of interviews.

During the second set of interviews, respondents began by completing the questionnaire independently. Upon completion of the questionnaire, interviewers conducted retrospective probing about items that appeared to cause respondents difficulty. A total of 27 respondents, comprising 9 principals, 10 teachers, and 8 other school staff members, participated in the second set of interviews.

The new items tested on the Teacher Questionnaire focused on technology, online classes, teacher preparation courses and orientation programs, and provision of extra services or support for students. The new items tested on the School Questionnaire focused on online courses, classroom technology, extra services or support provided for students, and the sharing of school space with other schools or organizations. The new items tested on the Principal Questionnaire focused on job satisfaction, school crime and safety, cyberbullying, student achievement growth, teacher evaluations, and teacher induction programs.

Key Findings From Testing Questionnaire Items

Teacher Questionnaire

The researchers recommended wording modifications, changes to the instructions, or changes on the words emphasized in the question text for several existing items. The new items tested and the findings are summarized below.

- In the series of items on teacher technology, the researchers tested items on the use of live video, prerecorded video, and instructional software as a primary and supplemental method of instruction. Respondents had a clear understanding of the terms used; however, none of the respondents indicated that they used the technologies as a primary method of instruction. The findings indicated that the questions should be modified to ask how frequently the technologies are used rather than whether they are a primary or supplemental means of instruction.
- The researchers tested two new items asking for the number of class periods taught online and how many of those classes were designed by staff within the respondent's school. These questions were clear to the respondents; thus the recommendation was to keep the items as is. A series of items on graduate and undergraduate courses that focused solely on teaching methods or teaching strategies was tested. During testing, the researchers proposed asking whether courses were taken before or after the respondent began teaching. Respondents had considerable difficulty with the items in this series. Findings concluded that several changes be made to the questionnaire items, including emphasizing the word "solely" in the question text, specifying not to include student teaching and professional development courses, asking about classes taken as part of a degree program and outside of a degree program separately, and asking whether any of the courses were taken before the respondent's first year of teaching. These revisions were implemented for the 2014–15 NTPS Pilot Test; however, the item was revised once again for the 2015–16 NTPS to combine the graduate and undergraduate courses regardless of whether they were taken for or outside of a degree program.
- The researchers tested new items in the series on practice or student teaching. Proposed items included whether the practice teaching was a full- or part-time commitment, whether it included opportunities to teach students with diverse economic backgrounds, and whether levels of responsibility increased over the course of the student teaching assignment. Researchers also recommended adding an item asking for the number of classrooms in which the respondent was a student teacher. These recommendations were implemented for the 2014–15 NTPS Pilot Test; however, the question was scaled back for the 2015–16 NTPS to only ask whether the teacher had a student teaching assignment and, if so, the number of classrooms and the total length of time of the student teaching assignment(s).
- The researchers tested an item asking about the teacher's main activity the year before he or she began teaching. The item was included on the 1993–94 SASS but removed from subsequent

administrations. No issues were found with the item, and it was therefore included on the NTPS questionnaire.

- A series of items on teacher preparation coursework were tested by researchers. Respondents were asked if they had participated in a teacher preparation program before they began teaching and, if so, whether it included doing coursework on classroom management techniques, planning lessons, assessing learning, using student performance data to inform instruction, serving students from diverse economic backgrounds, serving students with special needs, and teaching students who are limited-English proficient or English-language learners. Teachers did not consistently interpret the term “teacher preparation program”; therefore, the resulting recommendation was to ask whether the respondent took any undergraduate or graduate courses that taught them the various skills. The revised item was included on the NTPS questionnaire.
- The researchers tested two new items on how well prepared teachers were, before their first year of teaching, to teach students who are limited-English proficient or English-language learners and students with special needs. No issues were found with the proposed items, and they were included on the NTPS questionnaire.
- The researchers tested a new series of items on schoolwide or districtwide orientation for beginning teachers. Respondents were able to answer the items; however, the items were not included on the NTPS questionnaire after literature on teacher induction programs and first-year teacher support was reviewed.
- The researchers tested a series of items on the types of support provided by an assigned master or mentor teacher during the respondent’s first year of teaching, including providing encouragement, helping with paperwork, providing feedback based on observations, demonstrating lessons, sharing curriculum, sharing classroom management techniques, strategizing about how to accommodate students’ needs, and developing student assessment tools. Items were revised slightly during testing, and the results of the testing concluded that these items should be included on the NTPS questionnaire. A subset of the items tested were included on the questionnaire.
- The researchers tested a series of items on providing extra services or support for students, including helping students get access to health care; providing clothes, meals, transportation, or shelter; and helping students with social and emotional needs. These items were not included on the NTPS questionnaire.
- The researchers tested proposed revisions to the marital status item, including new follow-up questions on whether the respondent is living with a partner and, if so, whether the respondent is living in a registered domestic partnership or civil union. The proposed changes were implemented on the NTPS questionnaire.

School Questionnaire

The researchers recommended wording modifications or changes to the instructions for several existing items. The new items tested and the findings are summarized below.

- The researchers tested items on distance learning courses, including whether they are offered by the school and, if so, the types of courses offered and the percentage of students enrolled in them. These items were replaced by a series of items about online courses.
- The researchers tested a series of items about online courses, including whether the school offers courses that are taught entirely online, the percentage of the courses offered at the school that are taught entirely online, and whether the online course(s) are designed by school staff. The item asking for the percentage of the courses that are taught entirely online was revised to ask for the approximate percentage, with response categories of one or a few courses, some courses but less than half, about half, a majority, and all courses instead of percentage ranges; and the whether the course(s) are designed by school or district staff. The items were included on the NTPS School Questionnaire.

- A series of items on classroom technology was proposed. These items focused on the use of live video, prerecorded video, instructional software, and blended learning (a combination of self-paced instructional computer software with lessons in a physical classroom). The proposed items included subitems on whether the school offered any courses that used these methods of instruction and, if so, whether the method of instruction is a primary mode of instruction or used to supplement face-to-face instruction. Respondents did not have a clear understanding of blended learning. In addition, the respondents had difficulties with the follow-up questions on whether the video and instructional software are used as a primary mode or a supplement to face-to-face instruction. Therefore, the items on blended learning and the follow-up items on how the methods of instruction are used were omitted. The NTPS School Questionnaire included the items on whether the school offers any courses that use live video, prerecorded video, and instructional software.
- A series of items on providing extra services or support for students was proposed. These items included health care beyond what is provided by the school nurse, clothes, meals, and access to staff outside of regular school hours. Revisions were suggested for the proposed items on health care, clothes, and meals, and they were included on the NTPS School Questionnaire.
- The researchers tested a series of items on whether the school shares physical space with other organizations or companies. Respondents did not have difficulties with these items; however, they were not deemed by NCES as a high priority and were thus excluded from the NTPS School Questionnaire.

Principal Questionnaire

The researchers recommended wording modifications or changes to the instructions for several existing items. The new items tested and the findings are summarized below.

- The researchers tested a series of items on principal job satisfaction that were similar to the job satisfaction items on the NTPS Teacher Questionnaire. The respondents did not experience difficulty answering the items, and they were included on the NTPS Principal Questionnaire.
- A series of items on student achievement growth and teacher evaluations was tested. Items asked whether the following factors are used in teacher evaluations: student achievement growth on standardized assessments, classroom observation, teacher self-assessment, portfolios, peer or mentor teacher assessments, student work samples, student surveys, and parent surveys; and whether the performance evaluations will be used to make decisions about professional development, teacher career advancement, and low-performing teachers. After a series of revisions, these items were included on the NTPS Principal Questionnaire.
- The researchers tested an item asking whether beginning teachers are enrolled in a teacher induction program. An instruction was added to clarify who should be considered a beginning teacher, and the item was included on the NTPS Principal Questionnaire.

NCES used the feedback from the cognitive interviews to improve the NTPS questionnaires. Chapter 2 discusses the changes made to the 2011–12 SASS questionnaires for the 2015–16 NTPS. The NTPS questionnaires are available on the NCES website. “Appendix B. Questionnaire Availability Online, Downloadable PDF Files” provides the website and instructions for accessing electronic files of the final 2015–16 NTPS questionnaires.

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Chapter 4. NTPS Frame Creation and Sample Selection Procedures

This chapter discusses how the sampling frame was created and how cases were sampled for the 2015–16 National Teacher and Principal Survey (NTPS). The first section discusses the creation of the frame for traditional public and public charter schools, including schools deleted, added, and otherwise edited. Next, the public and public charter school sampling procedure is described. The final section discusses teacher sampling.

Traditional Public and Public Charter School Sampling Frame and Sample Selection

Traditional Public and Public Charter Frame Creation

The foundation for the 2015–16 NTPS traditional public and public charter school frame was the 2013–14 Common Core of Data (CCD) nonfiscal file. CCD is based on administrative data collected annually by the National Center for Education Statistics (NCES) from each state education agency and from the Department of Defense (DoD) and the Bureau of Indian Education (BIE). For the 2013–14 school year, state education agencies used their administrative record data to report information for 102,843 schools. NCES and the state education agencies worked cooperatively to ensure comparability between the elements reported. CCD is believed to be the most complete public school listing available. The frame includes regular and nonregular traditional public schools (special education, alternative, vocational, or technical) and public charter schools.

Due to the availability of the CCD files, the preliminary 2013–14 CCD file was used as the basis for the NTPS sampling frame rather than the final version. The respective NTPS and CCD processing schedules did not allow for subsequent updates to CCD to be incorporated into the NTPS sampling frame prior to sampling.

In NTPS, a school was defined as an institution or part of an institution that provides classroom 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. It was possible for two or more schools to share the same building. If these schools had different administrations (i.e., principals), then they were treated as different schools. This definition is unchanged from the Schools and Staffing Survey (SASS) conducted in 2011–12 and earlier years.

The NTPS definition of a school was generally similar to that used by CCD with some exceptions. Some examples of the differences between the NTPS and CCD definitions are presented below:

- Homebound school programs (i.e., students confined to home due to a long-term illness or condition) that are publicly supported were included in CCD but not NTPS.
- Schools overseas or in U.S. territories that are operated by DoD were included in CCD but not in NTPS.
- Multiple CCD schools at the same address and with the same phone number were considered one school in NTPS.
- Multiple CCD schools each with a unique administrator who reports to the high school principal were considered one school in NTPS if the respondent said the school covered multiple CCD grade ranges.

Frame Deletions

Because CCD and NTPS differ in scope and their definition of a school, some records were deleted, added, or modified in order to provide better coverage and a more efficient sample design for NTPS. The following types of school records were deleted from CCD during the creation of the NTPS sampling frame:

- There were 1,774 schools that were closed as of the 2013–14 school year and deleted from the frame. These schools were identified by the status code found on the CCD file. They are carried on CCD for one additional year for completeness but are clearly designated as not operating.
- There were 1,724 schools located outside the 50 states and the District of Columbia that were deleted from the frame. These schools were identified as having a FIPS (Federal Information Processing Standards) state code of 60 (American Samoa), 66 (Guam), 69 (Northern Marianas), 72 (Puerto Rico), or 78 (U.S. Virgin Islands). DoD schools located overseas or in a territory (FIPS state code = 63 and postal code not of a state or the District of Columbia) were also deleted from CCD at this time.
- There were 798 Homebound, Adult, or nonschool entities that were deleted from the frame. These schools and programs were clerically identified from a list of schools from CCD that had “HOMEBOUND,” “TARGETED SERVICES,” “PSYCHOANALYTIC,” “ADULT,” “PRISON,” “SUMMER,” “CORRECTIONAL,” or “HOSPITAL” in the name. Since they did not provide classroom instruction to students in grades 1–12, they were not eligible for NTPS.
- There were 1,772 schools that offered kindergarten or less as the highest grade that were deleted from the frame. These schools were identified using the school’s highest grade offered as provided on CCD.
- There were 77 school records deleted from the frame for other reasons, primarily either because they were a non-BIE duplicate of a BIE school or because they were found to be ineligible during research for missing grade ranges.

School Collapsing

There were 2,706 school records that were collapsed into other school records at the building level and deleted. Past data collections have shown that there are sampled schools that report survey data for the entire building when there is one head principal instead of reporting only for the part of the school that has been sampled. This issue occurs most often in certain states, in rural areas, or in schools that offer grades 1–12 in the same building with one head principal. The challenge for data collection lies in the conflicting definition of a school as held by the schools themselves and as reported by states to CCD. The schools often consider themselves one cohesive unit while the state does not. For accounting or other administrative purposes, the states artificially split these schools by grade level and report them as two or three separate schools.

If a CCD school within the associated school district is selected for NTPS, then the school often reports for all of grades 1–12. This caused substantial overreporting in previous rounds of SASS state aggregates, such as enrollment and teacher counts, because these schools were sampled based on the particular grade range as reported on CCD, but these schools responded based on a much broader grade range based on how they perceived themselves. In other words, these schools had unrecognized multiple chances of selection for sampling. The unrecognized chances of selection refer to the fact that regardless of which CCD record in the building was selected, the school was likely to report for the whole building. Thus, the entity that reports could be selected via multiple CCD records. In the past, SASS data were edited after the field data collection to conform to the CCD grade range. This method was costly and time-consuming. Furthermore, many school respondents have reported they do not keep records at the school level as reported on CCD, making it difficult for them to respond to SASS or NTPS in this manner. For this

reason, it was decided for the 2003–04 SASS and continuing through to the NTPS 2015–16 to collapse the CCD records whenever it was believed that this problem was likely to occur.

The U.S. Census Bureau and NCES jointly determined a set of rules for school collapsing to apply during frame creation. In order to make a school’s sampling frame record consistent with the school’s actual grade range and avoid multiple chances of selection for a single school, potential problem school CCD records were identified and collapsed to the appropriate building level. When the school records were collapsed together, the student and teacher counts, grade range, and name as reported to CCD were all modified to reflect the change. Schools collapsing were required to match on a keyword in the name, as well as address and phone number; have contiguous grade ranges; and be of the same school type. Based on previous data collection experience, in a dozen states the rules were modified to require matching on only two of three of the contact information variables—name, address, and phone number. These states were Arkansas, Colorado, Idaho, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Oklahoma, and South Dakota.

Frame Additions

The following types of school records were added to the original CCD while creating the NTPS sampling frame:

- A total of 136 records that were listed on CCD as districts with no associated school records were determined to be newly opened schools, based on the name (e.g., included “school” or “academy”), teacher, and enrollment counts, and were added to the school frame.

After the adding, deleting, and collapsing of school records, the NTPS school sampling frame consisted of 87,598 traditional public and 6,530 public charter schools. From this point on, this is considered the 2015–16 NTPS sampling frame. Table 8 shows the totals by state during each step in the frame creation process. (Note that the difference between the “After additions” column and the “Final public school universe” column represents the number of deletions due to collapsing.)

Table 8. Total number of public and public charter school records during each step in the frame creation process, by school type and state: 2015–16

School type and state	Preliminary 2013–14 CCD ¹ file	After deletions (ineligible and duplicate school records)	After additions (schools appearing on the district file)	Final public school universe (after collapsing procedure)
Total	102,843	96,698	96,834	94,128
BIE-funded ² schools	174	174	174	174
DoD ³ schools	192	59	59	59
Charter schools (included in state totals below)	6,934	6,580	6,595	6,530
Alabama	1,640	1,620	1,628	1,628
Alaska	518	509	509	509
Arizona	2,441	2,245	2,259	2,259
Arkansas	1,126	1,096	1,096	984
California	10,460	10,161	10,190	10,190
Colorado	1,860	1,785	1,785	1,665
Connecticut	1,166	1,091	1,092	1,092
Delaware	236	218	219	219
District of Columbia	251	208	208	208
Florida	4,414	4,068	4,069	4,069
Georgia	2,406	2,353	2,353	2,353
Hawaii	290	290	290	290
Idaho	746	699	699	681
Illinois	4,332	4,069	4,095	3,973
Indiana	1,947	1,902	1,903	1,903
Iowa	1,413	1,345	1,345	1,250
Kansas	1,360	1,339	1,339	1,269
Kentucky	1,623	1,499	1,499	1,499
Louisiana	1,438	1,377	1,377	1,377
Maine	625	610	610	610
Maryland	1,454	1,430	1,430	1,430
Massachusetts	1,888	1,783	1,783	1,783
Michigan	3,676	3,465	3,466	3,335
Minnesota	2,521	2,254	2,254	2,056
Mississippi	1,074	1,060	1,060	1,060
Missouri	2,424	2,339	2,339	2,060
Montana	833	829	831	556
Nebraska	1,115	1,033	1,033	874
Nevada	690	652	652	652
New Hampshire	487	476	476	454
New Jersey	2,615	2,436	2,437	2,437
New Mexico	885	858	858	795
New York	4,908	4,753	4,753	4,753
North Carolina	2,635	2,615	2,619	2,619
North Dakota	533	504	504	403

See notes at end of table.

Table 8. Total number of public and public charter school records during each step in the frame creation process, by school type and state: 2015–16—Continued

School type and state	Preliminary 2013–14 CCD ¹ file	After deletions (ineligible and duplicate school records)	After additions (schools appearing on the district file)	Final public school universe (after collapsing procedure)
Ohio	3,784	3,626	3,626	3,504
Oklahoma	1,808	1,756	1,802	1,449
Oregon	1,254	1,243	1,243	1,229
Pennsylvania	3,172	3,041	3,041	3,041
Rhode Island	310	296	296	296
South Carolina	1,256	1,222	1,223	1,223
South Dakota	707	689	689	464
Tennessee	1,864	1,788	1,788	1,788
Texas	9,337	8,899	8,899	8,899
Utah	1,016	972	972	962
Vermont	318	316	316	316
Virginia	2,197	2,095	2,095	2,095
Washington	2,409	2,291	2,291	2,259
West Virginia	761	757	757	757
Wisconsin	2,293	2,139	2,139	1,978
Wyoming	370	364	364	340
American Samoa, Guam, Northern Marianas, Puerto Rico, U.S. Virgin Islands	1,591	0	0	0

¹ CCD refers to the Common Core of Data.

² BIE refers to the Bureau of Indian Education.

³ DoD refers to the Department of Defense; count includes domestic and overseas schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Frame Data File” before, during, and after frame creation activities, 2015–16.

Frame Corrections

As mentioned above, the preliminary version of the 2013–14 CCD file was used as the basis for the 2015–16 NTPS sampling frame. Using this file required the correction of variables necessary for sampling or conducting the survey, such as grade range, enrollment, teacher count, enrollment by race, school county code, school name, address information, and phone number. The following section outlines the steps taken to correct those variables.

If the school’s grade range was missing from the CCD file, three methods were used to resolve the issue:

- taking data from the two previous CCD files;
- assigning a generic grade range based on the school’s name; and
- researching the grade range by locating the school website.

The enrollment and teacher count were imputed for schools missing this information by applying one of the methods listed below in the following hierarchical order:

- pulling information from one of the two previous CCD files for that school; or
- extrapolating from current CCD student–teacher ratios or averages for the state and grade level.

Free and reduced-price lunch enrollment was imputed for schools missing this information by applying one of the methods listed below in the following hierarchical order:

- pulling information from one of the two previous CCD files for the school;
- using the Predictive Mean Matching (PMM) imputation method with the poverty ratio from the Small Area Income and Poverty Estimates (SAIPE) data. The poverty ratio for each District ID is calculated as follows: “Relevant Age 5 to 17 in Families in Poverty” divided by “Relevant Age 5 to 17 Population”; or
- calculating the average percentage of free or reduced-price lunch enrollment for the state or region, grade level, and collapsed locale and applying the average to the enrollment of the school.

Enrollment by race/ethnicity was imputed for schools missing this information by applying one of the methods listed below in the following hierarchical order:

- pulling information from one of the two previous CCD files for the school; or
- calculating the average percentage by race or Hispanic ethnicity for the state or region, grade level, and collapsed locale and applying the average to the total enrollment of the school.

The school’s grade range was further edited to drop grades that had no enrollment or less than three students in a given grade. This procedure was not applied to schools with fewer than 50 students. Correction of the grade range was important for stratification.

In instances where the school name implied considerably fewer grades than it actually offered, the name was modified to eliminate inappropriate descriptions. These schools were identified by comparing the school’s name to the grades currently offered. If the name differed considerably from the grade range (e.g., the name contained “High School,” but the grades offered were K–12), then the name was modified accordingly.

Missing address information and phone numbers were filled prior to sampling.

Sample Design Goals

As part of the 2015–16 NTPS, an extensive evaluation of the goals of the sample design and sample design research were undertaken to determine the school and teacher sampling methodology as well as the sample allocation that would best meet the goals of the sample design. Some of the goals of the sample design remained the same as they had been in the 2011–12 SASS, while others were modified or dropped. A full description of the sample design research is located in “Appendix E. Report on Sample Design for the National Teacher and Principals Survey.”

The general goals were the following:

- Use the 2013–14 CCD school file as the sample frame with exceptions noted in the previous “Traditional Public and Public Charter Frame Creation” section.
- Produce national estimates of traditional public and public charter school characteristics.
- Produce national estimates of primary, middle, high, and combined schools and selected school characteristics, where combined schools are defined as those that offer both primary and high school grades.
- Produce national estimates of city, suburban, town, and rural schools and selected school characteristics.
- Produce national estimates of high-poverty and not high-poverty schools and select school characteristics, where poverty is defined as having more than 75 percent of students eligible for free or reduced-price lunch.

In addition, the sample allocation research had the following goal:

- Produce the estimates as described above with a targeted 95 percent confidence interval half-width (the standard error times 1.96) of 2.5 percent for a 20 percent characteristic.

Sampling Methodology

The NTPS sample is not a simple random sample, but rather is a systematic probability-proportionate-to-size (PPS) sample, where size is defined to be the square root of the full-time-equivalent (FTE) number of teachers at the school. Unlike SASS, the NTPS survey did not stratify schools prior to sampling. However, some types of schools were oversampled. To determine which schools to oversample, schools were placed into domains. Certain domains were oversampled.

The domains were defined by charter status, grade level, urbanicity, and poverty status. Charter status was defined as charter or not charter. Grade level was categorized into four groups as described below:

- Primary: lowest grade ≤ 4 and highest grade ≤ 8 ;
- Middle: lowest grade ≥ 5 and highest grade ≤ 8 ;
- High: lowest grade ≥ 7 and highest grade ≥ 9 ; and
- Combined: lowest grade ≤ 6 and highest grade ≥ 9 , or school is ungraded.

Urbanicity was defined as the first digit of locale, whereby the categories consisted of city, suburban, town, or rural. Poverty status was broken into two categories, where poverty was defined as more than 75 percent of enrollment eligible for free or reduced-price lunch, and not poverty otherwise.

The oversampling rates were determined to yield enough respondents from the sample to meet the previously described goals. To meet these goals, charter schools were oversampled at a rate 3.1 times their proportional sample allocation. Proportional allocation in this instance is defined as the domain's sum of schools' measures of size relative to the sum of measures of size of all schools in the sampling frame. Further oversampling applied to noncharter schools by grade level, whereby combined schools were oversampled at 2.4 times the proportional allocation, middle schools were oversampled at 1.17 times the proportional allocation, and high schools were oversampled at 1.12 times the proportional allocation. Primary schools were undersampled at a rate of 0.9 times their proportional allocation. In addition, once the grade level sampling differential was applied, noncharter schools had their probabilities further altered by urbanicity as follows: rural schools were oversampled at a rate of 1.05 times their previous rate, town schools were oversampled at a rate 1.27 times their previous rate, and suburban schools were undersampled at a rate of 0.95 times their previous rate.

To ensure lower bounds on precision for all states when consecutive rounds of NTPS data are aggregated, it was necessary to further inflate the measure of size of schools in certain small states. The states and rates are as listed in table 9.

Table 9. Inflation of probabilities in select states to achieve desired sample size

State	State-level inflation of probabilities
Alaska	1.175
District of Columbia	1.650
Hawaii	1.287
Rhode Island	1.703
Vermont	1.261
Wyoming	1.425

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Frame Data File" before, during, and after frame creation activities, 2015–16.

As a final adjustment, school probabilities were inflated by the inverse of the expected completion rate of the school's domain relative to the overall completion rate of 68 percent. Completion rates were obtained from the 2011–12 SASS. Thus to achieve the goals of the sample design, it was determined that 5,300 school interviews were needed. This was estimated to be achievable with an initial sample size of 8,300 schools.

Sample Sort

Prior to sampling, schools were sorted in a prescribed hierarchical order and then sampled systematically. Systemic sampling provides control over the sampling variability of the sample selected with respect to the variables in the sort. The higher variables in the sort are provided more control over the variability, with the lower variables in the sort being provided with less control.

The sort order is as follows:

1. charter status: charter or noncharter;
2. school grade level: primary, middle, high, or combined;
3. urbanicity: city, suburban, town, or rural;
4. poverty status: high (more than 75 percent free or reduced-price lunch eligible), medium (more than 50 percent up to 75 percent free or reduced-price lunch eligible), medium–low (more than 25 percent up to 50 percent free or reduced-price lunch eligible), or low (25 percent or less free or reduced-price lunch eligible);
5. school size category using FTE teachers (two categories for middle and combined charter schools, three categories for everything else);
6. school type for noncharter schools: regular, special education, vocational, or alternative;
7. state; and
8. FTE teachers.

Sample Selection

Schools

Schools were systematically selected using a PPS algorithm. The measure of size used for the schools was the square root of the number of FTE teachers reported for each school or imputed during sampling frame creation. Any school with a measure of size greater than the sampling interval (the inverse of the rate at which the sample is selected) was included in the sample with certainty and automatically excluded from the probability sampling operation. This means that schools with an unusually high number of teachers relative to other schools in the same domain were automatically included in the sample. This produced a public school sample of 8,300 (1,173 public charter schools and 7,127 traditional public schools).

Table 10 shows the selected sample sizes for schools by state. Table 11 shows the selected sample sizes for schools by domain (charter status, grade level, urbanicity, and poverty status). Each selected public and public charter school was also in sample for the principal survey.

Table 10. Selected sample sizes for schools and the percentage of the frame in sample, by state: 2015–16

State	Total sampled schools	Percent of state's frame in sample
Total	8,300	8.8
Alabama	160	9.8
Alaska	50	9.8
Arizona	227	10.1
Arkansas	89	9.0
California	789	7.7
Colorado	138	8.3
Connecticut	98	9.0
Delaware	31	14.2
District of Columbia	47	22.6
Florida	427	10.5
Georgia	225	9.6
Hawaii	37	12.8
Idaho	48	7.1
Illinois	312	7.9
Indiana	161	8.5
Iowa	98	7.8
Kansas	104	8.2
Kentucky	128	8.5
Louisiana	142	10.3
Maine	40	6.6
Maryland	136	9.5
Massachusetts	147	8.2
Michigan	276	8.3
Minnesota	172	8.4
Mississippi	94	8.9
Missouri	189	9.2
Montana	35	6.3
Nebraska	73	8.4
Nevada	54	8.3
New Hampshire	34	7.5
New Jersey	222	9.1
New Mexico	78	9.8
New York	447	9.4
North Carolina	266	10.2
North Dakota	39	9.7

See notes at end of table.

**Table 10. Selected sample sizes for schools and the percentage of the frame in sample, by state:
2015–16—Continued**

State	Total sampled schools	Percent of state's frame in sample
Ohio	288	8.2
Oklahoma	132	9.1
Oregon	96	7.8
Pennsylvania	287	9.4
Rhode Island	44	14.9
South Carolina	103	8.4
South Dakota	41	8.8
Tennessee	151	8.5
Texas	821	9.2
Utah	81	8.4
Vermont	33	10.4
Virginia	189	9.0
Washington	155	6.9
West Virginia	58	7.7
Wisconsin	171	8.7
Wyoming	37	10.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "School Sample Data File," 2015–16.

Table 11. Selected sample sizes for schools and the percentage of the frame in sample, by domain: 2015–16

State	Total sampled schools	Percent of frame in sample
Total	8,300	8.8
Charter schools	1,173	18.0
Noncharter schools	7,127	8.1
Primary	3,688	7.2
Middle	1,441	10.0
High	2,075	10.0
Combined	1,096	14.9
City	2,507	9.6
Suburban	2,585	8.6
Town	1,201	9.4
Rural	2,007	8.0
High poverty	2,148	8.8
Low poverty	6,152	8.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Sample Data File,” 2015–16.

NTPS Teacher Frame and Sample Selection

Frame Creation

In the 2015–16 administration of NTPS, lists of teachers for public schools were collected from schools electronically, on paper, by researching school websites, or by purchasing from a vendor. The paper Teacher Listing Forms were keyed by staff at the National Processing Center. Both the electronic lists and the lists keyed from paper were sampled on a weekly basis throughout the data collection period. Lists collected from the vendor were sampled on a one-time basis at the end of December.

Along with the names of their teachers, sampled schools were asked to provide the following descriptive characteristics of each teacher:

1. teaching status: part time or full time; and
2. subject matter taught: teachers were classified as special education, general elementary, math, science, English/language arts, social studies, vocational/technical, or other.

Stratification

Within each sampled school, teachers were stratified by subject. The strata included math, science, English/language arts, social studies, and everything else.

Sample Allocation

The goals of the teacher sampling were as follows:

- Stratify to ensure that sufficient teachers by subject are selected to produce subject by level estimates for middle and high schools with the desired reliability (2.5 percent confidence interval half-width for a 20 percent characteristic).
- Select a minimum of one and a maximum of 20 teachers per school.

- Minimize the variance of teacher estimates within the school domain by attempting a self-weighting design; that is, attempts were made to equalize the teacher weights within the stratum. This constraint was relaxed to accommodate the other goals of teacher sampling.
- Select an average of six to eight teachers per school depending upon grade range, urbanicity, and poverty status. The average teacher sample size was limited to this to avoid overburdening the schools, while allowing for a large enough teacher sample to meet the reliability requirements as discussed further in this section.

Prior to the 2015–16 NTPS, research was conducted to determine if the average cluster sizes met certain goals for reliability:

- For the school domains of interest (charter status, grade level, urbanicity, and poverty status), set the cluster sizes so as to produce estimates with confidence interval half-widths of 2.5 percent.
- For select subject and grade level estimates, set the cluster sizes so as to produce estimates with confidence interval half-widths of 2.5 percent.
- For state estimates, set the cluster sizes so as to produce estimates with confidence interval half-widths of 2.5 percent when aggregating no more than three consecutive rounds of survey data.

A full description of the sample allocation research is included in “Appendix E. Report on Sample Design for the National Teacher and Principals Survey.”

The basic goal of the sample design is to draw teachers from the sampled schools in each school domain (i.e., charter status/grade level/urbanicity/poverty status) in such a way that accounts for both school and teacher nonresponse, so that the final number of interviewed teachers is 27,450 and the base weights for each sampled teacher are equal within the school domain to the extent possible (minimum and maximum constraints on a school’s teacher sample size create inequality of weights). To accomplish this goal, first, each school is assigned a teacher sample size. Within each school, teachers are assigned to strata based on subject taught, and the teacher sample size is proportionally allocated to the strata (unless oversampling by subject is necessary).

Table 12 provides the average number of teachers to be selected within each school.

Table 12. Average expected number of teachers selected per school, by school level, urbanicity, and poverty status: 2015–16

Urbanicity and poverty status	Average number of teachers selected by school level			
	Primary	Middle	High	Combined
City, high poverty	7.144	7.624	8.251	7.092
City, not high poverty	6.660	7.383	7.643	6.868
Suburban, high poverty	6.889	7.471	7.478	6.949
Suburban, not high poverty	6.718	7.276	7.366	6.769
Town, high poverty	6.404	7.249	7.485	6.743
Town, not high poverty	6.364	7.062	7.245	6.569
Rural, high poverty	6.404	7.249	7.485	6.743
Rural, not high poverty	6.364	7.062	7.245	6.569

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

For a given school, the teacher sample size was chosen to equalize the teacher weights within a school domain. Since the school sample was selected proportional to the square root of the number of teachers in

the school, an equally weighted teacher sample within a school domain was obtained by selecting t_i teachers in school i .

$$t_i = W_i * T_i (C/Y)$$

where:

W_i	is the school weight for school i (the inverse of the school selection probability)
T_i	is the number of teachers in school i , as reported on the Teacher Listing Form
C	is the average teacher cluster size in the urbanicity/poverty status/grade level category (see table 12)
Y	is the simple average of the school's base-weighted number of teachers over all schools

Given the number of teachers selected in each school, t_i , teachers were allocated to the teacher stratum, j , (where j indicates the subject that the teacher teaches) in the following manner:

$$t_{ij} = \frac{t_i * T_{ij} * K_j}{\sum_{j=A}^E T_{ij} * K_j}$$

where:

K_j	is the oversampling factor for the particular teacher stratum, j
T_{ij}	is the number of teachers from stratum j in school i
t_{ij}	is the number of sample teachers selected from school i and teacher stratum j
j	A —math; B —science; C —English/language arts; D —social studies;
	E —other

The values of K_j that were applied to the teacher sampling were initially set to 1.0 for all strata as oversampling was not thought to be necessary. To make sure a school was not overburdened, the maximum number of teachers per school was set at twice the average cluster size for the given type of school. When the number of sampled teachers exceeded the maximum in a school, the sample size, t_i , was reduced proportionally in all strata to achieve a final sample size of twice the average.

Sample Selection

Teacher records within a school domain and teacher stratum were sorted by the teacher subject and the teacher line number code. The teacher line number is a unique number assigned to identify the teacher within the list of keyed teachers. Within each teacher stratum in each school, teachers were selected systematically with equal probability. Table 13 shows the number of teachers selected as described above.

Table 13. Number of selected teachers in the NTPS sample, by domain and teacher stratum: 2015–16

Domain/teacher stratum	Total
Total	48,987
Math	4,231
Science	3,354
English/language arts	5,842
Social studies	2,856
Other	32,704
Charter schools	5,313
Noncharter schools	43,674
Primary	19,079
Middle	9,553
High	15,240
Combined	5,115
City	14,753
Suburban	16,520
Town	6,886
Rural	10,828
High poverty	36,929
Not high poverty	12,058

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

About 16 percent of the in-scope schools did not provide teacher lists and lists could not be obtained from the vendor or the school or district refused to participate in the survey. For these schools, no teachers were selected. A factor in the teacher weighting was used to adjust the weights to reflect the fact that some schools did not provide teacher lists. These factors may cause the overall average number of teachers per school to be slightly different from the target numbers.

To reduce the variance of teacher estimates, one goal of the teacher selection was to make the teacher sample self-weighting (i.e., have equal probabilities of selection) within but not across strata. The goal was generally met. However, since the sample size of teachers in some schools was altered due to the minimum constraint (i.e., at least one teacher per school) or the maximum constraint (i.e., no more than either twice the average stratum allocation or 20 teachers per school), this goal was not fully achieved in all schools.

Field Sampling Activities

Once a sampled school was contacted in the screener or the District Call Operation, the grade range was verified. Occasionally, the grade range differed considerably due to a difference in the school's actual grade range and how it was reported on the sampling frame. When a considerable difference occurred and the school reported fewer grades than expected, the sampled school was considered to have split into two or more schools. In this instance, the responding school was asked to provide a list of all of the schools that covered the sampled grade range. Consequently, one school was randomly subsampled from the list of schools covering the expected grade range. The school base weight was adjusted upward accordingly as described in chapter 8. If the school reported having more grades than expected, the respondent was interviewed, and the sampling frame was reviewed to see if the responding school corresponded to more than one sampling frame record. When this occurred, the sampled school was considered a merged school, and the base weight was adjusted downward to account for the fact that the respondent could have fallen into the sample through more than one sampling frame record.

Chapter 5. Data Collection

The 2015–16 National Teacher and Principal Survey (NTPS) used a combination of mail-based methodology and internet reporting for questionnaires, with telephone and in-person field follow-up. Data collection included the Teacher Listing Form (TLF), Principal Questionnaire, School Questionnaire, and Teacher Questionnaire. At the beginning of data collection, the U.S. Census Bureau (Census Bureau) mailed schools a package of survey materials. The package contained a letter to the principal and an interior envelope containing a letter to the survey coordinator and paper school-level¹¹ questionnaires. The survey coordinator’s letter provided the URL and User ID for the Respondent Status Center and asked the coordinator to login to complete the screener interview. The Respondent Status Center also gave schools the option to upload an electronic teacher list or enter their teachers’ information manually. Once a teacher list was obtained, teachers were sampled and mailed either an invitation to complete their Teacher Questionnaire using an internet instrument (teachers for whom an e-mail address was available) or a paper Teacher Questionnaire (teachers without e-mail addresses); invitations to complete the Teacher Questionnaire were also sent by e-mail when a teacher’s e-mail address was available. The Census Bureau mailed reminder letters and packages to nonresponding schools and teachers. Telephone interviewers and field representatives contacted nonrespondents as necessary.

An additional sample of schools was selected to test the impact of offering internet response at the onset of data collection on the school-level questionnaire response rates. The schools offered this option were purely experimental—that is, their data were not included in the final data files and products, and their response rates were not attributed to the 2015–16 NTPS response. Data collection for these schools included the initial through third mailouts and the telephone screener and reminder operations. These schools were not included in the telephone or field nonresponse follow-up operations. Teachers from these schools were not sampled for inclusion in teacher-level data collection.

Overview of Data Collection

The Census Bureau’s National Processing Center (NPC) sent sampled schools an advance letter in June 2015 to identify cases with invalid addresses prior to the beginning of data collection. Data collection activities began in September 2015. The Census Bureau performed the following activities:

- Established a survey coordinator during the screener interview.
- Mailed questionnaire packages to schools.
- Mailed reminder letters and packages to schools.
- Contacted nonresponding schools by telephone or personal visits by field representatives to complete their TLF.
- Sampled teachers from the TLF or electronic teacher list and mailed either an invitation to complete the Teacher Questionnaire online or a paper Teacher Questionnaire.
- Sent an e-mail containing the URL and their User ID to complete the Teacher Questionnaire online to sampled teachers with valid e-mail addresses.
- Mailed reminder letters and packages to sampled teachers.
- Sent reminder e-mails to sampled teachers.
- Telephoned survey nonrespondents to remind them to complete their outstanding questionnaire.
- Contacted all nonrespondents by telephone calls or personal visits by field representatives.

¹¹ School-level questionnaires included the Teacher Listing Form (TLF), Principal Questionnaire, and School Questionnaire.

Several factors were considered when deciding how best to reach school populations to encourage their response. These included type of questionnaire missing, “priority” school status, and whether the school had established a survey coordinator.

Priority School Indicator

During previous administrations of the NTPS’s predecessor, the Schools and Staffing Survey (SASS), certain school types were observed to have a high impact on the estimates or a low propensity to respond to the survey, or both. A school was identified as having a high impact based on its weight. Schools were identified as having a low propensity to respond if similar schools had low response rates and required a high number of contacts in order to obtain complete questionnaires. The Census Bureau developed a propensity model using 2011–12 SASS response data to identify priority schools using a combination of the school’s weight and response propensity. This model was used to assign priority status to a subsample of 2015–16 NTPS schools. The Census Bureau employed more direct contact strategies during the early phases of data collection to mitigate potential low response for these cases.

Survey Coordinators

Survey coordinators were utilized during data collection for the 2015–16 NTPS. The survey coordinator was a school staff member who was established as the primary contact person for the survey during the screener interview. A survey coordinator’s duties included facilitating data collection by passing out questionnaires to the appropriate staff, reminding the staff to complete their questionnaires, and collecting the questionnaires to return to the Census Bureau. The data collection follow-up strategies were different for schools with and without a survey coordinator established, with the more direct approach taken for those schools without a survey coordinator.

Overall Timing of Data Collection

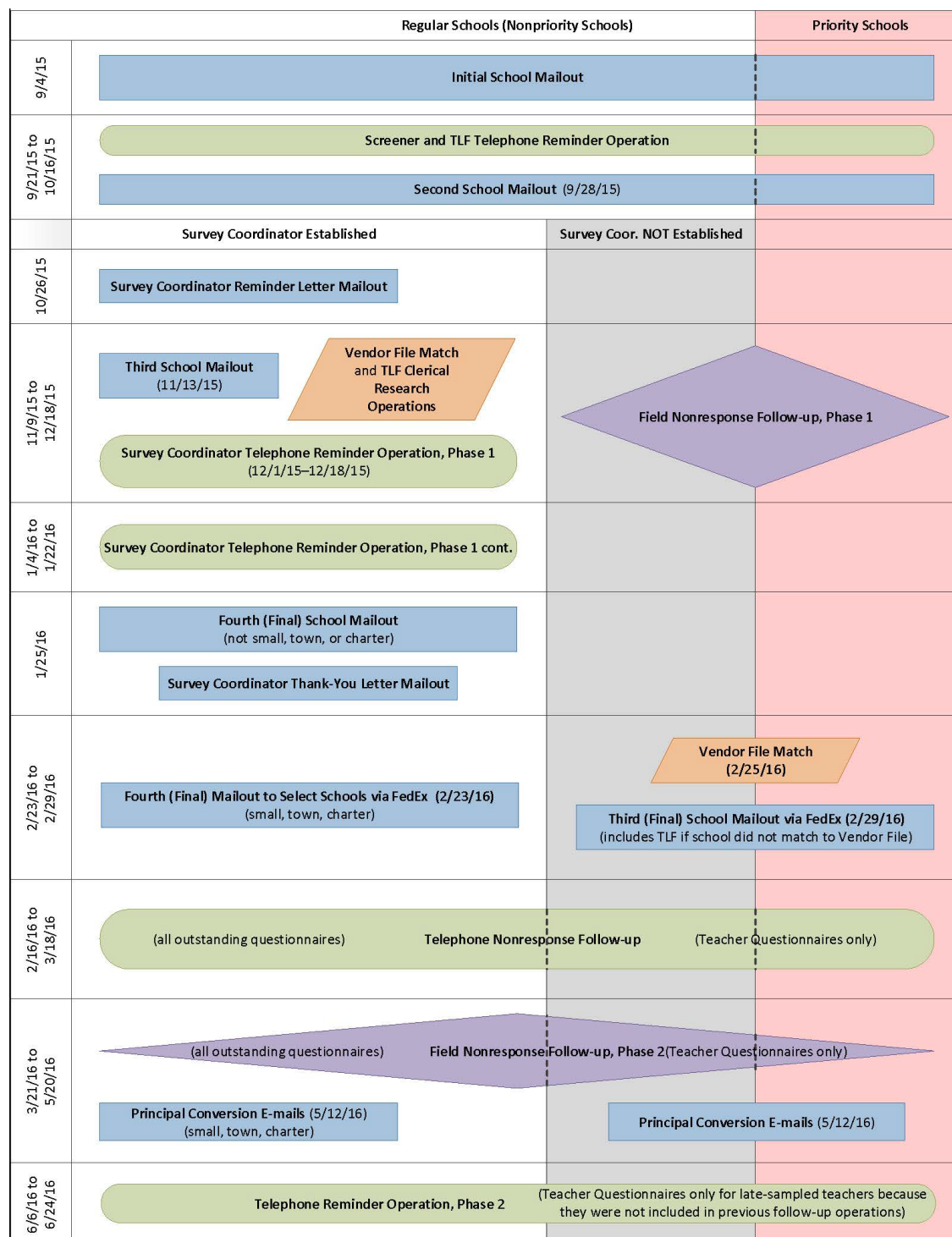
The 2015–16 NTPS principal, school, and teacher data were collected during the 2015–16 school year. Table 14 summarizes the specific data collection activities and the month(s) when each occurred. Details on the flow of cases into each follow-up operation and the response rates by questionnaire are presented later in this chapter.

Table 14. Data collection time schedule for schools: 2015–16

Activity	Month of activity
Advance letters mailed to schools to verify school name and address	June 2015
Initial school package mailed to the school principal	Sept. 2015
Telephone screener follow-up operation conducted to verify school information, establish a survey coordinator, and remind coordinator to complete the Teacher Listing Form (TLF)	Sept.–Oct. 2015
Completed questionnaires accepted by mail	Sept. 2015–June 2016
Second school package mailed to the survey coordinator or the school principal	Sept. 2015
Teachers sampled and invitations to complete the internet-based Teacher Questionnaires or paper Teacher Questionnaires mailed to survey coordinators or individual teachers	Oct. 2015–Apr. 2016
Invitations to complete the internet-based Teacher Questionnaire e-mailed to teachers	Oct. 2015–Apr. 2016
Reminder letter mailed to survey coordinators	Oct. 2015
Field nonresponse follow-up operation conducted for select schools	Nov.–Dec. 2015
Third school package mailed to the survey coordinator or the school principal	Nov. 2015
Telephone reminder operation conducted to remind survey coordinators to complete and return the questionnaires	Dec. 2015–Jan. 2016
Second teacher package mailed to survey coordinators or individual teachers	Nov. 2015–Apr. 2016
Reminder to complete the internet-based Teacher Questionnaire e-mailed to teachers	Nov. 2015–May 2016
Letter mailed to survey coordinators alerting them that follow-up will continue directly with the individual respondents	Jan. 2016
Fourth school package mailed to the school principal	Jan.–Feb. 2016
Third teacher package mailed directly to all nonresponding teachers	Dec. 2015–May 2016
Reminder to complete the paper Teacher Questionnaire e-mailed to teachers	Dec. 2015–May 2016
Telephone nonresponse follow-up operation conducted to remind nonrespondents to complete their questionnaire	Feb.–Mar. 2016
Fourth teacher package mailed directly to all nonresponding teachers	Dec. 2015–June 2016
Field nonresponse follow-up operation conducted for school-level and teacher questionnaires	Mar.–May 2016
Telephone nonresponse follow-up conducted for late-sampled Teacher Questionnaires not included in other follow-up operations	June–July 2016
Close out teacher data collection	Aug. 2016

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Figure 3 shows the data collection operations and the school populations that they were intended to reach.

Figure 3. National Teacher and Principal Survey (NTPS) production school-level data collection operations: 2015–16

NOTE: Figure 3 is color coded by type of activity: mailouts are shaded in light blue, telephone operations are shaded in green, vendor file matches and clerical research operations are shaded in orange, in-person field follow-up operations are shaded in purple, and e-mails are shaded in dark blue. TLF refers to the Teacher Listing Form.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Details of Data Collection

Advance Contact With Special Permission Districts

Some school districts require researchers to submit a research application to conduct research in their schools. Census Bureau staff contacted school districts known to have this requirement prior to the beginning of data collection. There were 244 school districts with schools in the sample for NTPS that were known to have a formal approval process. Census Bureau staff first submitted applications to all special contact districts with three or more sampled schools. As resources and time permitted, some districts with two or fewer sampled schools were contacted. These efforts began in April 2015 and continued through December 2015. Applications were submitted electronically or by mail, depending on the districts' application process. Application packages generally included a cover letter, a proposal for research, a research application (generic or district specific), and copies of the NTPS questionnaires. Other required forms, such as the project officer's resume, a consent form, and an Institutional Review Board Exemption form, were included for some districts.

The Census Bureau sent research request packets to 151 districts prior to the initial mailout. Once data collection began, Census Bureau staff continued to follow up with the school districts regarding the application's status and submitted applications to 14 additional districts that reported that they required approval after the initial questionnaire packages were sent to schools. During this process, the schools were included in the data collection efforts; however, schools in special permission districts that had not responded to the application were not contacted by a local field representative until the spring.

Once approval was obtained, the Census Bureau followed any individual requirements the districts had established for contacting their schools. These included, but were not limited to, obtaining the principals' consent, including approval correspondence in the schools' mailings, and refraining from contacting the schools during specific time periods.

The background, methods, findings, and recommendations of this operation are reported in "Appendix F. Report on Results of Special Contact Districts."

Respondent Status Center

The NTPS Respondent Status Center is an internet application that the Census Bureau designed to serve many functions for sampled schools and telephone interviewers. Each school received an individual User ID. Upon login, a personal identification (PIN) code—which served as the password upon subsequent visits—was generated and displayed to the respondent. School respondents were able to complete the screener interview, upload their teacher list or enter teacher information manually, view the status of questionnaires, and request replacement paper questionnaires. Interviewers could use the Respondent Status Center for the same purposes as the school, with the exception of uploading a teacher list.

Mailouts of School-Level Questionnaires

NPC mailed an advance letter to sampled schools on June 5, 2015. The letter briefly introduced NTPS, alerted the principals that their school had been selected to participate, and asked them to contact the Census Bureau if their school's name and address were not correct. Name and address corrections received by telephone were applied to the sample file prior to the initial mailout in the fall. In addition, staff researched addresses and telephone numbers for schools that had their letters returned by the U.S. Postal Service (USPS) as undeliverable as addressed.

NPC mailed the initial school packages to school principals on September 4, 2015, using USPS First Class Mail. The package contained the following:

- a letter to the principal that introduced the survey and requested that the principal designate a survey coordinator;
- a flyer with statistics for city schools from previous surveys (only for schools located in cities); and
- an envelope to give to the designated survey coordinator; this envelope contained the following:
 - a letter to the survey coordinator that introduced the survey and provided instructions;
 - the TLF;
 - the School Questionnaire;
 - the Principal Questionnaire; and
 - a preaddressed, postage-paid return envelope for each questionnaire.

NPC mailed a second package of school-level questionnaires to schools with one or more questionnaires outstanding on September 28, 2015. If a survey coordinator was established, the package was addressed to this person; otherwise, it was addressed to the school principal. These packages contained only questionnaires that the Census Bureau had not received. Principals and survey coordinators received slightly different versions of the cover letter that accompanied this package. Both letters requested that the questionnaires be distributed and returned as soon as possible and provided instructions for accessing the Respondent Status Center to check the status of the school's questionnaires. The survey coordinator letter also asked the coordinator to record the date each questionnaire was returned.

After the second mailout, schools entered one of two data collection paths based on their priority status, whether a survey coordinator had been established, and whether they had provided their teacher list. Priority schools (regardless of whether or not a survey coordinator had been established) and nonpriority schools without a survey coordinator were included in the phase 1 field nonresponse operation if they had not yet provided their teacher list.¹² If these schools had provided their teacher list, they continued to receive mailouts and were included in the telephone reminder operation instead of the phase 1 field operation.

Nonpriority schools with a survey coordinator continued to receive mailouts and were included in the telephone reminder operation regardless of their TLF completion status.

NPC mailed a reminder letter to survey coordinators or school principals on October 26, 2015. The letter informed the recipient that one or more questionnaires had not been received and asked for assistance in obtaining completed questionnaires. The letter provided the URL and User ID for the Respondent Status Center so that the recipient could view the status of each questionnaire.

NPC mailed a third school package to survey coordinators or school principals on November 13, 2015. The package contained a reminder letter, replacement school-level questionnaires, and a return envelope for each questionnaire.

During the telephone reminder and nonresponse follow-up operations (discussed in detail in later sections), coordinators and individual respondents were able to request a replacement questionnaire if

¹² The exception to this was when schools of these types required district approval, but approval was not granted prior to the start of the operation. These schools were not included in the phase 1 field nonresponse operation and, instead, continued to receive mailouts and were included in the telephone reminder operation.

their previous questionnaire(s) had been misplaced, damaged, or not received. NPC mailed the replacement questionnaires within approximately 14 days of the request.

NPC mailed a letter to survey coordinators in schools with one or more outstanding questionnaires on January 25, 2016. The letter thanked the survey coordinators for their help and alerted them that the Census Bureau would begin following up with the individual survey respondents.

NPC sent the fourth school package directly to the school principals in two waves. The package contained a letter and the outstanding Principal Questionnaire or School Questionnaire, or both. The first wave of packages was sent on January 25, 2016, via USPS First Class Mail. The second wave was sent via FedEx on February 23, 2016, to small schools (enrollment of less than 100 students), schools located in a town, and charter schools.

NPC sent a third school package to school principals of schools that were included in the phase 1 field nonresponse follow-up operation on February 29, 2016, via FedEx. The packages contained a letter and the outstanding Principal Questionnaire or School Questionnaire, or both. A small number of the packages also contained the TLF.

Mailouts of Teacher Questionnaires

NPC mailed the initial teacher packages on a flow basis as teachers were sampled from the teacher lists. Initial packages were generally mailed on Mondays, from October 26, 2015, through April 11, 2016. The TLF requested each teacher's e-mail address. Teachers with a valid e-mail address, either provided on the teacher list or located using web research, received both paper and e-mailed invitations to complete the Teacher Questionnaire over the Internet. Teachers without a valid e-mail address received a letter and a paper Teacher Questionnaire. In schools where a survey coordinator was established, the teacher packages were sent to the survey coordinator with a letter that described the purpose of the Teacher Questionnaire and asked that the enclosed packages be distributed to the selected teachers. In schools where a survey coordinator was not established, NPC mailed the teacher invitations or questionnaires directly to the sampled teachers.

NPC mailed the second teacher packages on a flow basis approximately 3 weeks after the initial package. The second teacher packages were mailed from November 18, 2015, through April 29, 2016. Teachers with a valid e-mail address received both paper and e-mailed reminders to complete the Teacher Questionnaire over the Internet. Teachers without a valid e-mail address received a letter and a paper Teacher Questionnaire. In schools where a survey coordinator was established, the teacher packages were sent to the survey coordinator. In schools where a survey coordinator was not established, NPC mailed the teacher invitations directly to the sampled teachers.

During the telephone reminder and nonresponse follow-up operations, coordinators and individual respondents were able to request a paper Teacher Questionnaire for teachers who preferred to complete a paper form instead of completing the questionnaire over the Internet or needed a replacement questionnaire. NPC mailed the replacement questionnaires within approximately 14 days of the request.

NPC mailed the third teacher packages on a flow basis approximately 3 weeks after the second package. The third teacher packages were mailed from December 7, 2015, through May 13, 2016. All teachers received a paper Teacher Questionnaire during the third mailing. Teachers with a valid e-mail address also received an e-mail asking them to complete the paper questionnaire. NPC mailed the teacher packages directly to the sampled teachers, regardless of whether a survey coordinator was established.

NPC mailed the fourth teacher packages on a flow basis approximately 3 weeks after the third package. The fourth teacher packages were mailed from December 31, 2015, through June 3, 2016. All teachers

received a paper Teacher Questionnaire during the fourth mailing. NPC mailed the teacher packages directly to the sampled teachers.

Telephone and Field Follow-up Operations

Trained telephone interviewers or field representatives, or both, contacted survey coordinators and individual respondents during the data collection process. There were three telephone follow-up operations: the screener follow-up operation, the reminder operation, and the nonresponse follow-up operation. There were two field follow-up operations, during which local Census Bureau field representatives contacted nonrespondents. One field follow-up operation occurred in the fall and was primarily focused on collecting TLFs. The second field follow-up operation occurred in the spring and included principals, schools, and teachers. Each follow-up operation is described in detail in the following sections.

Telephone Screener Follow-up Operation

The letter included in the initial mailing requested that the principal or designated survey coordinator access the Respondent Status Center or call the Census Bureau to complete the screener interview. The screener interview served several purposes: it verified the school's name, address, school type, and grade range in order to determine if the school was in-scope for NTPS; established a survey coordinator; and reminded the survey coordinator to complete and return the TLF. The Census Bureau's Hagerstown Contact Center (HCC) in Hagerstown, Maryland, accepted incoming telephone calls in response to the letter and subsequently contacted schools that had not completed the screener interview from September 21 through October 16, 2015. HCC interviewers used the Respondent Status Center to conduct the screener operation.

The interviewers used the Respondent Status Center and Web CATI¹³ to conduct the screener operation. During the operation, the interviewer introduced the survey and established a contact person to coordinate and distribute the forms, keep track of each form's status, and return the forms as soon as possible; this person was given the title of "survey coordinator." The interviewer verified the school's name, physical address, and mailing address and then collected the survey coordinator's name, title, and contact information. Next, the interviewer asked if the expected school type (i.e., public or charter) was correct. If the school type was not as expected, the interviewer provided the respondent with six categories from which to choose: public, private, charter, homeschool, web-based or virtual school, or Bureau of Indian Education (BIE).¹⁴ Charter and BIE schools were considered public schools; private schools were considered out-of-scope for NTPS. Homeschools and schools with only web-based instruction remained in the survey in order to learn more about these types of schools and whether they would be able to answer the questions asked in NTPS.

Next, the interviewer verified the school's grade range to confirm that the school in question was the correct school. If the school did not provide instruction to students in at least one of grades 1 to 12, or the ungraded equivalent, the school was considered out-of-scope for NTPS. If the grade range differed entirely or significantly from the expected grade range, then the interviewer asked follow-up questions to determine whether the school had split into multiple schools. Interviewers referred cases in which the sampled grade range was served by multiple schools to supervisory staff. These cases were researched, and one of the schools was randomly selected to participate in the survey.

¹³ Web CATI is a web-based call scheduling application developed by the Census Bureau.

¹⁴ Definitions of school types are provided in "Appendix A. Key Terms for NTPS."

If the school was determined to be eligible for the survey, then the interviewer stressed the importance of returning the TLF. If, on the other hand, the school met the out-of-scope criteria, then all of the questionnaires associated with the school were out-of-scope.

Telephone Reminder Operation, Phase 1

HCC conducted the telephone reminder operation from December 1 through 18, 2015, and January 4 through 22, 2016. Interviewers contacted nonpriority schools with an established survey coordinator, nonpriority schools without an established survey coordinator that had provided their teacher list, priority schools in special permission districts where approval was pending, and priority schools that had provided their teacher list to a follow-up on one or more outstanding school-level questionnaires. Interviewers spoke with the survey coordinator, school principal, or other knowledgeable respondent to determine the status of all outstanding questionnaires and to remind them to have the appropriate staff complete and return the questionnaires as soon as possible.

Interviewers began asking about the status of the Teacher Questionnaires approximately 1 week after NPC mailed the second teacher package. Interviewers used the Respondent Status Center to determine the status of the questionnaires and to submit paper questionnaire requests for teachers and remail requests for other respondents who needed replacement questionnaires. Interviewers documented the status of questionnaires (e.g., respondent will mail, respondent has mailed, etc.) in Web CATI after each contact.

Telephone Nonresponse Follow-up Operation

HCC conducted the telephone nonresponse follow-up operation from February 16 through March 18, 2016. Interviewers used the Respondent Status Center to determine which questionnaires had not been completed. Interviewers attempted to contact school principals to remind them to complete their Principal or School Questionnaire, or both. Interviewers were able to complete the appropriate questionnaire over the telephone using the internet questionnaire instruments if the respondent preferred. Interviewers documented the outcome of each telephone call in Web CATI.

Interviewers also attempted to contact individual teachers who had not completed their Teacher Questionnaire. Teachers were included in this follow-up operation once their second teacher package had been mailed. An experiment was embedded in the teacher portion of the operation to test whether contacting teachers only in the afternoon (defined as 2:00 p.m. to 5:00 p.m., respondent time) was more effective than contacting teachers throughout the school day as in typical telephone follow-up operations. The findings of this teacher call time experiment are discussed in the evaluation section of this chapter.

Field Nonresponse Follow-up Operations

The first phase of the field nonresponse follow-up operation occurred from November 9 through December 18, 2015. This operation was aimed at collecting the school-level NTPS questionnaires (TLF, Principal Questionnaire, and School Questionnaire)—with the emphasis placed on the TLF—for the schools that were identified as priority schools prior to data collection and nonpriority schools for which no survey coordinator was established during the screener operation. Priority schools in special permission districts where approval was pending and schools that had provided their teacher list were excluded from the operation.

The second phase of the field nonresponse follow-up operation occurred from March 21 through May 20, 2016. Schools were included in this operation if the Principal Questionnaire or School Questionnaire was outstanding and had not been included in phase 1 of field nonresponse follow-up. All schools with one or more Teacher Questionnaires outstanding were also included.

During the field nonresponse follow-up operations, trained field representatives contacted survey coordinators and individual respondents via telephone calls or personal visits, or both, to determine the status of all outstanding questionnaires and to urge the respondents to participate. Field representatives received a package of labeled questionnaires for each school in their workload so that they could provide replacement questionnaires if respondents had not received, had misplaced, or had damaged their questionnaires. Field representatives made additional contacts via telephone calls or personal visits, or both, to obtain completed questionnaires or to verify that the respondent returned the questionnaire by mail. Each time field representatives contacted a respondent, they updated the outcome code for the appropriate questionnaire(s) and entered any applicable notes in the case management system on their laptop computer.

Telephone Reminder Operation, Phase 2

HCC conducted a second telephone reminder operation from June 6 through 24, 2016. This operation included teachers who were sampled too late to be included in either the telephone nonresponse follow-up or the field follow-up operations. Interviewers contacted nonresponding teachers to remind them to complete their Teacher Questionnaire. This operation was added late during the second phase of field nonresponse follow-up as a last-ditch effort to encourage teachers to participate.

Internet Questionnaire Instruments

Internet instruments were developed for the Principal Questionnaire, School Questionnaire, and Teacher Questionnaire. The Principal Questionnaire instrument and School Questionnaire instrument were primarily utilized by schools in the experimental internet treatment group. Schools in the regular NTPS sample were not offered the Internet as a means to complete their questionnaires; however, they were given login credentials if they asked explicitly whether the survey was available online. The instruments were also available to telephone interviewers if a respondent preferred to complete the questionnaire over the telephone.

All schools in the regular NTPS sample were mailed a paper TLF in their initial mailout; however, when designated survey coordinators or school principals logged into the Respondent Status Center, they had the option to provide their school's teacher list by uploading an Excel file or answering a series of questions for each teacher (name, subject matter taught, full- or part-time status, and e-mail address).

Supplemental Teacher Listing Form Data

Obtaining a high response rate for the TLF is crucial in order to sample a sufficient number of teachers for the Teacher Questionnaire. Therefore, in cases where the school did not provide the TLF, the Census Bureau attempted to obtain a list of teachers using other means. The Census Bureau purchased a list of teachers for the sampled schools from a vendor. The vendor file included each teacher's name, subject matter taught, and e-mail address. In cases where the list of teachers for the sampled school was not available, Census Bureau staff used web research to attempt to compile a teacher list.

Accepting Refusals

Prior to the initial mailout, the Census Bureau submitted applications to some school districts to conduct NTPS in their schools. If the school district denied permission for their schools to participate, Census Bureau staff classified the schools as "district refusals," and those schools were not contacted. Other school districts refused on behalf of their school(s) during the course of data collection. These refusals

were classified as “district refusals,” and the Census Bureau ceased data collection activities for these schools.¹⁵

The Census Bureau contacted nonrespondents by mail, telephone, and personal visits. During these follow-up efforts, some school staff members expressed that they or their school did not wish to participate in the survey. Respondents who refused by mail were contacted by telephone or field staff to try to determine the reason they were reluctant to participate and respond to their concerns. Respondents who refused by telephone were removed from the telephone operation. Many respondents said that they were too busy or did not have the time to complete their questionnaire; therefore, telephone interviewers or field representatives contacted the respondents in later follow-up operations in case they were then able to complete the survey. Respondents from both schools and their districts were only classified as “hard refusals” and not contacted again if they adamantly refused by using either a strong tone or words, contacted NCES directly, or sent an e-mail containing strong language to Census Bureau headquarters staff.

Response Rates

Table 15 shows the unweighted response rates of each questionnaire by month. These rates differ from the unweighted final response rates, as those were determined after the data were edited and completeness checks were performed.

Table 15. Cumulative unweighted response rates (in percentages) during data collection, by date and questionnaire: 2015–16

Questionnaire	Response rates achieved by various dates									
	10/2/15	11/4/15	12/2/15	1/6/16	2/3/16	3/1/16	4/5/16	5/3/16	6/7/16	7/5/16
Principal Questionnaire	15.1	37.6	43.7	60.4	63.1	64.2	68.7	70.2	71.5	71.7
School Questionnaire	14.0	35.8	42.8	61.0	62.2	64.0	68.7	70.3	71.7	71.9
Teacher Listing Form	11.9	31.9	40.6	55.9	72.1	83.0	83.0	83.0	83.0	83.0
Teacher Questionnaire	†	6.7	33.2	38.2	45.6	38.3	48.8	58.4	65.3	69.0

† Not applicable.

NOTE: The response rates for the Teacher Questionnaire were calculated based on the number of teachers who had been sampled by each date. The total teacher sample was drawn by 3/22/16; therefore, response rates beginning on 4/5/16 reflect the response rate for all sampled teachers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School Control Database” and “Teacher Control Database,” 2015–16.

Evaluation of Methodology

A variety of methods to improve response rates for all questionnaires, including early response for the TLF have been tested during previous iterations of SASS and during the 2014–15 NTPS Pilot Test. The tested methods are as follows: in-person data collection for all questionnaires (2003–04 SASS); primarily mail-based data collection with an early in-person follow-up operation focusing on teacher lists (2007–08 SASS); collection of teacher list(s) electronically from public school districts (2011–12 SASS); and collection of teacher list(s) electronically from sampled schools (2014–15 NTPS Pilot Test). There were benefits and drawbacks to each of the methods tried. The 2015–16 NTPS sought to use knowledge gained from these previous administrations to improve the data collection methodology. As noted, the 2015–16

¹⁵ If a school district refused during data collection, but some of the related school or teacher, or both, questionnaires had already been completed and returned by respondents, these interviews were not discarded due to district refusal.

NTPS primarily utilized a mail-based data collection strategy with telephone and field follow-up operations. Several features of data collection were significant modifications from previous collections:

- enabling all schools to provide an electronic teacher list via the Respondent Status Center;
- conducting an early in-person follow-up operation focused on the TLF for schools designated as priority schools and schools without an established survey coordinator; and
- sampling teachers from publicly available teacher lists when a TLF is not received.

The data collection methodology also included experiments meant to inform future collections, as well as minor improvements to existing methodology. There were elements of the data collection methodology that were successful as well as elements that need to be improved upon. The following sections discuss these elements.

Electronic Teacher Lists

Schools received a paper TLF in their initial package; however, the Respondent Status Center allowed all schools to provide their teacher list electronically. Even though all schools were given access to and provided login credentials for the Respondent Status Center, they were not explicitly asked to complete their TLF electronically.

Approximately 12.9 percent of TLFs collected from schools were completed electronically. Approximately 6.1 percent uploaded their list of teachers while 6.8 percent completed the list via manual entry where they either answered a series of questions about each teacher using the Respondent Status Center or provided the information to a telephone interviewer. Both the upload and the manual entry features worked as intended; however, once respondents selected either the upload or the manual entry option, they were not able to switch to the alternative option. This was done intentionally to avoid receiving multiple teacher lists or partial teacher lists from the school; however, it was burdensome for school staff who may have found the alternative option easier to complete. In the future, the Census Bureau recommends that both the upload and the manual entry options remain available to respondents, allowing respondents to choose the completion method that best suits their needs.

Early Field Nonresponse Follow-up Operation for Select Schools

As discussed previously, schools identified as priority schools and schools without an established survey coordinator were contacted in the fall by a field representative. Approximately 3,000 schools were eligible for this phase of the field nonresponse follow-up operation, with the majority being schools without an established survey coordinator; only about 10 percent of the schools in this operation were priority schools.

Table 16 shows the unweighted response rates for the schools included in the phase 1 field nonresponse follow-up operation as of February 17, 2016. The field nonresponse follow-up operation ended on December 18, 2015; however, mail returns received before the telephone nonresponse follow-up operation began on February 17, 2016, were attributed to the field nonresponse follow-up operation. Many schools reported that they could not complete the forms before the holiday break, but would complete and return them after they returned. Ample time was allowed for forms to be received due to mail delays caused by inclement weather in various parts of the country in February 2016.

Table 16. Unweighted response rates (in percentages) for forms in the phase 1 field nonresponse follow-up operation on February 17, 2016, by questionnaire: 2015–16

	Teacher Listing Form		Principal Questionnaire		School Questionnaire	
	Number	Percent	Number	Percent	Number	Percent
Total workload	3,087		3,006		3,044	
Priority school, special district	287	9.3	279	9.3	283	9.3
Priority school, not special district	34	1.1	34	1.1	34	1.1
No survey coordinator	2,766	89.6	2,693	89.6	2,727	89.6
Total cases completed	2,214	71.7	2,131	70.9	2,075	68.2
Interviews ¹	2,198	71.2	1,239	41.2	1,283	42.1
Priority school, special district	213	9.7	108	8.7	117	9.1
Priority school, not special district	23	1.0	15	1.2	15	1.2
No survey coordinator	1,962	89.3	1,116	90.1	1,151	89.7
Noninterviews ²	619	20.1	799	26.6	705	23.2
Out-of-scope	100	3.2	93	3.1	87	2.9
Total cases in progress ³	170	5.5	875	29.1	878	28.8
Response rate ⁴		73.6		42.5		43.4
Priority school, special district		76.1		39.7		42.2
Priority school, not special district		69.7		45.5		45.5
No survey coordinator		73.4		42.8		43.5

¹Teacher Listing Forms obtained from the vendor list are excluded from the number of interviews.

²This includes noninterviews whose final status is a noninterview (e.g., district refusals and hard refusals) and noninterviews still in data collection (e.g., general refusals, insufficient partials, blank questionnaires, etc.).

³No final outcome assigned. School data collection efforts continue.

⁴Response rate is calculated as Interviews/(Workload – Out-of-Scope).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School Control Database,” February 17, 2016.

The response rate for the TLF for schools in the field nonresponse follow-up operation was 73.6 percent. The response rates for the Principal Questionnaire and School Questionnaire were 42.5 percent and 43.4 percent, respectively.

The field nonresponse follow-up operation was successful in obtaining TLFs from priority schools and schools without an established coordinator. The Census Bureau recommends using an early field nonresponse follow-up operation for select schools in the future; however, several considerations should be taken into account.

Almost all of the schools identified as priority schools were in school districts that require approval prior to conducting research in their schools. Priority schools in special districts that granted approval were included in the field nonresponse follow-up operation. Schools in special districts that refused their schools’ participation in the survey were not contacted. Schools in special districts that had not responded to the research application were mailed survey materials during data collection; however, they were not included in the fall field nonresponse follow-up operation. This meant that about half of the priority schools who were sent survey materials were not contacted by a field representative because their district had not granted survey approval. If priority schools are contacted in an early field nonresponse follow-up operation in future survey administrations, schools in districts where approval is pending should be contacted. Research applications should be submitted as soon as possible to allow ample time for districts to review the request.

The timing of the field nonresponse follow-up operation was not ideal. Schools reported that they were unable to complete the questionnaires before their winter break. Planning for future survey administrations should either ensure that operations allow time for accommodating common school breaks or ensure that staff members are trained appropriately to respond to the school's concerns. For example, staff members need to be aware that, although they will not be contacting the schools after the follow-up operation ends, they should encourage the school to return their questionnaires whenever they are able to do so—even if it is after the end of the field operation.

Sampling Teachers From Publicly Available Teacher Lists

The Census Bureau attempted to obtain a teacher list from the sampled schools through mail, telephone, and in-person visits. Once these methods were exhausted, publicly available teacher lists were utilized as a sampling frame. Clerically researched teacher lists were used to sample 563 teachers from 83 schools; teacher lists purchased from a vendor were used to sample 12,653 teachers from 1,647 schools.

Although the publicly available teacher lists improved the coverage of the teacher sampling frame, the teachers sampled from these sources had a significantly lower response rate than teachers sampled from school-provided teacher lists. This may be due to two factors. First, schools that provided a teacher list may be more supportive of NTPS and encourage their teachers' participation. Second, the teacher samples from publicly available teacher lists were drawn in January and March, with the initial mailouts to teachers occurring in February and April. This reduced the amount of time teachers had to complete their questionnaire and prohibited them from inclusion in the telephone and field nonresponse follow-up operations. An additional telephone operation was added in June 2016 to attempt to improve these teachers' response rates; however, many schools had already closed for the year.

If publicly available teacher lists are used for future NTPS administrations, the Census Bureau recommends that the lists be utilized in time for the teachers to be eligible for inclusion in all telephone and field nonresponse follow-up operations.

Internet Teacher Listing Form, Principal Questionnaire, and School Questionnaire

A total of 1,000 schools were sampled to test the impact of offering an internet response option at the onset of data collection on the school-level questionnaire response rates. The schools in the experimental group received the initial mailout, second mailout, reminder letter, and third mailout on the same schedule as the schools in the regular sample. The contents of the first and second mailout packages were similar to those of the regular sample; however, the survey coordinator envelope contained three sealed envelopes containing instructions for completing the TLF, Principal Questionnaire, and School Questionnaire online instead of paper questionnaires. School principals' names and e-mail addresses were researched before data collection began. At the time of the first and second mailouts, principals were sent an e-mail containing the URL and their User ID for the Principal Questionnaire. At the time of the third mailout, principals were sent an e-mail asking them to complete and return their paper questionnaire. Schools in the experimental group were eligible for the screener operation and the telephone reminder operation; however, they were not eligible for the field nonresponse follow-up operations or the telephone nonresponse follow-up operation.

Table 17 shows the response rates for the schools in both the regular sample (paper treatment) and the experimental sample (internet treatment) on February 5, 2016. This date was used for comparison because it was 2 weeks after the conclusion of the telephone reminder operation, which was the last contact for the schools in the experimental sample.

Table 17. Unweighted response rates (in percentages) for forms on February 5, 2016, by treatment: 2015–16

	Paper treatment ¹	Internet treatment ²	
		All	Field cases removed
Teacher Listing Form	71.9 ³	51.5	77.4
Principal Questionnaire	74.0	59.1	80.3
School Questionnaire	73.5	56.3	78.7

¹Excludes schools included in phase 1 of the field nonresponse follow-up operation.

²The “All” column includes all schools in the internet treatment group. If the planned data collection operations for the paper and internet treatments were equivalent, 501 schools either without survey coordinators or in the priority group would have been included in phase 1 of the field nonresponse follow-up operation. These cases have been removed from the workload in the “Field cases removed” column to achieve a more accurate comparison between the paper and internet response rates.

³Teacher Listing Forms (TLFs) obtained through clerical research or vendor match were counted as noninterviews in these calculations. When TLFs obtained through clerical research or vendor match are counted as completed TLFs, the response rate is 89.01 percent. A similar comparison cannot be made for the schools in the internet treatment because clerical research and vendor matching was not conducted for schools in this treatment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School Control Database,” February 5, 2016.

The response rates for the schools in the paper treatment group are substantially higher than the response rates for the schools in the internet treatment group; however, the data collection operations between these groups were not equivalent. Table 17 presents the response rates for the schools in the paper treatment group that were not included in phase 1 of the field nonresponse follow-up operation. Since schools in the internet treatment group were not eligible for the field nonresponse follow-up operation, those that would have been eligible if the data collection operations between the treatment groups were equivalent must be excluded when calculating the response rates for this group. When the schools that would have been eligible for field nonresponse follow-up operation are removed, the schools in the experimental treatment group have a higher response rate for all questionnaires than schools in the paper treatment group. It is recommended that internet questionnaires be offered to all sampled schools in future NTPS administrations.

Collecting Teacher E-Mail Addresses on the Teacher Listing Form

Schools were asked to provide their teachers’ e-mail addresses on their TLF or electronic list of teachers. E-mail addresses were collected so that sampled teachers could be contacted by both e-mail and mailed letters. Table 18 shows the number and percentage of teacher e-mail addresses obtained, either on the teacher lists or after research, by TLF source.

Table 18. Sampled teachers with an e-mail address, by Teacher Listing Form source: 2015–16

TLF source	Before research		After research	
	Number	Percent	Number	Percent
All	43,558	88.9	44,805	91.5
School-provided TLFs	33,114	92.6	34,294	95.9
Uploaded TLF	3,515	92.2	3,741	98.1
Paper TLF	26,622	92.1	27,524	95.2
Manual entry	2,977	97.6	3,029	99.3
Supplemental TLFs	10,444	79.0	10,511	79.5
Clerical research	405	71.9	423	75.1
Vendor list	10,039	79.3	10,088	79.7

NOTE: Percentages are calculated by dividing the number of teachers with an e-mail address by the total number of teachers sampled from the specified Teacher Listing Form (TLF) source.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Cumulative Teacher Sample File” and “Teacher Control Database,” 2015–16.

Teacher e-mail addresses were provided for 92.6 percent of teachers on teacher lists completed by the school staff. Teacher e-mail addresses were available for 79.0 percent of teachers sampled from supplemental lists. In cases where the teacher’s e-mail address was not provided, Census Bureau staff performed research to obtain the teacher’s e-mail address. After research, the Census Bureau had e-mail addresses for 91.5 percent of the sampled teachers. It is recommended that teacher e-mail addresses be collected on the teacher lists in future NTPS administrations. It is also recommended that the Census Bureau conducts research to fill in missing e-mail addresses.

Internet Teacher Questionnaires

NTPS utilized both internet and paper Teacher Questionnaires. Teachers with a valid e-mail address, either provided on the TLF or located using web research, were invited to complete their questionnaire over the Internet in their initial invitation and first reminder letters and e-mails. A paper questionnaire was included with their second and third reminder letters. Teachers without a valid e-mail address received a paper Teacher Questionnaire in every mailout.

Table 19 shows the final Teacher Questionnaire response rate by treatment group.

Table 19. Final Teacher Questionnaire status report, by treatment group: 2015–16

	Teacher internet response group		Teacher paper response group	
	Number	Percent	Number	Percent
Total workload	44,805	100.0	4,182	100.0
Interviews	31,096	69.4	1,657	39.6
Noninterviews	12,263	27.4	2,371	56.7
Out-of-scope	1,446	3.2	154	3.7
Response rate ¹		71.7		41.1
Detailed status of completed cases				
Interviews	31,096	69.4	1,657	39.6
Internet	23,847	53.2	30	0.7
Paper	7,249	16.2	1,627	38.9

¹Response rate is calculated as Interviews/(Workload—Out-of-Scope).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Teacher Control Database,” 2015–16.

Teachers in the internet treatment group had a final response rate of 71.7 percent, with 53.2 percent of teachers completing the questionnaire online. Of teachers who initially received the internet invitation, 16.2 percent eventually completed the paper questionnaire, with about 9.9 percent completing a mailed questionnaire and 6.3 percent completing the questionnaire provided by the field representative. Teachers in the paper treatment group had a final response rate of 41.1 percent. The Census Bureau recommends initially offering internet completion of the Teacher Questionnaire to all teachers.

Best Time of Day to Contact Teachers

During the telephone nonresponse follow-up operation, interviewers contact nonresponding principals and teachers to remind them to complete their questionnaire. Teachers tend to be difficult to reach during the school day due to their teaching schedules. Project staff hypothesized that teachers may be easier to reach by telephone in the late afternoon, when school had been dismissed. To test the accuracy of this theory, an experiment was embedded in the telephone nonresponse follow-up operation. A portion of the nonresponse follow-up teacher workload received an experimental treatment, where the teachers were intended to be contacted only in the afternoon between 2:00 p.m. and 5:00 p.m. (respondent time). The

remainder of the nonresponse follow-up teacher universe functioned as the control group. These teachers were intended to receive contacts throughout the school day, per typical telephone follow-up procedures.

There were operational challenges in conducting the call time experiment. Early in the telephone nonresponse follow-up operation, telephone interviewers were reporting that school staff members were complaining about receiving multiple calls to reach the sampled teachers. School staff members indicated that they would prefer to know the names of the teachers the interviewer needed to reach so that they could assist the interviewer in as few telephone calls as possible; therefore, the results of the experiment could not be evaluated as intended. Instead of comparing the success of reaching the sampled teachers by their treatment group, staff compared the success rates of the actual call times. Call times were categorized as “early” (before 2:00 p.m.) or “late” (between 2:00 p.m. and 5:00 p.m.). There was not a noticeable difference in the success rates of contacting teachers by call time. Additional analyses on the data may be conducted to help inform future administrations of NTPS.

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Chapter 6. Response Rates

This chapter presents the survey response rates for the 2015–16 NTPS. First, the unit response rates are presented in detail. Next, the item response rates for each survey type are summarized, followed by the nonresponse bias analyses that were conducted both on the units and on specific items with under 85 percent response for this NTPS. Major findings are presented.

Unit Response Rates

Unit response rates are the rate at which the sampled units respond by completing the questionnaire to at least a minimum threshold. Unit response rates can be calculated as unweighted or weighted. The unweighted response rates are the number of interviewed sampled units divided by the number of eligible (in-scope) sampled units, which include respondents plus nonrespondents but not ineligible (out-of-scope) units. The weighted response rates are the base weighted number of interviewed cases divided by the base weighted number of eligible cases in order to account for unequal probabilities of selection. Note that base weighted is equivalent to weighted in this context. See chapter 8 for further discussion of the weighting.

The unweighted, base weighted, and base weighted overall (for teachers, across all stages of selection) response rates for each data file are listed in table 20. Table 21 provides the base weighted response rates by selected characteristics for public schools, principals, and teachers. The unweighted response rates provide a general indication of the success of the data collection effort, while the base weighted response rates provide a measure of the quality of the data and the potential for nonresponse bias.

The selected characteristics used in this analysis are frame variables, and therefore values exist for both respondents and nonrespondents. Calculating estimates of these variables using respondents provides an idea of the magnitude of nonresponse bias and whether there are serious data quality concerns that need to be addressed.

Table 20. Unweighted and base weighted response rates and weighted overall response rates in percent, by survey population: 2015–16

Survey population	Unweighted response rate	Weighted response rate	Weighted overall response rate ¹
Public School	71.8	72.5	†
Public School Principal	71.2	71.8	†
Public School Teacher Listing Form	83.8	84.4	†
Public School Teacher	68.4	67.8	57.2

† Not applicable.

¹ Weighted Teacher questionnaire response rate times the weighted Teacher Listing Form response rate.

NOTE: Response rates were weighted using the base weight, which is the inverse of the probability of selection.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 21. Base weighted response rates in percent for public schools, principals, and teachers, by selected characteristics: 2015–16

Selected Characteristic	Schools	Principals	Teachers		Overall teacher response rate ²
			Teacher Listing Form ¹	Teacher questionnaire	
Total	72.5	71.8	84.4	67.8	57.2
School Classification					
Charter	73.2	71.9	77.8	66.2	51.6
Traditional public	72.5	71.8	84.9	67.9	57.6
Student Enrollment					
Less than 200	78.7	78.1	84.0	72.7	61.0
200–499	74.0	73.0	85.7	70.4	60.3
500–749	71.8	70.6	85.0	69.6	59.2
750–999	67.7	67.2	81.3	66.7	54.2
1,000 or more	64.2	65.1	81.6	62.4	50.9
Percent of enrollment with race other than White					
Less than 5	81.6	82.2	89.5	79.9	71.5
5 to less than 10	79.9	80.2	88.9	75.0	66.6
10 to less than 20	75.9	75.1	85.9	71.7	61.6
20 to less than 30	74.3	74.5	83.2	71.5	59.5
30 to less than 50	72.9	72.0	84.0	67.8	57.0
50 or more	67.7	66.3	82.5	62.8	51.8
Percent of K–12 students who were approved for free or reduced-price lunches					
Less than 35	69.5	69.2	80.2	68.8	55.2
35 to less than 50	75.8	75.1	86.9	69.0	60.0
50 to less than 75	76.0	75.3	87.5	69.7	60.9
75 or more	70.0	68.6	84.0	63.4	53.3
Locale					
City	65.2	64.0	80.6	61.6	49.6
Suburban	69.2	67.9	81.4	66.5	54.2
Town	79.4	80.7	89.5	75.5	67.6
Rural	80.6	80.0	89.3	75.0	67.0
Pupil-teacher ratio					
Less than 10	70.6	70.6	78.8	67.6	53.3
10 to less than 15	72.0	71.3	84.3	67.5	56.9
15 to less than 20	73.3	73.0	85.8	69.6	59.7
20 or more	72.5	70.6	83.8	64.4	53.9

See notes at end of table.

Table 21. Base weighted response rates in percent for public schools, principals, and teachers, by selected characteristics: 2015–16—Continued

Selected Characteristic	Schools	Principals	Teachers		
			Teacher Listing Form ¹	Teacher questionnaire	Overall teacher response rate ²
School Level					
Primary	72.6	71.3	84.6	69.9	59.1
Middle	72.3	71.8	85.3	67.3	57.4
High	70.9	71.3	84.1	64.3	54.0
Combined	76.9	76.1	81.6	71.0	57.9
Region					
Northeast	67.0	65.6	80.3	63.0	50.6
Midwest	77.9	77.3	87.4	75.3	65.8
South	71.2	71.0	84.1	67.6	56.8
West	72.7	71.4	84.5	64.9	54.8
Number of teachers					
Less than 10	75.4	74.4	80.5	67.8	54.6
10 to less than 25	77.5	77.0	87.2	71.7	62.6
25 to less than 50	71.4	70.1	84.4	69.9	59.0
50 to less than 75	66.3	65.8	82.0	64.7	53.0
75 or more	61.8	63.3	80.3	61.6	49.5
Title I status					
Title I program	73.3	72.5	86.3	66.9	57.7
Title I noneligible	69.3	68.7	78.9	68.5	54.1
Title I eligible but no Title I program	75.3	74.3	87.0	69.5	60.5
Teacher Status					
Full time	†	†	†	78.8	†
Part time	†	†	†	77.8	†
Not Reported ³	†	†	†	43.7	†
Teacher Subject Taught					
Special education	†	†	†	73.9	†
General elementary	†	†	†	70.8	†
Math	†	†	†	71.9	†
Science	†	†	†	68.8	†
English/language arts	†	†	†	63.4	†
Social studies	†	†	†	69.4	†
Vocational/technical	†	†	†	75.4	†
Other	†	†	†	60.5	†
Not Reported	†	†	†	61.2	†

† Not applicable.

¹ This includes Teacher Listing Forms collected from schools, during clerical operations, and from vendor data.² Base weighted teacher questionnaire response rate times the base weighted Teacher Listing Form response rate, by the levels of each frame characteristic. Overall response rates were not calculated for Teacher Status and Subject Taught because those were reported on the Teacher Listing Form.³ This includes any record where teacher status is blank, from all sources of the Teacher Listing Forms. Teacher status was not available from vendor purchased lists.

NOTE: Response rates were weighted using the base weight, which is the inverse of the probability of selection.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Item Response Rates

Item response rates indicate the percentage of eligible respondents that answered a given survey question, or item. Weighted item response rates are produced by dividing the number of sampled cases responding to an item by the number of sampled cases eligible to answer the item (among those responding to the survey), weighted using either the base weight or the final weight. The final weight for each respondent unit is the base weight adjusted for unit nonresponse and then adjusted to frame totals through ratio raking. See chapter 8 for further discussion of the weighting.

For most items, a counted response is any item that is not missing for which the value of the associated imputation flag is 0. See chapter 7 for detailed information on imputations.

For the 2015–16 NTPS, the base weighted item response rates ranged from 67.1 percent to 100 percent, and the final weighted item response rates ranged from 66.4 percent to 100 percent. For all three NTPS data files, between 96.6 and 100 percent of the items had a base weighted response rate of 85 percent or higher, and between 96.6 and 100 percent of the items had a final weighted response rate of 85 percent or higher.

Table 22 provides a brief summary of the base weighted item response rates, and exhibit 5 provides information about the NTPS items that have a base weighted response rate below 70 percent. Similarly, Table 23 provides a brief summary of the final weighted item response rates, and exhibit 6 provides information about the NTPS items that have a final weighted response rate below 70 percent.

Table 22. Summary of base weighted item response rates, by survey population: 2015–16

Survey population	Range of item response rates	Percent of items 85 percent or above	Percent of items 70 percent to less than 85 percent	Percent of items below 70 percent
Public School	75.8–100.0	97.3	2.7	0.0
Public School Principal	85.3–100.0	100.0	0.0	0.0
Public School Teacher	67.1–100.0	96.6	3.1	0.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Exhibit 5. Items with base weighted response rate of less than 70 percent, by survey population: 2015–16

Survey population	Items
Public School	N/A
Public School Principal	N/A
Public School Teacher	Q8-8-amt (T0920): During the CURRENT SCHOOL YEAR do you, or will you, receive a retirement pension check paid from a teacher retirement system? How much?

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table 23. Summary of final weighted item response rates, by survey population: 2015–16

Survey population	Range of item response rates	Percent of items 85 percent or above	Percent of items 70 percent to less than 85 percent	Percent of items below 70 percent
Public School	75.6-100.0	97.3	2.7	0.0
Public School Principal	85.3-100.0	100.0	0.0	0.0
Public School Teacher	66.4-100.0	96.6	3.1	0.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Exhibit 6. Items with final weighted response rates of less than 70 percent, by survey population: 2015–16

Survey population	Items
Public School	N/A
Public School Principal	N/A
Public School Teacher	Q8-8-amt (T0920): During the CURRENT SCHOOL YEAR do you, or will you, receive a retirement pension check paid from a teacher retirement system? How much?

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher,” 2015–16.

Nonresponse Bias Analysis

A comprehensive nonresponse bias analysis was conducted for the 2015–16 NTPS. The analysis evaluated the extent of potential bias introduced by nonresponse at both the unit and item levels, and the extent to which nonresponse weighting adjustments mitigated bias at the unit level. All statistical tests in this analysis are done at the 5 percent significance level per NCES statistical standards.

Unit-level Nonresponse Bias Analysis

Overview of Methodology

Statistical Standard 4-4 of the *NCES Statistical Standards* (U.S. Department of Education 2012) requires analysis of unit nonresponse bias for any survey stage with a base weighted response rate of less than 85 percent. The 2015–16 NTPS public school and teacher data files failed to reach the 85 percent level. Comparisons between the total sample and respondent populations were made before and after the nonresponse weighting adjustments were applied in order to evaluate the extent to which the adjustments reduced or eliminated nonresponse bias. The following section explains the methodology and summarizes the conclusions.

As defined in the *Office of Management and Budget (OMB) 's Standards and Guidelines for Statistical Reviews*, Section 3.2 (2006), the degree of nonresponse bias is a function of two factors: the nonresponse rate and how much the respondents and nonrespondents differ on survey variables of interest. The mathematical formulation to estimate bias for a sample mean of variable y is as follows:

$$B(\bar{y}_R) = \bar{y}_R - \bar{y}_T = \left(\frac{n_{NR}}{n_T} \right) (\bar{y}_R - \bar{y}_{NR})$$

where

\bar{y}_T = the mean based on all eligible sample cases

\bar{y}_R = the mean based only on respondent cases

\bar{y}_{NR} = the mean based only on nonrespondent cases

n_T = the number of total cases in the sample (i.e., $n_T = n_R + n_{NR}$)

n_R = the number of respondent cases

n_{NR} = the number of nonrespondent cases

A variable-free estimate of the bias, referred to as a relative bias, was used to compare biases across all variables included in the analysis. The relative bias for an estimated mean using only the respondent data, \bar{y}_R , is calculated using the following formula:

$$RelB(\bar{y}_R) = \frac{B(\bar{y}_R)}{\bar{y}_R}$$

Nonresponse bias can exist for any survey variable; however, an estimate of bias can only be obtained if the value of the variable is known for the nonrespondent cases. For this reason, this chapter's analysis evaluates the sample distributions of variables on the NTPS frames. There are a number of variables available for each data file from the 2015–16 NTPS sampling frames. The variables used are presented in exhibit 7.

Exhibit 7. Variables used in the NTPS unit nonresponse bias analysis: 2015–16**Public Schools, Principals, and Teacher Listing Forms**

- *Charter status*: noncharter, charter
- *Enrollment*: less than 200, 200 to less than 500, 500 to less than 750, 750 to less than 1000, 1000 or more
- *Percent of enrollment with race other than White*: less than 5 percent, 5 to less than 10 percent, 10 to less than 20 percent, 20 to less than 30 percent, 30 to less than 50 percent, 50 percent or more
- *Percent free or reduced price lunch eligible*: less than 35 percent, 35 to less than 50 percent, 50 to less than 75 percent, 75 percent or more
- *Locale*: city, suburb, town, rural
- *Pupil-teacher ratio*: less than 10, 10 to less than 15, 15 to less than 20, 20 or more
- *Grade level*: primary, middle, high, combined
- *Region*: Northeast, Midwest, South, West
- *Number of teachers*: less than 10, 10 to less than 25, 25 to less than 50, 50 to less than 75, 75 or more
- *Title I status*: Title I program, Title I noneligible, Title I eligible but no Title I program
- *State*: 50 states and the District of Columbia

Public School Teachers

- *Charter status*: noncharter, charter
- *Enrollment*: less than 200, 200 to less than 500, 500 to less than 750, 750 to less than 1000, 1000 or more
- *Percent of enrollment with race other than White*: less than 5 percent, 5 to less than 10 percent, 10 to less than 20 percent, 20 to less than 30 percent, 30 to less than 50 percent, 50 percent or more
- *Percent free or reduced price lunch eligible*: less than 35 percent, 35 to less than 50 percent, 50 to less than 75 percent, 75 percent or more
- *Locale*: city, suburb, town, rural
- *Pupil-teacher ratio*: less than 10, 10 to less than 15, 15 to less than 20, 20 or more
- *Grade level*: primary, middle, high, combined
- *Region*: Northeast, Midwest, South, West
- *Number of teachers*: less than 10, 10 to less than 25, 25 to less than 50, 50 to less than 75, 75 or more
- *Title I status*: Title I program, Title I noneligible, Title I eligible but no Title I program
- *Teacher status*: full time, part time, not reported
- *Subject taught*: special education, general elementary, math, science, English/language arts, social studies, vocational/technical, other, not reported
- *State*: 50 states and the District of Columbia

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

For each category of the frame variables in exhibit 7, the estimated bias and relative bias can be calculated using the formulas previously presented, with \bar{y}_R representing the estimated number per every 100 (or percent) in that category based on respondent data and \bar{y}_T representing the estimated number per every 100 (or percent) in that category based on the total eligible sample (both respondents and nonrespondents) data.

To make the nonresponse bias analysis representative of the survey population, the estimated means of the frame variable categories are weighted. Because only the base weights are positive for nonrespondents, the base weights are always used to calculate the estimated mean for the total eligible sample. However, for the estimated mean using only the respondents, either base weights or final weights can be used depending on the purpose of the analysis. As part of the nonresponse bias analysis, the estimated bias and relative bias of the variables in exhibit 7 are computed both before and after weighting adjustments.

First, the nonresponse bias is estimated before weighting adjustments, using base weights for both the total eligible sample and respondent means, and tested to determine if the bias is significant at the 5 percent level. The relative bias is the ratio of the estimated nonresponse bias to respondent mean. Next, the nonresponse and raking adjustments are applied to the base weights to calculate the *final weights*. The nonresponse adjustment cells were defined based on output from a CHAID (Chi-Square Automatic Interaction Detector) procedure, and the variables listed above in exhibit 7 were included as inputs in the CHAID (see chapter 8 for more details on the weighting). The nonresponse adjustments, which are included in the final weight, were designed to significantly reduce or eliminate unit nonresponse bias for variables included in the models. After the final weights are computed, any remaining bias is estimated for the variables listed above and statistical tests are performed to check the remaining significant nonresponse bias. For this comparison, nonresponse bias is calculated as the difference between the base weighted total eligible sample mean and the final weighted respondent mean. Again, the relative bias using the final weights is also calculated. The comparison of estimated relative bias before and after weighting adjustments evaluates the effectiveness of the weighting nonresponse adjustment (and raking adjustment) in mitigating nonresponse bias. Sample units found to be ineligible for NTPS were excluded from the analysis.

The tables 24 through 31 included in this chapter outline the summary statistics of the unit bias analysis findings for each NTPS questionnaire. For detailed information about the 2015–16 NTPS nonresponse bias analysis results, please refer to the tables in appendix G.

Unit Nonresponse Bias Analysis Results

Public Schools

Tables 24 and 25 contain summary statistics of the findings. Appendix tables G-1 and G-2 provide the detailed bias analysis that is summarized in tables 24 and 25.

Table 24. Summary of NTPS public school unit nonresponse bias—all items: 2015–16

Nonresponse bias statistics ¹	Total
Before weighting adjustment ²	
Mean estimated percent relative bias (absolute value)	8.12
Median estimated percent relative bias (absolute value)	6.64
Percent of variable categories significantly biased	46.74
After weighting adjustment ³	
Mean estimated percent relative bias (absolute value)	5.58
Median estimated percent relative bias (absolute value)	2.84
Percent of variable categories significantly biased	20.65

¹ Relative bias calculated based on comparison between respondent and full eligible sample. Significance is based on a two-tailed *t* distribution with 200 degrees of freedom and significance level $\alpha = 0.05$.

² Before weighting adjustment estimates are weighted using the school base weights.

³ After weighting adjustment estimates are weighted using the school final weights, which are the base weights adjusted for nonresponse and raking.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 25. Effects of weighting adjustment on bias reduction—NTPS public school unit nonresponse bias: 2015–16

Before weighting adjustment	Change in absolute difference	After weighting adjustment	Number of characteristics
Not significant	Reduction	Not significant	21
		Significant	0
	Increase in difference	Not significant	25
Significant		Significant	3
	>50 percent Reduction	Not significant	23
		Significant	2
	10 percent-50 percent Reduction	Not significant	4
		Significant	11
	<10 percent Reduction	Not significant	0
		Significant	2
	Increase in difference	Not significant	0
		Significant	1

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

As shown in tables 24 and 25, the weighting adjustments eliminated some, but not all, significant bias. For all respondents, 47 percent of the variables were significantly biased before nonresponse weighting adjustments. After the adjustments, 21 percent of categories were significantly biased. Table 25 shows that 27 out of 43 items that were significantly biased were no longer biased after adjustments.

Four items were significantly biased with an increase in absolute difference after adjustments were made. These items were the states of Alaska, Hawaii, Nebraska, and Pennsylvania.

Public School Principals

Tables 26 and 27 contain summary statistics of the findings. Appendix tables G-3 and G-4 provide the detailed bias analysis that is summarized in tables 26 and 27.

Table 26. Summary of NTPS public school principal unit nonresponse bias—all items: 2015–16

Nonresponse bias statistics ¹	Total
Before weighting adjustment ²	
Mean estimated percent relative bias (absolute value)	9.02
Median estimated percent relative bias (absolute value)	6.86
Percent of variable categories significantly biased	48.91
After weighting adjustment ³	
Mean estimated percent relative bias (absolute value)	5.91
Median estimated percent relative bias (absolute value)	2.88
Percent of variable categories significantly biased	28.26

¹ Relative bias calculated based on comparison between respondent and full eligible sample. Significance is based on a two-tailed *t* distribution with 200 degrees of freedom and significance level $\alpha = 0.05$.

² Before weighting adjustment estimates are weighted using the principal base weights.

³ After weighting adjustment estimates are weighted using the principal final weights, which are the base weights adjusted for nonresponse and raking.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 27. Effects of weighting adjustment on bias reduction—NTPS public school principal unit nonresponse bias: 2015–16

Before weighting adjustment	Change in absolute difference	After weighting adjustment	Number of characteristics
Not significant	Reduction	Not significant	26
		Significant	0
	Increase in difference	Not significant	14
		Significant	7
Significant	>50 percent reduction	Not significant	21
		Significant	0
	10 percent–50 percent reduction	Not significant	5
		Significant	14
	<10 percent reduction	Not significant	0
		Significant	2
	Increase in difference	Not significant	0
		Significant	3

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

As shown in tables 26 and 27, the weighting adjustments eliminated some, but not all, significant bias. For all respondents, 49 percent of the variables were significantly biased before nonresponse weighting

adjustments. After the adjustments, 28 percent of categories were significantly biased. Table 27 shows that 26 out of 45 items that were significantly biased were no longer biased after adjustments.

Ten items were significantly biased with an increase in absolute difference after adjustments were made. These items comprise seven states, the “15 to less than 20 percent” category from the “pupil-teacher ratio” characteristic, and both categories of charter status.

Public School Teachers

The overall teacher response rate is a product of the school response rate to the Teacher Listing Form (TLF) and the teacher response rate to the NTPS questionnaire. Therefore, the nonresponse bias analysis for public school teachers is composed of two parts—one analysis for the Teacher Listing Form and second analysis for the Teacher questionnaire. Tables 28 through 31 contain summary statistics of the teacher findings. Tables 28 and 29 apply to the Teacher Listing Form (TLF). Tables 30 and 31 apply to teachers from schools for which a Teacher Listing Form was completed.

Public School Teacher Listing Form (TLF)

Tables 28 and 29 contain summary statistics of the findings. Appendix tables G-5 and G-6 provide the detailed bias analysis that is summarized in tables 28 and 29.

Table 28. Summary of NTPS public school teacher listing form unit nonresponse bias—all items: 2015–16

Nonresponse bias statistics ¹	Total
Before weighting adjustment ²	
Mean estimated percent relative bias (absolute value)	4.57
Median estimated percent relative bias (absolute value)	3.84
Percent of variable categories significantly biased	41.30
After weighting adjustment ³	
Mean estimated percent relative bias (absolute value)	5.60
Median estimated percent relative bias (absolute value)	2.78
Percent of variable categories significantly biased	21.74

¹ Relative bias calculated based on comparison between respondent and full eligible sample. Significance is based on a two-tailed *t* distribution with 200 degrees of freedom and significance level $\alpha = 0.05$.

² Before weighting adjustment estimates are weighted using the school base weights.

³ After weighting adjustment estimates are weighted using the school base weights adjusted for TLF nonresponse.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 29. Effects of weighting adjustment on bias reduction—NTPS public school teacher listing form unit nonresponse bias: 2015–16

Before weighting adjustment	Change in absolute difference	After weighting adjustment	Number of characteristics
Not significant	Reduction	Not significant	18
		Significant	0
	Increase in difference	Not significant	29
		Significant	7
Significant	>50 percent reduction	Not significant	16
		Significant	0
	10 percent–50 percent reduction	Not significant	8
		Significant	1
	<10 percent reduction	Not significant	1
		Significant	0
	Increase in difference	Not significant	0
		Significant	12

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

As shown in tables 28 and 29, the school-level weighting adjustments eliminated some, but not all, significant Teacher Listing Form nonresponse bias. For all respondents, 41 percent of the variable categories were significantly biased before nonresponse weighting adjustments. After the adjustments, 22 percent of categories were significantly biased. Table 29 shows that 25 out of 38 items that were significantly biased were no longer biased after adjustments.

Nineteen items were significantly biased with an increase in absolute difference after adjustments were made. These items comprise fourteen states; the “1,000 or more” category from the “School Enrollment” characteristic; the “15 to less than 20 percent” category from the “pupil-teacher ratio” characteristic; the “10 to less than 25” and “75 or more” categories from the “Number of Teachers” characteristic; and the “Title I eligible but no Title I program” category from the “Title I Status” characteristic.

Public School Teacher Questionnaire

Tables 30 and 31 contain summary statistics of the findings. Appendix tables G-7 and G-8 provide the detailed bias analysis that is summarized in tables 30 and 31.

Table 30. Summary of NTPS public school teacher unit nonresponse bias—all items: 2015–16

Nonresponse bias statistics ¹	Total
Before weighting adjustment ²	
Mean estimated percent relative bias (absolute value)	10.74
Median estimated percent relative bias (absolute value)	8.19
Percent of variable categories significantly biased	71.15
After weighting adjustment ³	
Mean estimated percent relative bias (absolute value)	7.67
Median estimated percent relative bias (absolute value)	3.33
Percent of variable categories significantly ¹ biased	18.27

¹ Relative bias calculated based on comparison between respondent and full eligible sample. Significance is based on a two-tailed *t* distribution with 200 degrees of freedom and significance level $\alpha = 0.05$.

² Before weighting adjustment estimates are weighted using the teacher base weights adjusted for TLF nonresponse.

³ After weighting adjustment estimates are weighted using the teacher final weights, which are the teacher base weights adjusted for both TLF and teacher nonresponse and raking.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 31. Effects of weighting adjustment on bias reduction—NTPS public school teacher unit nonresponse bias: 2015–16

Before weighting adjustment	Change in absolute difference	After weighting adjustment	Number of characteristics
Not significant	Reduction	Not significant	10
		Significant	0
	Increase in difference	Not significant	18
		Significant	2
Significant	>50 percent reduction	Not significant	42
		Significant	1
	10 percent–50 percent reduction	Not significant	11
		Significant	4
	<10 percent reduction	Not significant	1
		Significant	3
	Increase in difference	Not significant	4
		Significant	8

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

As shown in tables 30 and 31, the weighting adjustments eliminated some, but not all, significant bias. For all respondents, 71 percent of the variable categories were significantly biased before nonresponse

weighting adjustments. After the adjustments, 18 percent of categories were significantly biased. Table 31 shows that 58 out of 74 items that were significantly biased were no longer biased after adjustments.

Ten items were significantly biased with an increase in absolute difference after adjustments were made. These items comprise eight states and the “Vocational/Technical” and “Special Education” categories of the subject taught characteristic.

Item-level Nonresponse Bias Analysis

Overview of Methodology

For all NTPS data files, the item bias analysis examined both the overall item response rate for all cases and the group item response rates for the characteristics listed in exhibit 8 below, using the final weights for all unit respondents. If the overall response rate for the item fell below 70 percent, the item will be footnoted in NCES publications with “Item response rate fell below 70 percent” to caution the user that the low item response rate introduces some potential for bias in the imputation procedure. For any characteristic with an item response rate less than 85 percent, a nonresponse bias analysis was done using the characteristics listed in exhibit 8. For each characteristic group, the difference between the overall item response rate and the group item response rate is calculated. The difference is tested for statistical significance at the 0.05 confidence level. All significant differences are evaluated for whether they are also considered noteworthy. We define a noteworthy difference as one that met the following conditions:

- The difference relative to the overall response rate for the particular item was greater than 10 percent.
- The absolute difference was greater than one percentage point.
- The characteristic group had at least 30 interviews.

Exhibit 8. Variables used in the NTPS item nonresponse bias analysis: 2015–16

<u>Public schools and principals¹</u>	<u>Public school teachers²</u>
<ul style="list-style-type: none"> • Charter status • Enrollment • Percent races other than White • Percent free lunch eligible • Locale • Pupil-teacher ratio • Grade level • Region • Number of teachers • Title I status • State 	<ul style="list-style-type: none"> • Charter status • Enrollment • Percent races other than White • Percent free lunch eligible • Locale • Pupil-teacher ratio • Grade level • Region • Number of teachers • Title I status • Teacher Status • Subject Taught • State

¹ A total of 92 groups exist for these 11 school characteristic groups.

² In addition to the 92 groups, the Teacher Status and Subject Taught variables collected from the Teacher Listing Form produce 12 more groups, for a total of 104 characteristic groups.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Table 32 presents the number of items by final weighted response rate for each file. Note that one item is below 70 percent, necessitating a footnote.

Table 32. NTPS number of items by final weighted response rate for each file: 2015–16

File	Total Items	Number of items 95 percent or above	Number of items 85 percent to less than 95 percent	Number of items 70 percent to less than 85 percent	Number of items below 70 percent
Public School	148	87	57	4	0
Public School Principal	94	92	2	0	0
Public School Teacher	292	225	57	9	1

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Item Nonresponse Bias Analysis Results

Public Schools

Four public school items had a response rate below 85 percent, requiring a closer examination. Those items were:

- (1) Q1-6, write-in, (S5120): write-in for description of ALTERNATIVE/OTHER school, with a response rate of 78.3 percent
- (2) Q2-5b_13, (S0284): difficulty in filling OTHER vacancies for this school year, with a response rate of 75.6 percent
- (3) Q3-3, (S0302): minimum number of community service hours required of the high school graduates in the class of 2016, with a response rate of 77.9 percent
- (4) Q4-4b (K-12), (S0410): number of K–12 students APPROVED for free or reduced-price lunches, with a response rate of 84.2 percent

Table 3 summarizes the item nonresponse bias analysis results for each of the public school items. For each item, the weighted response rate for each of the 92 school characteristic groups in exhibit 8 were compared to the overall response rate. Note that some of the 92 groups could have no eligible unit-level respondents (for example, enrollment less than 200), in which case an item response rate comparison cannot be made. The table shows how many of the 92 characteristic groups had significantly different response rates from the overall response rate, and how many of those significant differences were noteworthy according to the three criteria previously defined. Finally, the characteristic groups of most concern are listed, which are those that not only have both noteworthy and significant differences but also a response rate that is lower than the overall response rate.

Table 33. Summary of NTPS public school item nonresponse bias: 2015–16

Item	No eligible unit respondents	Significantly different response rates	Significant differences that are noteworthy	Groups with significant, noteworthy differences		
				Response rate higher than overall	Response rate lower than overall	Characteristics with response rates lower than overall (response rate)
(1)	7	35	4	3	1	75 percent or more free lunch eligible (69 percent)
(2)	0	15	6	5	1	Arkansas (52 percent)
(3)	0	42	16	14	2	Primary Schools (70 percent) Texas (65 percent)
(4)	0	13	0	0	0	N/A

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Public School Principals

No public principal items had a response rate below 85 percent, requiring a closer examination.

Public School Teachers

Ten public teacher items had a response rate below 85 percent, requiring a closer examination. Those items were:

- (1) Q2-13d(8), students (T0267): number of students in 8th class period, with a response rate of 81.1 percent
- (2) Q2-13(9), code (T0248): subject matter code for 9th class period, with a response rate of 81.4 percent
- (3) Q2-13d(9), students (T0268): number of students in 9th class period, with a response rate of 78.2 percent
- (4) Q2-13(10), code (T0249): subject matter code for 10th class period, with a response rate of 78.3 percent
- (5) Q2-13d(10), students (T0269): number of students in 10th class period, with a response rate of 74.4 percent
- (6) Q4-3c(2) (T0426): grade range of teaching certificate marked in question 4-3b, with a response rate of 80.8 percent
- (7) Q4-3e(1), code (T0430): code of first additional content area certified to teach by certificate in question 4-3b, with a response rate of 82.5 percent
- (8) Q4-3e(1) (T0431): grade range certified to teach the first additional content area by certificate in question 4-3b, with a response rate of 75.8 percent
- (9) Q8-1b-(1) (T0905): DURING THE SUMMER OF 2015, if you have earnings from working in a non-teaching job in the school or any other school, did all of these earnings come from your current school? - with a response rate of 78.4 percent
- (10) Q8-8-amt (T0920): During the CURRENT SCHOOL YEAR, how much was received from a retirement pension check paid from a teacher retirement system? - with a response rate of 66.4 percent

Table 34 summarizes the item nonresponse bias analysis results for each of the public teacher items. For each item, the weighted response rate for each of the 104 characteristic groups in exhibit 8 were compared to the overall response rate. Note that some of the 104 groups could have no eligible unit-level respondents (for example, enrollment less than 200), in which case an item response rate comparison cannot be made. The table shows how many of the 104 characteristic groups had significantly different response rates from the overall response rate, and how many of those significant differences were noteworthy according to the three criteria previously defined. Finally, the characteristic groups of most concern are listed, which are those that not only have both noteworthy and significant differences but also a response rate that is lower than the overall response rate.

Table 34. Summary of NTPS public school teacher item nonresponse bias: 2015–16

Item	No eligible unit respondents	Significantly different response rates	Significant differences that are noteworthy	Groups with significant, noteworthy differences		
				Response rate higher than overall	Response rate lower than overall	Characteristics with response rates lower than overall (response rate)
(1)	0	37	12	9	3	Less than 10 teachers (65 percent) General elementary (64 percent) Math (59 percent)
(2)	0	49	28	13	15	Less than 200 enrollment (71 percent) 1000 or more enrollment (70 percent) Pupil-teacher ratio less than 10 (62 percent) Middle schools (72 percent) High schools (68 percent) South region (73 percent) Less than 10 teachers (54 percent) Teacher status not reported (73 percent) General elementary (55 percent) Math (44 percent) Science (59 percent) English/language arts (66 percent) Social studies (52 percent) Arizona (58 percent) Texas (70 percent)
(3)	0	44	21	11	10	1000 or more enrollment (66 percent) 50 percent or more non-White (70 percent) Pupil-teacher ratio less than 10 (62 percent) Middle schools (68 percent) High schools (67 percent) Less than 10 teachers (54 percent) General elementary (55 percent) Math (41 percent) English/language arts (64 percent) Social studies (51 percent)

See notes at end of table.

**Table 34. Summary of NTPS public school teacher item nonresponse bias: 2015–16—
Continued**

Item	No eligible unit respondents	Significantly different response rates	Significant differences that are noteworthy	Groups with significant, noteworthy differences		Characteristics with response rates lower than overall (response rate)
				Response rate higher than overall	Response rate lower than overall	
(4)	0	51	32	15	17	Less than 200 enrollment (65 percent) 1000 or more enrollment (65 percent) 50 percent or more non-White (70 percent) Pupil-teacher ratio less than 10 (55 percent) Middle schools (68 percent) High schools (61 percent) South region (68 percent) Less than 10 teachers (46 percent) Teacher status not reported (70 percent) Special education (47 percent) General elementary (46 percent) Math (39 percent) Science (49 percent) English/language arts (55 percent) Social studies (45 percent) Arizona (52 percent) Texas (60 percent)
(5)	0	49	31	15	16	1000 or more enrollment (62 percent) 50 percent or more non-White (64 percent) 75 percent or more free-lunch eligible (67 percent) Pupil-teacher ratio less than 10 (55 percent) Middle schools (65 percent) High schools (60 percent) South region (66 percent) Less than 10 teachers (46 percent) Teacher status not reported (66 percent) Special education (47 percent) General elementary (46 percent) Math (36 percent) Science (49 percent) English/language arts (52 percent) Social studies (45 percent) Texas (60 percent)
(6)	0	19	1	1	0	N/A
(7)	0	22	6	6	0	N/A
(8)	0	13	5	3	2	Charter schools (64 percent) Ohio (61 percent)
(9)	1	11	5	3	2	Combined schools (70 percent) Wisconsin (63 percent)
(10)	2	26	14	9	5	200 to <500 enrollment (59 percent) City locale (56 percent) Northeast region (50 percent) Michigan (34 percent) New York (35 percent)

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16.

Chapter 7. Data Processing

Data processing includes all activities related to the management of the sampled cases and their outcomes and those activities involved in capturing, transmitting, and editing the data provided by the respondents as well as adding and handling extant data from outside educational data sources to be present on final data products. As a result, the very first data processing step is to assign an appropriate outcome code for each case. Given the various ways respondents could have provided the survey information (e.g., paper questionnaire, internet questionnaire, telephone, in-person interview), the U.S. Census Bureau (Census Bureau) also had to use a variety of methods to assign the appropriate outcome code for each questionnaire.

All paper questionnaires that were received in Jeffersonville, Indiana, were transmitted to the Census Bureau clerical processing staff, who assigned a check-in code using the Automatic Tracking and Control (ATAC) system. The data from completed paper questionnaires were captured (converted from paper into electronic format) and sent to Census Bureau analysts in weekly waves of reformatted SAS datasets, by questionnaire type. The data from the questionnaires completed on the Internet were retrieved daily from the instrument by Census Bureau programming staff and assigned a check-in code (“net code”) based on the items completed by the respondent. These data were combined with the reformatted paper questionnaire data into SAS datasets for data review, and a status code was assigned to each record based upon its ATAC code or net code. Telephone interviewers used the Web CATI system to track cases in their workloads as well as assign outcome codes; they used the internet questionnaire instruments to collect survey data. Field representatives (FRs) used the Census Bureau’s Case Management system to track cases in their workload as well as assign an outcome code indicating the status (e.g., unable to contact, refusal, out of scope, etc.) of each paper questionnaire.

Data processing procedures were created specifically for each type of questionnaire: School, Principal, and Teacher. Data were not mixed across questionnaire types.

Three data files were created, each file containing data from a single questionnaire type. These data files are the source files for the documentation files and restricted-use files. The steps involved in creating and finalizing these files are described below.

Questionnaire Check-in

Check-in of Paper Questionnaires

Respondents were encouraged to complete and mail back all forms sent to their school. Questionnaires received by the National Processing Center (NPC) were immediately checked into the ATAC system by clerical staff. At this stage, questionnaires received an outcome code of complete if any items on the questionnaire were answered. Additional outcome codes that were set included refusals, blanks, duplicates, Undeliverable as Addressed (UAA), and various out-of-scope codes.¹⁶

¹⁶ The following out-of-scope codes apply to all National Teacher and Principal Survey (NTPS) questionnaire types: “School is no longer operating,” “Not a school,” “Wrong grade range,” “Wrong classification (private, etc.),” “Temporarily without students,” “Duplicate school in sample,” and “Other.” The following out-of-scope codes apply only to the NTPS-4 Teacher Questionnaires: “No longer works at this school,” “Not a teacher,” and “Deceased or moved outside U.S.” The following out-of-scope code applies only to the NTPS-2 Principal Questionnaires: “No principal.”

The questionnaires were then grouped into batches by questionnaire type and interview status (i.e., completes, noninterviews, and out-of-scope for the survey), and those classified as “complete” were sent on for data capture. These outcome codes assigned during check-in were later used to determine the status code of each case.

For cases that did not mail in the paper questionnaire or complete the questionnaire online during the initial phase of data collection, the Census Bureau conducted several reminder and follow-up operations. One type of operation was by a telephone call, and the other was by an in-person visit by an FR. The aim of both of these operations was to encourage the respondents to complete their questionnaires.

Completed questionnaires picked up by an FR were shipped to the clerical processing staff at the NPC for ATAC check-in and data capture.

Check-in of Internet Questionnaires

Internet instruments were developed for all National Teacher and Principal Survey (NTPS) questionnaire types—the Principal Questionnaire, School Questionnaire, and Teacher Questionnaire. The Principal Questionnaire instrument and School Questionnaire instrument were primarily utilized by schools in the experimental internet treatment group. Schools in the regular NTPS sample were not offered the Internet as a means to complete their questionnaires; however, they were given login credentials if they asked explicitly whether the survey was available online either by telephone or e-mail.

All sampled teachers with a valid e-mail address, either from the teacher list, web research, or an outside vendor, were offered the Teacher Questionnaire internet instrument as the primary means to complete their questionnaire. Approximately 74 percent of teachers who completed an NTPS-4 Teacher Questionnaire completed the internet version of the questionnaire.

In addition, the NTPS internet instruments were available to telephone interviewers if a respondent preferred to complete the questionnaire over the telephone.

Data from the NTPS questionnaires completed on the Internet were retrieved daily from the instrument by Census Bureau programming staff and assigned a net code based on the items completed by the respondent; this net code, along with the ATAC outcome code discussed above, was later used to determine the status code of each principal, school, and teacher record.

The internet instrument was programmed so that internet respondents could not skip over critical items (those items that must be answered in order for a questionnaire to be considered complete). On the last screen of each internet questionnaire, the respondent was given the option to submit the completed questionnaire. The internet questionnaires were assigned a check-in code of complete as long as the respondent completed all of the critical items plus 10 percent of the remaining items and successfully submitted the completed survey. All other situations where the respondent logged in to the instrument but did not complete the questionnaire were considered to be partially complete and were assigned an interview status code, during the preliminary and final interview status recode (ISR) stages of data processing, that was dependent upon which items the respondent did or did not answer. For further information about the preliminary and final ISR classification, refer to the Data Review section of this chapter.

Data Capture and Imaging

Data Capture of Paper Questionnaires

The 2015–16 NTPS paper questionnaire data were captured using a combination of manual data keying and imaging technology, both of which were facilitated by the Integrated Computer Assisted Data Entry (iCADE) system. The first step in the iCADE system is imaging. The images are then used as the source for electronic data capture, manual keying, and analyst data review.

When the NTPS paper questionnaires were received and checked in by the Census Bureau clerical processing staff as “complete” (i.e., any items on the questionnaire were answered), they were entered into the iCADE system for control purposes and grouped into batches by questionnaire type for data capture and imaging. The batches of questionnaires were disassembled using a guillotine, and each duplex page was scanned. At the conclusion of the scanning process, the iCADE system matched the number of imaged pages with the number of pages expected for each questionnaire type. If there was a discrepancy between the images scanned and the number of pages expected, a series of screens was presented to clerical staff, enabling a clerk or supervisor either to accept the batch as it was or to pull it from processing until the issue was resolved.

The batches that were accepted after the scanning process were sent to the next stages of data capture: auto registration, Optical Mark Recognition (OMR), and manual registration. During auto registration, all of the scanned images were read into the server by their barcodes, which then identified each page in the batch. Once the pages were identified, the OMR server could then read and recognize the presence of answer marks in the boxes next to precoded, categorical items. The OMR server was programmed with the locations of the answer boxes for precoded items prior to data capture. The program automatically entered the appropriate data into the OMR script file for that questionnaire.

The automated processes (registration and OMR) were not able to complete every paper questionnaire. Certain circumstances could cause them to fail. For example, an unreadable barcode or a checkbox ambiguity would be flagged by the program for intervention. Batches that could not be completed in the automated processes were directed to a manual registration phase of data capture. This process included showing the images to clerical staff, enabling a clerk or supervisor to resolve the issue by manual repair.

Once all of the OMR data were captured correctly and verified as necessary, all write-in fields (i.e., open-ended, numeric, and character fields) were captured by a process called Key From Image (KFI). First, the server was programmed with the location of expected answer marks for items that were not precoded. Then clerical staff, called keyers, viewed the write-in fields and manually typed (keyed) the data present in the field or entered a code to indicate the field was blank.

The next stage of data capture was a data quality check of the KFI responses, referred to as Analyze KFI. During this check, a percentage of nonblank KFI fields were sampled so that clerks could verify the output. A random number was generated at the starting point for nonblank fields within a batch. Then, the system began at the randomly generated number and took every Xth field for the nonblank fields, and all sampled fields were added to a KFI data file. This KFI data file was then sent to a verification clerk who would verify the validity of the KFI output. The verification clerk was presented with an image of the sample fields and was instructed to enter the response, if any, that he or she found in each field. This clerk was not provided with the data entered by the original keyer.

The system compared the KFI entry from the first entry and the verification entry. The fields with differences were flagged in the KFI script file. In addition, the system computed error rates for the

nonblank fields. An error occurred when the clerk's field verification differed from the original KFI entry. Errors were classified into a number of categories, based upon the keying error situation.

For these cases where there was a difference, the batch KFI script file was forwarded to a third clerk, an Adjudicator, who was required to provide an interpretation of the marks with differences. The Adjudicator could (1) agree with the keyer, (2) agree with the verifier, or (3) provide his or her own interpretation of the respondent's answer. The Adjudicator then classified the error into a number of categories based on the keying error situation; this classification served as the final classification. Once the Adjudicator had made a decision and the data had been adjusted if necessary, the batch was marked as finished and released to Census Bureau analysts.

Data Capture of the Internet Questionnaires

Data collected via the internet questionnaire instrument did not go through a separate data capture operation. Internet response data were saved by the system in electronic format, so they did not require a data capture process.

Internet respondents were able to generate PDF images of their questionnaires upon completion, which were automatically populated with the data that they entered into the internet instrument. This feature was included so that the respondents could print out a record of their survey responses if they were interested. However, since the data on the PDF were identical to those data entered by the respondents electronically, there was no added value for Census Bureau analysts to reference these PDFs as they did when performing analyst review of data collected on paper questionnaires to look for keying errors or respondent notes.

Reformatting

As the NTPS paper questionnaire data were captured and transmitted weekly, the resulting output files of raw data were reformatted into SAS datasets. Data collected using the internet questionnaire instruments were in a different electronic format when they were exported from the instrument and therefore needed to be reformatted. Census Bureau analysts provided specifications to programmers that inappended how to merge these paper and internet data files together into a combined reformatted SAS dataset in order to facilitate the remaining data processing. Data were kept in files by questionnaire type. This allowed analysts to proceed with data review and data processing of the paper and internet data together in merged SAS datasets.

Data Review

The overall goal of the data review process was to make sure that the final datasets contained clean, accurate data and that there were no .n (not answered) items on any questionnaire records in the final data files. Each phase of processing had an associated review of the data where analysts reviewed the frequencies data, source code by source code (or groups of source codes, as necessary) in order to observe the changes that occurred in the data throughout the different stages of data processing. These data processing steps, which are outlined and discussed further in this document, include a preliminary interview status classification; a series of computer edits that checked that the data were in range, consistent throughout a questionnaire record, followed the correct skip pattern, and logically followed from responses on related NTPS questionnaires; a final interview status classification; and an imputation stage, during which any remaining "not answered" survey items were imputed. At every step in which data were changed by a computer edit, an edit flag was set to indicate the nature of the change. Similarly, imputation flags were set when data were added to indicate that data were imputed. As part of data review, analysts examined those changes.

The primary objectives of the data review were to validate that the processing programs were working as intended and to identify suspicious values. By reviewing the frequency counts of data items at each stage of data processing, analysts were able to make sure that the edit and imputation programs were working correctly; that is, that they were doing what analysts intended for them to do. The data review also helped to ensure that the imputed values were consistent with the other data on the questionnaire record.

Analysts used the frequencies of each data item at each stage of data processing to identify suspicious values (e.g., if an item's response was outside the range of possible answer choices or if an answer seemed unlikely given the respondent's other responses in the survey). In the early stages of processing, analysts investigated anomalies by visually examining the image of the paper questionnaire page. Analysts verified that the data were keyed correctly and looked for additional information the respondent may have written on the questionnaires outside of the answer spaces provided. Analysts updated the files with corrected information, as appropriate.

Preliminary ISR Classification

The preliminary ISR was a preliminary determination of whether each case was an interview, a noninterview, or was out-of-scope for NTPS. In general, cases with an "out-of-scope" outcome code that had been assigned during data collection were classified as out-of-scope (ISR = 3) for the preliminary ISR. Otherwise, cases with data entries were classified as completed interviews (ISR = 1). Cases with no data and cases where the district or school had refused were classified as noninterviews (ISR = 2). A more detailed discussion of interview status can be found in chapter 6.

Computer Edits

After the preliminary ISR classification, all files were submitted to a series of computer edits.¹⁷ These edits consisted of a range check, a consistency edit, a blanking edit, and a logic edit.

Creation of Edit Flags

Because the consistency edits and logic edits actually changed the existing NTPS data, a series of computer edit flags was created to indicate such changes. These flags enabled analysts to keep track of how much editing was occurring overall, along with what kinds of changes and at which stage of processing these changes were made. The definitions for each flag used during the consistency and logic edits are described in exhibit 9 below.

¹⁷ The "computer edits" referenced throughout this chapter refer to the range checks, consistency edits, blanking edits, and logic edits that took place after the data were collected and reformatted into SAS datasets. They do not include the edits that were embedded into the teacher internet instrument, which included range checks and consistency edits that would prompt the respondents if a response they entered was out of range or inconsistent with other entries. The NTPS questionnaires completed using the internet questionnaire instrument still underwent the computer edit stage of processing as described throughout this chapter.

Exhibit 9. Edit flags created in processing: 2015–16 NTPS questionnaires

Processing stage	Flag variable	Flag values and definitions	
Edit Flag Recode	ef_[source code] =	0	Item was not edited during the consistency or logic edits.
		1	Item was edited during only the consistency edits.
		2	Original value was ratio adjusted during the logic edit.
		3	Data were added using data from other variables in same questionnaire.
		4	Data were added using data from another associated questionnaire (principal record, school record, teacher record, or Teacher Listing Form [TLF]).
		5	Data were added using data from the sample file (Common Core of Data [CCD] or TLF).
		12	Item was edited during the consistency edits, and item was ratio adjusted during the logic edit.
		13	Item was edited during the consistency edits, and data were added using data from other variables in same questionnaire.
		14	Item was edited during the consistency edits, and data were added using data from another associated questionnaire (principal record, school record, teacher record, or TLF).
		15	Item was edited during the consistency edits and data were added using data from the sample file (CCD for nonteachers or TLF for teachers).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Documentation Data Files,” 2015–16.

The edit flags are not included on the restricted-use data files.

Range Check

The first of the computer edits was the range check. The range check was used to delete entries that were outside the range of acceptable values that were set prior to the administration of NTPS. Entries that were deleted as a result of range checks had data added during the logic edit and imputation stages of data processing. The edit flags described above do not reflect the deletion of entries due to range checks.

Consistency Edit

The consistency edits identified inconsistent entries within each case and, whenever possible, corrected them. If the inconsistencies could not be corrected, the inconsistent values entries were deleted. These inconsistencies were

1. within items (e.g., if the response to the “Yes/No” part of School Questionnaire item 1-7a—does the school currently have any students enrolled in kindergarten—was “No,” but there was

- an entry in 1-7b indicating the length of the school day for kindergarten, transitional kindergarten, or transitional first-grade students, the entry in item 1-7a was deleted); or
2. between items (e.g., if the response to item 1-5 on the Principal Questionnaire, years of experience as a principal, indicates that the respondent became a principal before the age of 18 when considering the entry in item 6-4, birth year, the entry in item 1-5 was deleted).

In addition, the consistency edits filled in some items where data were missing or incomplete by using other information on the same data record. For example, if the number of part-time teachers was not reported in item 2-1b on the School Questionnaire, the total number of teachers was reported in item 2-1c, and the total was greater than or equal to the number of full-time teachers in item 2-1a, the consistency edit entered the difference as the number of part-time teachers in item 2-1b.

Blanking Edit

The blanking edits deleted extraneous entries (e.g., in situations where skip patterns were not followed correctly) and assigned the “not answered” (.n) code to items that should have been answered but were not. Entries that were assigned the “not answered” (.n) code had data added during the logic edit and imputation stages of data processing. The edit flags do not reflect the deletion or assignment of the “not answered” (.n) code due to blanking edits.

Logic Edit

Data were added to questionnaire records during the logic edits, which filled in some items where data were missing or incomplete using other information on the same questionnaire or from other related data sources. The four main types of edits that occurred during the logic edits are described in further detail below:

- *Editing data by ratio adjusting the original value.* Data were ratio adjusted in some circumstances so that items were consistent with one another. For example, if the counts of teachers by race on School Questionnaire item 2-2 did not sum to the reported total number of teachers in item 2-1c, then the ratio of each race to the total enrollment was preserved, but the actual counts were adjusted to be consistent with the total reported teacher count in item 2-1c.
- *Editing data using other items on the same NTPS questionnaire record.* Based on entries from related items on the same NTPS questionnaire record, assumptions were made about how the respondent might have answered items. For example, item 1-4 on the Teacher Questionnaire asks how much the respondent works as a teacher in any of grades K–12 or comparable ungraded levels at this school. If this item was left blank by the respondent, and the respondent indicated that his or her contract requires working at least 35 hours during a typical full week, then item 1-4 was marked “full time” by the logic edit.
- *Editing data using related items from an associated NTPS questionnaire.* Information from an associated NTPS questionnaire record was sometimes used to add data to the applicable record during the logic edits. For example, item 4-3 on the Principal Questionnaire asks how many days per year the principal is required to work under his or her contract. If this item was left blank by the respondent, then the response to School Questionnaire item 1-5, the number of days in the school year, was used to add data to the principal record.
- *Editing data using information from the sample file.* Information from the sample file was sometimes used to add data to the applicable record during the logic edit. For example, item 4-4a on the School Questionnaire asks whether the school participates in the National School Lunch Program. If the respondent left this item blank and the sample file indicated that the school participates in the National School Lunch Program, then item 4-4a was marked “Yes” by the logic edit.

Values filled in by the logic edits were valid responses because they were within the range of acceptable values that was set prior to the administration of NTPS and they were consistent with the respondent's answers to related items.

The only records that were put through the series of computer edits were those classified as interviews in the preliminary ISR. The tables in “Appendix H. Changes Made to Variables During the Computer Edit, by Data File” show the number of edit changes made to entries for each of the variables within each data file. These changes are summarized in table 35 below.

Table 35. Summary of changes made to variables in the consistency and logic computer edits, by data file: 2015–16

Data file	Total number of complete interviews (ISR = 1)	Total number of variables in questionnaire	Number of variables changed during edits by percent of records on which the variable was changed			
			None	1–15 percent	16–30 percent	More than 30 percent
Public school principal	5,711	94	56	36	0	2
Public school	5,765	144	33	65	40	6
Public school teacher	31,945	332	193	122	4	13

NOTE: At the end of data collection, 146 items were on the public school file. Two items were dropped in postprocessing, bringing the total to 144.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Documentation Data Files,” 2015–16.

Final Interview Status Edit

After the range checks, consistency edits, blanking edits, and logic edits were completed, the records were put through an edit to make a final determination of whether the case was eligible for the survey and, if so, whether sufficient data had been collected for the case to be classified as a completed interview. A final ISR value was assigned to each case as a result of this edit.

1. Principal Questionnaire (Form NTPS-2)

A case was classified as **out-of-scope** (ISR = 3) if one of the following was met:

- The school named on the questionnaire label was classified as out-of-scope.
- The school had no principal or administrator.

A case was classified as an **interview** (ISR = 1) if all of the following were met:

- Neither of the conditions for out-of-scope cases was met.
- The respondent reported the total number of years served as a principal of his or her current school as well as any other school (item 1-5, P0104), or the respondent reported the total number of years served as principal at the school where she or he is currently principal (item 1-6, P0105).
- There were valid entries in at least two of these five items:
 - licensure or certificate (item 1-9, P0108);
 - gender (item 6-1, P0900);
 - Hispanic origin (item 6-2, P0901);
 - race (item 6-3, P0902–P0906); and
 - year of birth (item 6-4, P0907).

- There were data in at least 10 percent of the remaining items (nine items for the Principal Questionnaire).

A case was classified as a **noninterview** (ISR = 2) if an eligible case did not meet the requirements to be an interview case.

2. School Questionnaire (Form NTPS-3)

A case was classified as **out-of-scope** (ISR = 3) if one of the following was met:

- The school named on the questionnaire was not in operation during the 2015–16 school year.
- The school did not serve students in any of grades 1–12 or comparable ungraded levels.
- The institution named on the questionnaire was not a public school.

A case was classified as an **interview** (ISR = 1) if all of the following were met:

- None of the conditions for out-of-scope cases were met.
- The grades(s) offered at the school were reported (item 1-1, S0100–S0114).
- The K–12 student enrollment was reported and greater than 0 (item 1-2, S0115).
- The type of school was reported (item 1-6, S0120).
- The number of teachers working at the school was reported (the number of full- and/or part-time teachers was reported in item 2-1a-b, S0200 and/or S0201, or the number of total teachers was reported in item 2-1c, S0202).
- There were data in at least 10 percent of the remaining items (14 items on the School Questionnaire).

A case was classified as a **noninterview** (ISR = 2) if an eligible case did not meet the requirements to be an interview case.

3. Teacher Questionnaire (Form NTPS-4)

A case was classified as **out-of-scope** (ISR = 3) if one of the following was met:

- The school from which the teacher was sampled was classified as out-of-scope by the screener instrument.
- The teacher no longer worked at the school named on the questionnaire (e.g., he or she transferred to another school, left teaching, retired, or was deceased).
- The teacher did not teach any of grades K–12 (e.g., he or she taught prekindergarten only).
- The person named on the label was a short-term substitute teacher, student teacher, or teacher's aide.
- The person named on the label was not a teacher.
- The person named on the questionnaire label had never worked at the school.
- The person named on the questionnaire worked at the school but did not teach any classes (e.g., he or she was an assistant principal, counselor, or librarian).
- The teacher moved out of the United States.

A case was classified as an **interview** (ISR = 1) if all of the following were met:

- None of the conditions for out-of-scope cases were met.
- The respondent reported either his or her position at the school (item 1-1, T0100) or his or her full- or part-time teaching status in the school (item 1-4, T0103).

- At least one grade level of students taught by the respondent was reported (item 2-1, T0200–T0214).
- The respondent reported his or her main teaching assignment field (item 2-4, T0217 or T5217).
- The respondent reported either the year that he or she began full- or part-time teaching at the elementary or secondary level (item 1-7, T0108) or the total number of years he or she worked as a full- or part-time teacher at the elementary or secondary level (item 1-9, T0110).
- The respondent reported whether he or she had a college degree (item 3-1a, T0300; item 3-2a, T0312; or item 3-3, T0317–T0336).
- There were valid entries in at least four of the following eight items:
 - gender (item 8-11, T0924);
 - Hispanic or Latino origin (item 8-13, T0928);
 - race (T0929–item 8-14, T0933); and
 - year of birth (item 8-15, T0534).
- There were data in at least 10 percent of the remaining items (35 items for the Teacher Questionnaire).

A case was classified as a **noninterview** (ISR = 2) if an eligible case did not meet the requirements to be an interview case.

The preliminary ISR and final ISR counts for each data file and the percentage of change for each ISR classification are shown in table 36.

Table 36. Preliminary and final interview status recode (ISR) counts and percentage change, by data file: 2015–16

Data file	Sample size	Preliminary ISR			Final ISR			Percent change in ISR		
		Inter-views	Non-inter-views	Out of scope	Inter-views	Non-inter-views	Out of scope	Inter-views	Non-inter-views	Out of scope
Public school principal	8,300	5,734	2,291	275	5,711	2,314	275	-0.40	1.00	0.00
Public school	8,300	5,767	2,262	271	5,765	2,262	273	-0.03	0.00	1.50
Public school teacher	48,987	32,595	14,191	2,198	31,945	14,784	2,258	-1.99	4.18	2.73

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Documentation Data Files,” 2015–16.

After the final ISR edits, there were still several cases with “not answered” values on the data files for some variables. Values were created for these items in the next step of the processing—imputation.

Imputation Procedures

During the computer edit stage of data processing, extraneous entries were deleted in situations where skip patterns were not followed correctly, and the “not answered” (.n) code was assigned to the items that should have been answered but were not. In addition, some data were added or modified based on other items on the same or an associated NTPS questionnaire record. The remaining “not answered” items were eligible for imputation after the computer edit stage of processing was complete. NTPS is a fully imputed survey, meaning that all “not answered” items that remained after the computer edits were filled with data during imputation.

In order to fill “not answered” items with data, questionnaires were put through an imputation stage of processing during which two main approaches were used. In one approach, “hot deck” imputation, data

were imputed from items found on questionnaires of the same type that had certain characteristics in common. These records are called “donor records.”

If the donor, or hot deck, imputation was unsuccessful in finding an appropriate donor, the second method of imputation was applied. The second method is known as mean or mode imputation, during which data are imputed from the mean or mode of data found on questionnaires of the same type among respondents who have certain characteristics in common (“donor groups”). This mean and mode imputation was implemented only as a final method of imputation and on an as-needed basis.

When a missing item was imputed from a donor record and the donor answered using the “other” option, the write-in “please specify” portion was not imputed. In addition, none of the write-in items (e.g., open-ended items) were imputed from donor records. Many of the write-in items ask for information that is very specific to each respondent. For instance, items 5-3a and 5-3b on the Teacher Questionnaire are open-ended write-in items that ask information about the respondent’s occupation during the previous school year, such as what the specific occupation was and what the most important activities or duties were at that job. Items such as these were not imputed and were left unanswered on the final data files (i.e., given a value of -9 for missing data).

Once the imputation stage was complete, there were no more unanswered items other than the write-in items (e.g., open-ended items) that are not imputed. At this point, Census Bureau analysts performed checks on the imputed data to make sure that they were consistent with other data on the same record. For a small number of cases where imputed data were either inconsistent with other data on the same record or appeared to be outlier data, analysts adjusted the imputed data during a postimputation data review process.

Creating Imputation Flags

Flags that were used in the imputation stage of processing were different from those used for the computer edits and were in the format of `f_[sourcecode] = (value of 0, 7, 8, or 9)`. The definitions for each imputation flag used in the 2015–16 NTPS are described in exhibit 10.

Exhibit 10. Imputation flags created in processing: 2015–16 NTPS questionnaires

Processing step	Flag variable	Flag values and definitions
Imputation specs	f_[source code] =	0 Data reported. Not imputed.
		7 Item was imputed by using data from the record for a similar case (donor).
		8 Item was imputed by using the mean or mode of data for groups of similar cases.
		9 Data value was adjusted during analysts' postimputation review of data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School, Public School Principal, Public School Teacher, Restricted-Use Data Files," 2015–16.

The imputation flags are included on the restricted-use data files. By looking at the flag values, data users are able to identify which items were imputed and how the imputations were performed. The data user can use this imputation flag to decide whether or not to include imputed data in his or her analysis and which types of imputed data to employ.

Hot Deck Imputation

During hot deck imputation, responses were added to the missing record by establishing a donor record and then basing imputation on data found within the donor record. Donors were selected based on their answers to specified items called "matching variables." If two respondents had similar information in the selected matching variables, then it was assumed that they were comparable and that imputation of one data item from the other was reasonable.

The matching variables used to establish donor relationships were selected based on the type of data the donor would supply to the record undergoing imputation. For example, since a respondent's answer to a given item may be influenced by the school's enrollment and the proximity of the school to a metropolitan center, these variables were used to find another respondent in a school with similar characteristics.

Each item on each questionnaire was assigned a group of matching variables along with a routine describing the hierarchy of importance of each of the matching variables in determining an appropriate donor. The matching variables were chosen and ordered to ensure that the donors chosen were the most similar to the record with the unanswered data and therefore the best donors possible. All public teacher donor records needed to be from the same state as the record with missing data.

For example, on the Principal Questionnaire, item 6-4 asks for the principal's birth year. If the respondent left this item blank, then the most important variable in predicting its value would be the number of years as a principal in any school (YEARPRIN), followed by highest degree the principal earned (DEGREE), followed by the grade levels offered by the school (NLEVEL). Therefore, the ordered matching variables were YEARPRIN, DEGREE, and NLEVEL.

However, item 3-1 concerns the frequency at which a number of problems occur at the school, an area in which the number of years as a principal or highest degree earned may not be useful predictors. Instead, the grade levels offered by the school (NLEVEL) would be the most important indicator, followed by the type of school at which the respondent served as principal (TYPE15) and the proximity of the respondent's school to a metropolitan center (URB). Therefore, the ordered matching variables for this item would be NLEVEL, TYPE15, and URB. The tables in "Appendix I. List of Matching Variables for the 2015–16

NTPS” show the complete list of matching variables used during 2015–16 NTPS hot deck imputation for each data file, along with their definitions and items for which they were used as matching variables.

The matching variables of the donor records had to perfectly match those of the record undergoing imputation. When there were not enough donor records within any given stratification cell of perfectly matched matching variables, the matching variable(s) of least importance were dropped, and the imputation program began a new search for a donor record based upon the subset of matching variables established as variable(s) were dropped in sequence.

As mentioned, for the teacher file all donor records needed to be from the same state as the record with missing data; therefore, state could never be dropped when searching for a donor. If the matching variables were reduced to only state and no donor was found, then the value was imputed based on the mean or mode of matching groups of respondents. On the principal and school files, state was not used as a matching variable. Matching variables that were of equal importance on the principal and school files as compared to state on the teacher file were varied and included (but were not limited to) type of school, urbanicity, and the grade levels offered at that particular school.

Once the donor relationship was established, the donor record provided data items either directly or indirectly to the imputed record. Directly meant that the donor’s response to an item was imputed to the record undergoing imputation; this occurred most frequently with categorical items. Indirectly meant that a combination of donor’s replies, most commonly a ratio, was used to derive a response for the record undergoing imputation. Eight main types of commonly used direct and indirect donor relationships were defined and used during hot deck imputation, and these are described in further detail below:

- *Simple imputation.* During the most basic type of imputation, known as simple imputation, the missing item was imputed directly from that item on the donor record. For example, item 1-8 on the School Questionnaire asks if the school has a library media center. If this item was still unanswered upon entering the imputation stage of data processing, then item 1-8 was imputed with the response from the donor record and flagged accordingly.
- *Simple imputation for multiple items.* Simple imputation for multiple items was an expansion of simple imputation, where a series of missing items was imputed directly from those items on the donor record. For example, item 2-2 on the Principal Questionnaire asks a series of questions about the level of influence the principal has over policies and practices at the school. The item has seven parts, a through g, which are setting performance standards, establishing curriculum, determining the content of in-service professional development programs for teachers, evaluating teachers, hiring new full-time teachers, setting discipline policy, and deciding how the school budget will be spent. If any or all parts of this item were still unanswered upon entering the imputation stage of data processing, then they were imputed with the response from the same donor record and flagged accordingly.
- *Simple imputation with blanking edit, then simple imputation.* Items requiring simple imputation with blanking edits, then simple imputation had two parts. The first part was a simple imputation, where the initial missing item (an item with a “Yes/No” response, referred to as a “screener” item) was imputed using simple imputation, directly from that item on the donor record. Then, depending on the imputed response, the subsequent item(s) were either imputed using simple imputation (when “Yes” is imputed to the screener item) or blanked (if “No” is imputed to the screener item). This type of imputation occurs for items where this skip pattern is present. Items following a different skip pattern likely fell into the “complex imputation” donor relationship described later in this section.

For these items, there were always two donors established. The first donor was used when both parts (the screener portion and the subsequent items) of the imputed item were missing. The second donor was used when the respondent answered the screener item with a “Yes” response, but the subsequent item(s) were missing and needed to be imputed. The method of imputation for this second donor was simple imputation.

For example, item 2-5a on the School Questionnaire asks if there were teaching vacancies at the school. If the response to 2-5a is “Yes,” then item 2-5b asks how easy or difficult (6 point scale) it was to fill the vacancies this school year for several teaching field types. This item has 13 parts, which are general elementary, special education, English or language arts, social studies, mathematics, biology or life sciences, physical sciences, English as a Second Language, foreign languages, music or arts, career or technical education, and other. If both 2-5a and 2-5b were unanswered upon entering the imputation stage of data processing, then item 2-5a was imputed with the response from the donor record and flagged accordingly first. If “No” was imputed to 2-5a, then all parts of item 2-5b were assigned the valid skip code. However, if “Yes” was imputed to 2-5a, then all parts of item 2-5b were imputed with the responses from the same donor record and flagged accordingly.

- *Ratio imputation.* During ratio imputation, the missing item was imputed using the donor’s ratio of that item to some predetermined related item (“ratio variable”) and applying it to that same related item on the record being imputed. For example, item 4-8 on the School Questionnaire asks how many designated Title I teachers were teaching at the school around the first of October. If this item was still unanswered upon entering the imputation stage of data processing, then it was imputed by applying the ratio of the number of Title I teachers (item 4-8) to the total number of full- and part-time teachers (item 2-1c) from the donor record to the total number of full- and part-time teachers (item 2-1c) on the record undergoing imputation and flagged accordingly.
- *Ratio imputation for multiple items.* Ratio imputation for multiple items was an expansion of basic ratio imputation, where a series of missing items was imputed using the donor’s ratio of each of those items to some predetermined related item (ratio variable) and applying these ratios to that same related item on the record being imputed. For example, item 4-2b on the School Questionnaire asks how many students with disabilities spend various portions of their day (all day, most of the day, some of the day, little or none of the day) in a regular classroom. The item has four parts. If one or several parts of this item were still unanswered upon entering the imputation stage of data processing, then they were imputed by applying the ratio of the number of students who spend the specified portion of their day in a regular classroom (item 4-b (1), (2), (3), and (4)) to total student enrollment (item 1-2) from the donor record to the total student enrollment (item 1-2) on the record undergoing imputation and flagged accordingly.
- *Simple imputation with blanking edit, then ratio imputation.* Items requiring simple imputation with blanking edit, then ratio imputation had two parts. The first part was a simple imputation, where the initial missing item (usually an item with a “Yes/No” response, referred to as a screener item) was imputed using simple imputation, directly from that item on the donor record. Then, depending on the imputed response, the subsequent item(s) were either imputed using ratio imputation (when “Yes” was imputed to the screener item) or blanked (if “No” was imputed to the screener item). This type of imputation occurred for items where this skip pattern was present. Items following different skip patterns likely fell into the complex imputation donor relationship.

For these items, there were always two donors. The first donor was used when both parts (the screener portion and the subsequent items) of the imputed item were missing. The second donor was used when the respondent answered the screener item with a “Yes” response, but the

subsequent item(s) were missing and needed to be imputed. The method of imputation for the second donor was ratio imputation.

For example, item 4-1a on the School Questionnaire asks if any of the students enrolled in the school has an Individual Education Plan (IEP) because they have special needs. If the response to 4-1a is “Yes,” then item 4-1b asks how many students have an IEP because they have special needs. If both 4-1a and 4-1b were unanswered upon entering the imputation stage of data processing, then item 4-1a was imputed with the response from the donor record and flagged accordingly first. If “No” was imputed to item 4-1a, then item 4-1b was assigned the valid skip code. However, if “Yes” was imputed, then item 4-1b was imputed by applying the ratio of the number of students with an IEP (item 4-1b) to total student enrollment (item 1-2) from the donor record to the total student enrollment (item 1-2) on the record undergoing imputation and flagged accordingly.

- *Ratio imputation with blanking edit, then ratio imputation.* Items requiring ratio imputation with blanking edit, then ratio imputation have two parts. The first part was a ratio imputation, where the initial missing item (referred to as a screener item) was imputed using the donor’s ratio of that item to some predetermined related item (ratio variable) and applying it to that same related item on the record being imputed. Then, depending on the imputed response (whether a value of 0 or a value greater than 0 was imputed), the subsequent item(s) were either imputed using ratio imputation (when a value greater than 0 was imputed to the screener item) or blanked (if a value of 0 was imputed to the screener item). This type of imputation occurred for items where this skip pattern was present. Items following different skip patterns likely fell into the complex imputation donor relationship.

For these items, there were always two donors. The first donor was used when both parts (the screener portion and the subsequent items) of the imputed item were missing. The second donor was used when the respondent answered the screener item with a response greater than 0, but the subsequent item(s) were missing and needed to be imputed. The method of imputation for the second donor was ratio imputation.

For example, item 2-6a on the School Questionnaire asks how many teachers were newly hired by the school around the first of October. If the response to 2-6a is greater than 0, then item 2-6b asks how many of the newly hired teachers were in their first year of teaching. If both 2-6a and 2-6b were unanswered upon entering the imputation stage of data processing, then item 2-6a was imputed by applying the ratio of newly hired teachers (item 2-6a) to the total number of full- and part-time teachers (item 2-1c) from the donor record to the total number of full- and part-time teachers (item 2-1c) on the record undergoing imputation. If a value of 0 was imputed to 2-6a, then item 2-6b was assigned the valid skip code. However, if a value greater than 0 was imputed to 2-6a, then item 2-6b was imputed by applying the ratio of newly hired first-year teachers (item 2-6b) to total newly hired teachers (item 2-6a) from the donor record to the total newly hired teachers (item 2-6a) on the record undergoing imputation and flagged accordingly.

- *Complex imputation.* Complex imputation was used when the imputation could not be accomplished using one of the other seven donor relationship types. In these cases, it was simply because, while the general methodology might fit one of the other donor relationships, the skip pattern might have been the reverse (e.g., the subsequent items are imputed if the screener is imputed as “No” rather than “Yes”). In other cases, the imputation was deemed “complex” due to its level of difficulty (e.g., too many steps in the imputation process), and therefore separate imputation programs had to be drafted.

Finally, to prevent a single record from having an undue impact on the data, a record could only be used as a donor a maximum of five times.

Data imputed during the hot deck imputation were given an imputation flag of value “7.”

Mean and Mode Imputation

During mean and mode imputation, responses were imputed by establishing groups of similar questionnaires (donor groups) and then imputing for a particular item by substituting either the mean (the average of all the responses for that item) or mode (the response that occurs most frequently) of the same data item within that established donor group. Donor groups were selected based on respondents’ data for specified items called “matching variables.” If several respondents answered the selected matching variables in the same manner, then it was assumed that imputation of one data item from the mean or mode of the cases within the similar group was reasonable. The mode of responses within a donor group was used for the categorical items, while the mean was used for continuous items.

The matching variables used to establish donor groups for mean and mode imputation were the same matching variables used during the hot deck imputation. However, if a donor group could not be established even after collapsing each matching variable completely, the mean and mode imputation would drop the least important matching variable(s) in the established matching variable hierarchy and look for a donor group until one was established and the missing data item was imputed.

If a large number of records underwent mean or mode imputation for the same item within a donor group, a different statistical approach was applied as to preserve the distribution of overall responses. This was done at the discretion of the supervisory analyst. Data imputed during the mean and mode imputation were given an imputation flag of value “8.”

Postimputation Processing

Following imputation, the computer edits were rerun, and any remaining data issues were resolved. These edits were used to ensure that the values imputed were within acceptable ranges and were consistent with other items on the same questionnaire. In a very small number of cases, an imputed value was blanked out by one of these computer edits due to inconsistency with other data within the same questionnaire or because it was out of the range of acceptable values. In these situations, Census Bureau analysts looked at the items and tried to determine an appropriate value based on a number of factors. Census Bureau analysts reviewed the following:

- the original image of the questionnaire to see if the respondent had made any notes in the margin that might provide insight;
- other items within the same record with related information;
- similar cases to get an understanding of what the respondent might have answered; and/or
- means and modes of similar subsamples.

When analysts changed or added data for any reason during the postimputation data review, an imputation flag with a value of “9” was set to indicate this. Once this analyst review was complete, any items that were imputed at a rate greater than 15 percent were analyzed as part of the item bias analysis (see chapter 6 for details about nonresponse bias analysis).

Imputation Summary Tables

The number of source codes (specific items) that were imputed for a given percentage of records during each imputation method is summarized in tables 37 through 39. For example, during hot deck (donor) imputation, 92 survey items were imputed for between 1 and 15 percent of public school principal items.

The first column, “Not imputed for any record,” includes items that are not eligible for imputation (e.g., “please specify” write-in items, respondent information not included on the final data files, time to complete survey) as well as items that required no imputation at one or both of the stages.

The tables in “Appendix J. Imputation Changes to Variables, by Data File” show the number of imputations applied during each method of imputation to each source code, by data file.

Table 37. Number of source codes imputed, by percentage of records receiving imputation and type of imputation for public school principals: 2015–16

Type of imputation	Not imputed for any record	Imputed for 1–15 percent of the records	Imputed for 16–30 percent of the records	Imputed for more than 30 percent of the records
Donor	2	92	0	0
Mean or mode	86	8	0	0
Manual	91	3	0	0
All types	1	93	0	0

NOTE: Every question item and data entry in the questionnaires have a corresponding source code. The source codes are the variable names for these data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Restricted-Use Data File,” 2015–16.

Table 38. Number of source codes imputed, by percentage of records receiving imputation and type of imputation for public schools: 2015–16

Type of imputation	Not imputed for any record	Imputed for 1–15 percent of the records	Imputed for 16–30 percent of the records	Imputed for more than 30 percent of the records
Donor	22	121	1	0
Mean or mode	130	14	0	0
Manual	131	13	0	0
All types	22	121	1	0

NOTE: Every question item and data entry in the questionnaires have a corresponding source code. The source codes are the variable names for these data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Restricted-Use Data File,” 2015–16.

Table 39. Number of source codes imputed, by percentage of records receiving imputation and type of imputation for public school teachers: 2015–16

Type of imputation	Not imputed for any record	Imputed for 1–15 percent of the records	Imputed for 16–30 percent of the records	Imputed for more than 30 percent of the records
Donor	86	246	0	0
Mean or mode	236	96	0	0
Manual	294	38	0	0
All types	66	266	0	0

NOTE: Every question item and data entry in the questionnaires have a corresponding source code. The source codes are the variable names for these data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Teacher Restricted-Use Data File,” 2015–16.

Preliminary Data Products

After all stages of imputation were completed and the blanking and consistency edits were run once again, the data were split into data files by questionnaire type (i.e., Principal, School, and Teacher). These three files were used as the source files for the final documentation files.

The documentation files included all variables, including frame variables, survey variables, created variables, extant data, weighting variables, and imputation flags.

For the 2015–16 cycle of NTPS, the National Center for Education Statistics (NCES) made the decision to incorporate extant data onto the final NTPS data products. The main purpose was to showcase various school-level attributes from multiple sources all on one data file for the convenience of any future analysis and research. The ability to provide various school information without having to place the questions on NTPS questionnaires meant that respondent burden was reduced.

The extant data came from three main sources—the Civil Rights Data Collection (CRDC),¹⁸ *EDFacts*,¹⁹ and the Common Core of Data (CCD).²⁰

For more information about the procedures followed for gathering, processing, and appending extant data on NTPS files, please see “Appendix K. Extant Data Procedures for the 2015–16 NTPS.” For a list and description of the extant variables used, please see “Appendix L. Description of Frame, Created, and Derived Variables.”

The documentation files were used to run the unit and item response rates and contain all sampled cases and the base weights in addition to the final weights.

Public School Principal (doc_ntps2)

The principal final documentation file includes all items from the Principal Questionnaire (Form NTPS-2) as well as frame variables, created variables, extant data, weighting variables, and imputation flags.

¹⁸ CRDC has been conducted on behalf of the U.S. Department of Education since 1968. As the name indicates, a major function of CRDC is to provide data on vital education and civil rights issues for American public schools. For NTPS, six variables were added from the 2013–14 CRDC. These variables provided information pertaining to alternative schools, magnet programs, gifted/talented programs, and Advanced Placement (AP) or International Baccalaureate (IB) participation, <https://www2.ed.gov/about/offices/list/ocr/data.html?src=rt>.

¹⁹ *EDFacts* is an initiative put forth by the U.S. Department of Education that seeks to merge performance data from state education agencies with other sources such as financial grant information. Having access to the state-level school and district data on a national level not only reduces respondent burden but also allows these open, robust data sources to be placed at the forefront for any educational policymaking, whether that be at the federal, state, or local level. One major area *EDFacts* specializes in is with graduation rates across different demographic characteristics such as race, ethnicity, socioeconomic status, and limited English proficiency. Overall rates as well as the cohort sizes were copied from the 2014–15 *EDFacts* to NTPS, <https://www2.ed.gov/about/inits/ed/edfacts/index.html>.

²⁰ CCD is an annual set of five surveys distributed to state and local agencies that in turn collect data from approximately 100,000 schools and 18,000 school districts. CCD has been utilized in the past on Schools and Staffing Survey (SASS) administrations, and this survey cycle was no different. While previously used primarily as a source for the frame and occasionally as a reference on data processing, this cycle brought about using additional CCD variables as a replacement for a set of questions on NTPS. The 2015–16 NTPS was designed to omit asking for the counts of students by race on the school questionnaire, which had been on previous SASS cycles, because these data exist on CCD. Comprehensive male, female, prekindergarten, and race counts were added from the 2014–15 CCD to NTPS. This set of variables was slightly different in that, instead of a direct copy with minimal programming, additional variables were created using the aforementioned CCD variables. The end result on the NTPS final files was variables that estimated the percentage of students at a particular school that were male, female, or of a particular race or ethnicity, <https://nces.ed.gov/ccd/aboutCCD.asp>.

Public School (doc_ntps3)

The school final documentation file includes all items from the School Questionnaire (Form NTPS-3) as well as applicable frame variables, created variables, extant data, weighting variables, and imputation flags.

Public School Teacher (doc_ntps4)

The public school teacher final documentation file includes all items from the Teacher Questionnaire (Form NTPS-4) as well as applicable frame variables, created variables, extant data, weighting variables, and imputation flags.

The documentation files are the source of the restricted-use files. The restricted-use files contain only the respondents' records; processing variables and most sampling variables were removed. In addition, the documentation files and restricted-use files were altered to meet the requirements of data nondisclosure prior to release.

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Chapter 8. Weighting and Variance Estimation

This chapter describes the weighting procedure used for 2015–16 National Teacher and Principal Survey (NTPS). This procedure requires the final weights to have the sample estimates reflect the target survey population when analyzing the data. In addition, this chapter describes the variance estimation procedures, which include the methods of estimating sampling errors for weighted estimates in NTPS using the replicate weights.

Weighting

This section describes the weighting processes for each NTPS respondent. The general purpose of weighting is to scale up the sample estimates to represent the target survey population. The steps for weighting various types of respondents are largely the same. The initial basic weight (the inverse of the sampled unit's probability of selection at the time of initial selection) is used as the starting point, then a sampling adjustment factor is applied to account for any additional circumstances impacting the probability of selection (e.g., merged schools or split schools), which produces the base weight. Next, a nonresponse adjustment factor is calculated and applied using information known about the respondents and nonrespondents from the sampling frame data. Finally, various ratio-adjustment factors are calculated and applied to the sample. The type and number of ratio-adjustment factors varies with each NTPS data file. However, in general, each adjusts the sample totals to frame totals in order to reduce sampling variability.

Most components of the weighting process employ weighting classes in the calculation of the weighting adjustments factors. Weighting classes allow for differential adjustment factors to be computed for the same weighting component through the creation of homogeneous groups. This technique is especially useful when the computed factors are presumed to differ substantially, such as when patterns of nonresponse vary across subpopulations. In subsequent sections, the formula for computing the particular weighting component is presented for each component of NTPS, along with a brief description of each component of the weight. When computations were done within weighting classes, or cells, such as nonresponse adjustments, the cells are described. Sometimes a cell did not have enough data to produce a reliable estimate, and was collapsed according to specified criteria. The most important variables were always collapsed last. The collapsing criteria are also described below for each component of NTPS.

The school weight is described first since it is the primary sampling unit. The principal weight is described next and is similar to the school weight; they differ only in how weighting cells are collapsed during the calculation of the nonresponse adjustment factors. The third section describes the teacher weight. In addition to using its own set of collapsed cells for the within school nonresponse adjustment, the teacher weight also adds a separate factor for teacher list nonresponse.

The distribution of the final weights from each file is provided in table 40 below.

Table 40. Distribution of final weights for NTPS interviewed cases, by respondent type: 2015–16

Respondent type	Weight at given percentile										Maximum	Mean
	Minimum	1st	5th	10th	25th	50th	75th	90 th	95th	99th		
All public schools	1.73	3.81	5.53	6.70	9.84	14.49	20.20	25.23	28.44	38.68	121.38	15.69
Traditional public schools	1.77	4.98	7.00	8.31	11.46	15.78	21.07	25.81	29.32	40.31	121.38	16.94
Public charter schools	1.73	2.64	3.72	4.25	5.49	6.95	9.19	11.98	14.35	19.91	29.71	7.75
All public school principals	1.61	4.00	5.76	6.98	9.88	14.54	20.42	25.60	29.09	39.55	104.38	15.83
Traditional public school principals	1.77	4.93	6.93	8.22	11.27	15.78	21.37	26.35	29.79	41.19	104.38	16.97
Public charter school principals	1.61	2.57	3.92	4.69	5.92	7.64	10.09	13.53	15.94	21.07	31.24	8.49
All public school teachers	7.00	33.62	41.30	47.22	75.20	104.19	130.50	158.88	176.41	204.81	818.33	104.83
Traditional public school teachers	15.54	39.06	47.67	64.33	84.98	109.17	134.38	162.18	178.95	206.52	818.33	111.54
Public charter School teachers	7.00	25.66	31.81	35.21	40.31	46.44	53.05	60.54	64.50	82.68	218.74	47.67

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School, Principal, and Teacher Data Files,” 2015–16.

School Weights

The final weight for the school data is the product of:

(Initial Basic Weight) and (Sampling Adjustment Factor) and (Nonresponse Adjustment Factor) and (First-Stage Ratio-Adjustment Factor) where:

Initial Basic Weight is the inverse of the probability of selection of the school at the time of selection.

Sampling Adjustment Factor is an adjustment that accounts for circumstances that affect the school’s probability of selection that are identified after the data collection has begun, such as a merger, duplication, or incorrect building-level collapsing (i.e., a junior high school and a senior high school merge to become a junior/senior high school). The collapsing described in chapter 4 is reflected in the initial basic weight, but any changes in the school collapsing described in chapter 4 (i.e., uncollapsing or additional collapsing of schools) are adjusted for in this step.

Nonresponse Adjustment Factor is an adjustment that accounts for total school nonresponse. It is the weighted (product of initial basic weight and sampling adjustment factor) ratio of the total eligible in-scope schools (interviewed schools plus noninterviewed schools) to the total responding in-scope schools (interviewed schools) within cells. The 2015–16 NTPS determined cell definitions by a procedure known as CHAID (Chi-squared Automatic Interaction Detection). The CHAID procedure determines an optimal set of cell definitions as explained below. The

resulting cells require no further collapsing. The cells used are as presented in table M-1 of appendix M. At this stage of the weighting process, noninterviewed and out-of-scope schools are assigned a weight of zero.

First-Stage Ratio-Adjustment Factor is a factor that adjusts the sample estimates to known final frame totals after all frame construction. Construction of the frame is described in chapter 4. Each interviewed and out-of-scope school is assigned to a *collapsed grade level by collapsed poverty* raking cell and a *collapsed grade level by collapsed locale* raking cell. A raking procedure brings the weighted total in each cell into agreement with the known frame totals across dimensions. Note that the input weight for frame totals includes both respondent and out-of-scope schools.²¹ For respondent schools, the input weight is the noninterview adjusted weight and for out-of-scope schools the input weight is the base weight.

School Weighting Adjustment Cells

Nonresponse Adjustment Factor

The school nonresponse adjustment factor and first-stage ratio-adjustments were computed within cells. The schools were classified into cells based on sampling frame data for the noninterview and first-stage ratio-adjustments. Nonresponse adjustments were determined using CHAID.

CHAID first examines the crosstabulations between each of the input fields and the outcome, and tests for significance using a chi-square independence test. If more than one of these relations is statistically significant, CHAID will select the input field that is the most significant (smallest p value). If an input has more than two categories, these are compared, and categories that show no differences in the outcome are collapsed together. This is done by successively joining the pair of categories showing the least significant difference. This category-merging process stops when all remaining categories differ at the specified testing level.

First-Stage Ratio-Adjustment Factor

Table 41 presents the raking cells and the numerator totals for the first-stage raking adjustment factors for the public schools and principals in the weighting process.

²¹ The frame includes schools that may be out of scope, so out of scope schools were added to the input to ensure the same types of schools were included in both stages of raking.

Table 41. First-stage adjustment cells for school, principal, and teacher weights: 2015–16

Table 41A. Grade level by collapsed poverty			
Cell A Value	Collapsed Grade Level	Collapsed Poverty	Totals
1	1 Elementary	1: Non high	36,050
2		2: High	15,550
3	2 Middle	1: Non high	10,953
4		2: High	3,411
5	3 High / Combined	1: Non high	22,597
6		2: High	5,567

Table 41B. Collapsed grade level by collapsed locale

Cell B Value	Collapsed Grade Level	Collapsed Locale Category	Totals
1	1 Elementary	1 – (City)	15,308
2		2 – (Suburb)	17,933
3		3 – (Town/Rural)	18,359
4	2 Middle	1 – (City)	3,699
5		2 – (Suburb)	5,136
6		3 – (Town/Rural)	5,529
7	3 High / Combined	1 – (City)	7,134
8		2 – (Suburb)	7,121
9		3 – (Town/Rural)	13,909

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), 2015–16

To reduce the variance that arises from the sampling of schools, we apply the first-stage ratio adjustment factor to adjust the sample estimates to known frame totals on the 2015–2016 NTPS universe.

Raking is an iterative process that adjusts sample estimates to totals from the sampling frame one dimension at a time until convergence occurs across all dimensions.

First, an adjustment factor is calculated by dividing the known control total for each of the 6 cells in table 41A by the weighted total of surveyed schools in that cell (the weight used includes the initial basic weight, the sampling adjustment factor, and the noninterview adjustment factor). That adjustment factor is applied to all schools in the cell.

Next, an adjustment factor is calculated by dividing the known control total for each of the 9 cells in table 41B by the weighted total of surveyed schools in that cell (the weight used is the weight from the previous step after the new adjustment factor has been applied).

This process continues by alternating back and forth between both tables until the results converge, that is, until there is agreement between the weighted sample totals and the frame totals for all 6 cells in table 41A and all 9 cells in table 41B within a very small tolerance.

During the raking, if any individual school's weight is more than eleven times greater than the mean of all the weights before raking begins, that school's weight is trimmed so that it is equal to eleven times the mean weight.

Principal Weights

The principal weighting was done the same way as the school weighting described above. The CHAID cells used for the principal noninterview adjustment are shown in table M-2 of appendix M. Since the response status for each of the principal surveys and the corresponding school surveys could be different, the weighting process was done separately for each questionnaire. The sum of the principal weights may be less than the sum of the school weights because some schools do not have principals. See chapter 6 for a discussion of school and principal interview status.

Teacher Weights

The final weight for public school teachers is the product of:

(Initial Basic Weight) and (School Sampling Adjustment Factor) and (Teacher List Nonresponse Adjustment Factor) and (Teacher-within-school Nonresponse Adjustment Factor) and (First-Stage Ratio-Adjustment Factor) and where:

Initial Basic Weight is the inverse of the probability of selection of the teacher at the time of selection.

School Sampling Adjustment Factor, as discussed above, is an adjustment that accounts for circumstances that affect the school's probability of selection that are identified after the data collection has begun, such as a merger, duplication, or incorrect building-level collapsing (i.e., a junior high school and a senior high school merge to become a junior/senior high school). The collapsing described in chapter 4 is reflected in the initial basic weight, but any changes in the school collapsing described in chapter 4 (i.e., uncollapsing or additional collapsing of schools) are adjusted for in this step.

Teacher List Nonresponse Adjustment Factor is an adjustment that accounts for teachers in schools that did not provide a list of its teachers and for which a vendor list was not available. It is the weighted (the product of the school initial basic weight and the school sampling adjustment factor) ratio of total eligible in-scope schools to the total in-scope schools providing teacher lists, computed within cells (see table M-3 of appendix M). As with other nonresponse adjustments, the cells were determined using CHAID.

Teacher-within-school Nonresponse Adjustment Factor is an adjustment that accounts for sampled teachers who did not respond to the survey. It is the weighted (product of all previously defined components) ratio of the total eligible teachers to the total eligible responding teachers computed within cells (see table M-4 of appendix M). CHAID was used to define the cells. At this stage of the weighting procedure, noninterviewed and out-of-scope teachers are assigned a weight of zero.

First-Stage Ratio-Adjustment Factor, as discussed above, is a factor computed at the school level that adjusts the sampled school's frame estimates to known final frame totals after all frame construction. Construction of the frame is described in chapter 4. Each interviewed and out-of-scope school is assigned to a *collapsed grade level by collapsed poverty* raking cell and a *collapsed grade level by collapsed locale* raking cell. A raking procedure is used to bring the weighted total in each cell into agreement with the known frame totals across dimensions.

The ***Teacher Adjustment Factor (TAF_i)*** is a factor computed at the teacher level that resolves any inconsistencies between the estimated number of teachers on the NTPS school and teacher data files. This factor represents the ratio of the final weighted number of teachers on the school data file to the weighted number of teachers on the teacher data file, within cells. Only interviewed schools and teachers were used to compute the TAF_i .

The teacher initial basic weights and subsequent factors are based on the school's FTE from the sampling frame. Therefore, the TAF_i not only resolves inconsistencies between the school and teacher files, but also implicitly adjusts the final teacher weights from an FTE to a headcount basis. Note that the data on the school file is more recent than the sampling frame; and the TAF_i also addresses this lag. The cells used for the TAF_i were determined through a CHAID analysis, where the CHAID will be unweighted and at the school level.

Teacher Weighting Adjustment Cells

Teacher List Nonresponse Adjustment Factor

Weighting cells for the teacher list nonresponse adjustment factor were determined by the CHAID procedure and are shown in table M-3 of appendix M.

Within School Nonresponse Adjustment Factor

Weighting cells for the within school nonresponse adjustment factor were determined by the CHAID procedure and are shown in table M-4 of appendix M.

First-Stage Ratio-Adjustment Factor

The weighting cells for the first stage ratio-adjustment factor for teachers are the same as for the first stage ratio-adjustment cells for schools and principals and are shown in table M-2 of the School weighting section of appendix M.

Teacher Adjustment Factor

The weighting cells for the public teacher adjustment factor were determined by the CHAID procedure and are shown in table M-5 of appendix M.

Variance Estimation

This section describes the variance estimation used for the 2015–16 NTPS, how the replicates were assigned, and how to use the replicate weights to compute variances.

Producing Replicate Weights

In surveys with complex sample designs, such as NTPS, direct estimates of sampling errors that assume a simple random sample will typically underestimate the variability in the estimates. The NTPS sample design and estimation included procedures that deviate from the assumption of simple random sampling, such as stratifying the school sample, oversampling new teachers, and sampling with differential probabilities.

The preferred method of calculating sampling errors to reflect these aspects of the complex sample design of NTPS is using replication. Replication methods involve constructing a number

of subsamples, or replicates, from the full sample and computing the statistic of interest for each replicate. The mean square error of the replicate estimates around the full sample estimate provides an estimate of the variance of the statistic. The replicate weights are used to estimate the variance of a statistic, Y , as given below:

$$\text{Variance } (Y) = \sum_{r=1}^n (Y_r - Y)^2$$

Where: Y_r = the estimate of Y using the r^{th} set of replicate weights
 n = the number of replicates

Replicate Weight Methodology for 2015–16 NTPS

For the 2015–16 NTPS, the replicates were assigned using a jackknife methodology. The 8,300 sampled schools were split into 4,150 variance strata, each consisting of a pair of sampled schools which are adjacent on the sorted sampling frame. These 4,150 variance strata were combined into 200 final variance strata (original strata 1, 201, 401, etc. are combined into final stratum 1, etc.). For each pair of sampled schools belonging to the identified final variance stratum, one has its weight doubled, the other has its weight zeroed out.

For example, to form replicate 1, one of the two schools in original stratum 1 is randomly chosen to have its weight doubled, while the other is assigned a zero weight. Then, one of the two schools in original stratum 201 is randomly chosen to have its weight doubled and the other is assigned a zero weight. This is repeated for each pair of schools belonging to final stratum 1. Each replicate then corresponds to 20 or 21 weight-doubled schools and 20 or 21 zero-weighted schools with schools outside that final variance stratum retaining their original weight. Weights are then determined using a recalculated nonresponse adjustment for each weighting cell. The trimming factors from the original weighting are used for the replicate weighting. This process is carried out for each final variance stratum to create 200 sets of replicate weights.

For more details on the creation of replicate weights, and for a discussion of the decision to replace the bootstrap methodology used in the Schools and Staffing Survey (SASS) with the jackknife methodology for NTPS, see the Westat report, “*Variance Estimation Plan for the First Cycle of the National Teachers and Principals Survey*,” by Rizzo, Marker, and Lohr (2016).

Applying Replicate Weights

Each NTPS data file includes a set of 200 replicate weights designed to produce variance estimates. Replicate weights are included in the data files and were created for each of the 200 samples using the same estimation procedures that were used for the full sample. The replicate weights were produced using a jackknife procedure.

As described above, the replicate weights are used to estimate the variance of a statistic, Y , as given below.

$$\text{Variance } (Y) = \sum_{r=1}^{200} (Y_r - Y)^2$$

Where: Y_r = the estimate of Y using the r^{th} set of replicate weights, and the number of replicate weights is 200 for NTPS.

The computation of sampling errors using these replicate weights can be done easily using one of the following software packages: WesVar Complex Sample Software, SAS, SUDAAN (Research Triangle Institute 2001), AM Statistical Software, or STATA 9.

- **WesVar**—The user needs to create a new WesVar data file by specifying the full sample weight variable and the replicate weight variables as defined above, and the replication method JK2. The replicate weights and the full sample weight can be highlighted and dragged to their appropriate place on the “New WesVar Data File” window. For more information, visit <https://www.westat.com/capability/information-systems-software/wesvar/wesvar-support>.
- **SAS**—The user needs to use the procedure PROC SURVEYPHREG, specifying the variance method as jackknife (varmethod = jk). The WEIGHT statement specifies the variable for the sampling weight for the full sample, and the REPWEIGHTS statement specifies the replicate weight variables. For more information, visit <https://support.sas.com/en/support-home.html>.
- **SUDAAN**—The user needs to specify the sample design as a “jackknife replication” design as well as specifying the replicate weight variables. Specifying the sample design (DESIGN = jackknife) is done in the procedure call statement (i.e., PROC DESCRIPT DESIGN = jackknife;). The specification of the replicate weights is done with the REPWGT statement (i.e., to produce the sampling errors for estimates from the Principal files use the statement: JACKWGTS PREPWT1-PREPWT200/ ADJJACK = 1;). For more information, visit www.rti.org/sudaan/.
- **AM**—The user needs to set the replicate weights along with the replication method using the right-click context menu in the variable list window. Once the “Set Replicate Weights” window is displayed, the replicate weights as identified above can be highlighted and dragged into the window. At the bottom of the window are four options for the replication method; jackknife should be selected. For more information, visit <https://am.air.org>.
- **STATA**—The use of replicate weights for the generation of standard errors is a new feature to STATA 9. First, the user needs to survey set the data (SVY SET) by defining: the full sample weight ([pw =]); jackknife weights (jkrweight[varlist, multiplier(1)]); variance estimation type (vce(jackknife)); and turning on the mse formula (mse). Once these parameters are set, users are able to call up the survey settings and tell STATA which type of standard errors to produce using the SVY jackknife command. SVY jackknife also allows users to specify the statistics to be collected (exp_list) and the command to perform (e.g., mean or tab). For more information, visit <https://www.stata.com/>.
- In addition to commercially-available software, open-source software, such as R, can be used to properly compute the standard error of survey estimates based on complex samples. For more information about using R to analyze complex survey data, visit the Comprehensive R Archive Network (<https://cran.r-project.org/>) and, under “Task Views,” select “Official Statistics and Survey Methodology.”

Public School and Public School Principal Replicates

For schools, the replicate weights were created using the jackknife methodology as described above. The replicate weights for the school file are SREPWT1 through SREPWT200.

Principal replicate weights were calculated in the same way as the school replicate weights. The replicate weights for the principal file are PREPWT1 through PREPWT200.

Public School Teacher Replicates

The teacher replicate weights were generated at the same time as the school replicate weights as part of the jackknife system. The replicate weights for the teacher files are TREPWT1 through TREPWT200.

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Chapter 9. Reviewing the Quality of NTPS Data

NCES program staff have the responsibility of ensuring that data files are acceptable for public release. Before files are released to the public, staff review the data for errors associated with edit, imputation, and weighting programs. This review utilizes a number of checks that include univariate, bivariate, and multivariate analyses that rigorously examine many aspects of the data without delaying timely release of the NTPS. The following are aspects of the datasets that were reviewed:

- general data quality;
- nonresponse;
- weighting; and
- external data checks.

General Data Quality

General data quality included a number of reviews that could be characterized as consistency edits. These checks involved an examination of the individual responses, patterns of response, and summary statistics for variables and files to ensure consistency within items, respondents, and files. In addition, key variables and cross tabulations of key variables were examined for distributions and relationships that were expected based upon prior administrations and other research, as a check of face validity. The specific data checks included edits, frequency counts, and reasonableness of data, as described below.

Edits. The validity of the skip patterns in the questionnaire was established for each NTPS questionnaire during the processing of the data; that is, U.S. Census Bureau analysts verified that each item in the questionnaire had the number of responses it should have if skip instructions were followed correctly. Quality checks on the edit specifications were performed and resulted in some corrections (which were treated as a form of imputation).

Frequency Counts. Unweighted record counts for every variable were examined from the restricted-use data files. Variables with out-of-range values or inconsistent values were identified, and these values were corrected.

Reasonableness of Data. Univariate, bivariate, and multivariate tabulations of key survey variables were obtained and compared to estimates from the 2011–12 Schools and Staffing Survey (SASS). Tabulations were reviewed to determine whether the basic relationships observed were within reasonable bounds, allowing for elements of change (such as random fluctuations in variance or a trend such as overall population growth in a state). The distributions and relationships observed were consistent with expectations.

Response Rates

Response rates were examined for possible bias, and any evidence of bias at the unit or item level was investigated. The details of this analysis are discussed in greater detail in chapter 6. The nonresponse analysis identifies the levels of possible bias, methods for addressing potential bias, and the reduction in bias as a result of these efforts.

Unit Nonresponse. Response rates were calculated at the unit level for all NTPS data files. (See chapter 6 for unit response rate information.) Nonresponding schools, principals, and teachers were studied in greater detail to identify patterns of unit nonresponse. (See chapter 6 for information on the nonresponse unit bias analysis.) The findings across public school respondents showed that weighting adjustments substantially reduced possible bias for national estimates, though many (characteristic-level) estimates

remained potentially biased. The weighted national response rates for questionnaires varied from 67.8 percent for the LOWEST questionnaire (Public School Teacher Questionnaire) to 72.5 percent for the HIGHEST questionnaire (Public School Questionnaire). The weighted overall response rate for the public teacher file, which multiplies the weighted public teacher response rate by the weighted Teacher Listing Form response rate, was 57.2 percent. The base-weighted response rate was below 50 percent for the following teacher characteristics used in nonresponse bias analysis: city, 75 or more teachers, and teacher status not reported.

Item Nonresponse. The extent of item nonresponse for each NTPS data file was determined. (See chapter 6 for item response rate information.) Items with high nonresponse rates are identified and reported in tables. Items with a response rate lower than 70 percent are footnoted as such in published tables.

Replicate Weight Checks

The review of the NTPS replicate weights consisted of reviewing the distribution of these weights. The following was done:

1. For each replicate, the weights were totaled. Each replicate total, as well as the average of those numbers, was checked against the full sample estimate. The standard error of the replicate totals was computed and checked for reasonableness.
2. A coverage analysis was performed for the public school final replicate weights using the school frame and the Common Core of Data (CCD). Normal distribution theory dictates that confidence intervals generated using the standard errors from the replicate weights (equal to the sample estimate plus or minus two standard errors) should cover the true population 95 percent of the time. This was checked empirically using these known frame variables as the true population values: the percentages of times the true population value was within the confidence intervals using the replicate standard errors was tabulated as a quality check on the replicate weights.

External Data Checks

One way to verify the external validity of NTPS data is to make comparisons to the survey universe, or frame, from which the sample is drawn. For public schools, principals, and teachers, the external file is an adjusted version of CCD, an annual administrative census of all public schools and public school districts in the United States and its territories.

The sampling frame is drawn from the universe data files, which pertain to 2 years prior to the field collection of NTPS data. Direct comparison can be made between the estimated count of the survey units and the corresponding CCD count. Such comparisons are made between the 2015–16 NTPS and the sampling frame year of the universe data files (2013–14).

Region Differences and Key Characteristic Differences

Public School Student Count Comparison (Public School Data File)

Comparisons of the number of public school students in NTPS were made to the frame year of CCD using the published student counts for 2013–14. Two comparisons were made, one to the CCD total number of students and the other to the CCD K–12 student count. The latter count does not include any prekindergarten students. The NTPS student counts are for K–12 grade levels, as long as the school reporting a kindergarten also has students in at least one of grades 1 to 12 or an equivalent ungraded level. While there are some public schools included in CCD’s definition of K–12 that may not have been

eligible for NTPS, in general, most public kindergarten students would be eligible as students in NTPS; therefore, it does not make sense to exclude kindergarten from the student counts when making the comparison to CCD.

Overall, the NTPS student count is about 1.3 percentage points higher than CCD's count of total K–12 students from 2 years prior to NTPS (table 42). There were 1,156,516 prekindergarten students included in CCD in 2013–14. Excluding the prekindergarten students brings the NTPS student count into a closer degree of “fit” than was achieved with the comparison of the number of schools in NTPS to CCD.

Table 42. Estimated number and percentage of public students in the 2015–16 NTPS compared to the 2013–14 CCD, by region and community type

Region and community type	2013–14 CCD public students ¹	2013–14 CCD public students less pre-K ²	2015–16 NTPS public students ³	NTPS as a percent of CCD public students less pre-K, 2013–14 count ⁴
1	2	3	4	5
Total	49,781,380	48,624,864	49,278,484	101.3
Region				
Northeast	7,918,321	7,764,256	7,670,412	98.8
Midwest	10,506,833	10,225,582	10,000,613	97.8
South	19,275,957	18,641,258	19,152,424	102.7
West	12,080,269	11,993,768	12,455,035	103.8
Community type				
City	15,136,075	14,728,874	14,931,542	101.4
Suburban	19,795,682	19,444,812	19,464,140	100.1
Town	5,690,813	5,525,934	5,715,589	103.4
Rural	9,158,810	8,925,244	9,167,212	102.7

¹ CCD 2013–14 Preliminary File: ccdsch13_combined.sas7bdat, Total Student Count.

² CCD 2013–14 Preliminary File: ccdsch13_combined.sas7bdat, Total Student Count without Total Prekindergarten Students.

³ NTPS, 2015–16 Public School File, Total Student Count, School Final Weight.

⁴ Calculated by dividing column 4 by column 3.

NOTE: CCD refers to the Common Core of Data. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), “Preliminary File,” 2013–14, ccdsch13_combined.sas7bdat; National Teacher and Principal Survey (NTPS), “Final Public School Frame and Public School Data Files,” 2015–16.

Public Charter School Comparison (Public School Data File)

Public charter schools in the 2015–16 NTPS were selected to be representative of the United States overall and at the regional level. Although the overall sample is representative at the national and regional levels only, among those states with a large number of public charter schools, the sample does attempt to be representative for those states. States with fewer public charter schools were all sampled together, and those states with no public charter schools were excluded from the sampling.

The comparisons that are shown in table 43 should not be interpreted as a critique of the sampling that was employed to draw a national sample. Rather, the comparisons show how closely the sample does or does not fit to subnational counts of public charter schools as identified in the CCD frame year.

Comparisons are made to the frame year from CCD, as opposed to the concurrent data collection year, because the sample as drawn from the frame year has no way to include any newly created schools. This is of particular importance for public charter schools, which are counted by CCD only after the state grants a charter for the school and permits the school to begin operation.

Table 43. Estimated number and percentage of public charter schools in the 2015–16 NTPS compared to the 2013–14 CCD, by region and community type

Region and community type	2013–14 CCD public charter schools ¹	2013–14 CCD public charter schools (published count) ²	2015–16 NTPS public frame CCD with adjustments ³	2015–16 NTPS public charter schools (CCD identified) ⁴	2015–16 NTPS unweighted public charter schools (CHAR FLAG = 1) ⁵	2015–16 NTPS public charter schools (CHAR FLAG = 1) ⁶	2015–16 NTPS estimate as a percent of CCD ⁷	2015–16 NTPS estimate as a percent of NTPS public frame ⁸	2015–16 NTPS estimate (CHAR FLAG = 1) as a percent of CCD ⁹
1	2	3	4	5	6	7	8	9	10
Total	6,934	6,465	6,754	6,073	819	6,923	87.6	89.9	99.8
Region									
Northeast	666	651	681	635	102	754	95.3	93.2	113.2
Midwest	1,547	1,402	1,430	1,377	161	1,433	89.0	96.3	92.6
South	2,180	2,019	2,136	2,003	298	2,570	91.9	93.8	117.9
West	2,541	2,393	2,507	2,059	258	2,166	81.0	82.1	85.2
Community type									
City	3,918	n/a	3,783	3,405	437	3,590	86.9	90.0	91.6
Suburban	1,786	n/a	1,768	1,620	233	1,913	90.7	91.6	107.1
Town	493	n/a	468	400	59	522	81.1	85.5	105.9
Rural	737	n/a	731	649	90	898	88.1	88.8	121.8

¹ CCD Preliminary File: ccdsch13 combined.sas7bdat, Charter School Indicator.

² CCD Published Count, 2013–14, Overview of Public and Secondary Schools and Districts: School Year 2013–14 (NCES 2015-345), Table 2, Column 6.

³ 2015–16 NTPS Public School Frame (CCD 2013–14 with Adjustments), Charter School Indicator.

⁴ NTPS, 2015–16, Public School File, Charter Schools Only, Final School Weight (first digit of SCHSTRAT = 4).

⁵ NTPS, 2015–16, Public School File, Total Unweighted Charter School Count (based on S0500 = 1 in preliminary benchmark tables).

⁶ NTPS, 2015–16, Public School File, Charter Schools Only, Final School Weight (based on S0500 = 1 in preliminary benchmark tables).

⁷ Calculated by dividing column 5 by column 2.

⁸ Calculated by dividing column 5 by column 4.

⁹ Calculated by dividing column 7 by column 2.

NOTE: CCD refers to the Common Core of Data. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), “Preliminary File,” 2013–14, ccdsch13_combined.sas7bdat; National Teacher and Principal Survey (NTPS), “Final Public School Frame and Public School Data Files,” 2015–16; “Overview of Public and Secondary Schools and Districts: School Year 2013–14” (NCES 2015-345).

Public School Teacher FTE Comparison (Public School Teacher Data File)

The comparison between the number of teachers in the NTPS Public School data file and the CCD State Nonfiscal Survey is an *approximation*, since the NTPS public school teacher data are collected and reported in headcounts of people rather than in the number of full-time-equivalent (FTE) positions reported to CCD (table 52). As an external check, this spots gross differences. There are several reasons why the number of teachers, approximated to FTE counts from the Public School Teacher data file, would differ from CCD State Nonfiscal Survey counts. CCD counts are statewide official tallies of teaching positions—both filled and unfilled, reported from a central agency, and unduplicated to account for teachers in multiple districts or schools. The teacher count from NTPS depends on the cooperation of the

schools to provide a list of all current teachers—not positions, the availability of a teacher list through clerical lookup, and commercial vendor data. No teacher list was available for approximately 16 percent of schools in the 2015–16 NTPS. The CCD count reflects some teaching positions for which the teacher is away from the school during the NTPS data collection, such as a teacher who is on maternity leave. The assumptions about the proportions of part-time to full-time teachers, which are used to adjust the headcount data to FTE positions, may be reasonable overall but may not be as accurate across school characteristics. When a public school in sample for NTPS is declared out-of-scope, such as when that school merged with another nonsampled school, the teachers who would have been or actually were sampled are also declared out-of-scope. While such factors affect relatively small proportions of the sampled cases, there may be a cumulative effect on the overall count of teachers.

The NTPS teacher estimate of the number of FTE teachers (table 44) was 9.2 percentage points higher overall than the frame year CCD count of FTE teachers. There could be several reasons for this. One potential reason is that the approximation of FTE teachers from NTPS is not as accurate as the reporting of FTE positions in CCD. Another possible reason is that the school collapsing operation (see chapter 4 for more information on the school collapsing and its effect on teacher counts) in NTPS may not have completely taken care of the overreporting of teachers in combined K–12 schools. State-level issues, including CCD–NTPS discrepancies, higher numbers of charter schools, school collapsing, and lower response rates, may also contribute to these discrepancies and increase when aggregated. A comparison of the NTPS teacher estimate from the teacher file to the NTPS teacher estimate from the school file produced a difference of 12.5 percentage points.

Table 44. Estimated number and percentage of full-time-equivalent (FTE) teachers in public schools in the 2015–16 NTPS compared to the 2013–14 CCD, by region and community type: 2013–14 and 2015–16

Region and community type	2013–14 CCD FTE public school teachers ¹	2015–16 NTPS FTE public school teachers (teacher file) ²	2015–16 NTPS public school teachers (headcount) (school file) ³	2015–16 NTPS public school teachers (approx. FTE) (school file) ⁴	NTPS school file as a percent of 2013–14 CCD ⁵	NTPS teacher file as a percent of NTPS school file ⁶
1	2	3	4	5	6	7
Total	2,964,586	3,698,607	3,348,815	3,237,555	109.2	87.5
Region						
Northeast	587,228	711,098	649,969	627,759	106.9	113.3
Midwest	644,838	779,939	719,763	686,531	106.5	113.6
South	1,232,454	1,456,856	1,322,038	1,294,439	105.0	112.5
West	500,063	750,714	657,046	628,826	125.7	119.4
Community type						
City	859,871	1,143,082	969,864	941,729	109.5	121.4
Suburban	1,147,551	1,460,934	1,298,957	1,254,130	109.3	116.5
Town	350,499	403,149	395,927	382,415	109.1	105.4
Rural	606,662	691,442	684,067	659,281	108.7	104.9

¹ CCD 2013–14 Preliminary File: ccdsch09_combined.sas7bdat.sas7bdat, Full-time Equivalency Count.² NTPS, 2015–16 Public School Teacher File, Full-time Equivalency Count, Teacher Final Weight.³ NTPS, 2015–16 Public School, Total Teacher Count, Final School Weight.⁴ NTPS, 2015–16 Public School, Sum of full-time teachers and half of the part-time teachers reported in the 2015–16 NTPS Public School Data File, Final School Weight.⁵ Calculated by dividing column 4 by column 2.⁶ Calculated by dividing column 3 by column 5.

NOTE: CCD refers to the Common Core of Data. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), “Preliminary File,” 2013–14, ccdsch13_combined.sas7bdat; National Teacher and Principal Survey (NTPS), “Final Public School Frame and Public School Data Files,” 2015–16.

References

- Mullens, J.E., and Kasprzyk, D. (1997). *The Schools and Staffing Survey: Recommendations for the Future* (NCES 97-596). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved July 7, 2019, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=97596>.
- Rizzo, L., Marker, D., and Lohr, S. (2016). *Variance Estimation Plan for the First Cycle of the National Teachers and Principals Survey*. Westat.
- U.S. Department of Education, National Center for Education Statistics. (2003). *NCES Statistical Standards* (NCES 2003-601). Washington, DC: U.S. Government Printing Office.

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Appendix A. Key Terms for NTPS

The following terms are defined as they apply to the 2015–16 National Teacher and Principal Survey (NTPS).

Base weight. This is the inverse of the initial probability of selection (termed the initial basic weight) including adjustments to the probability of selection due to schools determined to be splits or mergers during data collection operations. These adjustments to the initial probability of selection are called the sampling adjustment factor. The base weight is defined as the product of the initial basic weight and the sampling adjustment factor.

Bureau of Indian Education (BIE) school (see “School”). Meets all school criteria; operated by or under contract with BIE; reported as a BIE school by the state education agency and/or by BIE; offers services to American Indian students. BIE schools may include day schools, boarding schools, cooperative schools, and contract schools.

Career Technical Center (CTC). An alternative school that offers organized educational activities with a sequence of courses that provides students with the academic and technical knowledge and skills they need to prepare for further education and for careers (other than careers requiring a baccalaureate, master’s, or doctoral degree) in current or emerging employment sectors. The courses include competency-based applied learning that contributes to the academic knowledge, higher order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills of the students.

Charter (or public charter) school. A charter school is a public school that, in accordance with an enabling state statute, has been granted a charter exempting it from selected state or local rules and regulations. A charter school may be a newly created school, or it may previously have been a public or private school. Meets all school criteria; receives public funding as primary support; provides free public elementary and/or secondary school to eligible students.

Combined school. A school is classified as combined if it has one or more of grades K–6 and one or more of grades 9–12; for example, schools with grades K–12, 6–12, 6–9, or 1–12 were classified as having combined grades. Schools in which all students are ungraded (i.e., not classified by standard grade levels) are also classified as combined.

Common Core of Data (CCD). CCD is the Department of Education’s primary database on public elementary and secondary education in the United States. CCD is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts and contains data that are designed to be comparable across all states. The objectives of CCD are twofold: first, to provide an official listing of public elementary and secondary schools and school districts in the nation, which can be used to select samples for other National Center for Education Statistics surveys; and second, to provide basic information and descriptive statistics on public elementary and secondary schools and schooling in general.

District. A local education agency (LEA), or public school district, is defined as a government agency that employs elementary- or secondary-level teachers and is administratively responsible for providing public elementary and/or secondary instruction and educational support services. Districts that do not operate schools but do employ teachers are included; for example, some states have special education cooperatives that employ special education teachers who teach in schools in more than one school district. Supervisory unions are also included.

Elementary school. A school is classified as elementary if it has one or more of grades K–6 and does not have any grades higher than grade 8. For example, schools with grades K–6, 1–3, or 6–8 are classified as elementary.

Final weight. This is the product of the initial basic weight, sampling adjustment factor, separate adjustments for nonresponse at each stage of selection, and one or more stages of ratio adjustment to the frame or to independent sources. The final weight is used to produce weighted estimates from the survey data. See chapter 8 for details on the weighting procedure.

FIPS. FIPS stands for Federal Information Processing Standards and refers to a variety of codes for standardized reference. FIPS county and state codes were developed by the National Institute for Standards and Technology (NIST) as numeric identifiers for each county and state in the United States. In 2009, the American National Standards Institute (ANSI) issued a standardized set of numeric or alphabetic codes to ensure uniform identification of geographic entities through all federal government agencies. These standards replace the FIPS codes. INCITS 38 identifies state codes and replaced FIPS 5-2. INCITS 31 identifies counties and replaced FIPS 6-4. More information on the state and county codes can be found at <https://www.census.gov/programs-surveys/geography/guidance/geo-identifiers.html>.

Full-time equivalent. A method of counting teachers that limits the number only to those teachers whose working hours meet or exceed the number of hours prescribed by the school district for full-time employees.

High American Indian enrollment school. High American Indian enrollment schools are public schools where 19.5 percent or more of the students are American Indian or Alaska Native, as reported in the 2009–10 Common Core of Data. Schools with high American Indian enrollment were not stratified separately from other public schools for the 2015–16 NTPS.

Initial basic weight. This is the inverse of the probability of selection from the initial sampling procedure. In contrast, the base weight is the inverse of the probability of selection covering all sampling, including any adjustments to the probability of selection due to schools determined to be splits or mergers during field operations.

Itinerant teacher. A teacher with an assignment that requires the teacher to provide instruction at more than one school.

Middle school. A school is classified as middle if it has no grade lower than 5 and no grade higher than 8. For example, schools with grades 6–8, 7–8, or 5–7 are classified as middle.

Missing data. NTPS is a fully imputed dataset. Consequently, the only survey items that lack responses are either those that are part of a skip pattern and should not have been answered by a particular respondent or those that are write-in responses, which include data too specific to reasonably impute from another respondent's data. Data pulled from the frame (i.e., the Common Core of Data or the Private School Universe Survey) are not necessarily imputed for missing data. In these instances, a value of -9, indicating missing data, is provided for that variable.

Principal. A principal is the administrator who has primary responsibility of the overall day-to-day functioning of the school.

Public school (see “School”). A public school is defined as an institution that provides educational services for at least one of grades 1–12 (or comparable ungraded levels), has one or more teachers to give instruction, is located in one or more buildings, receives public funds as primary support, and is operated by an education agency. Public charter schools and schools located on domestic military bases and operated by the Department of Defense are included.

Sampling adjustment factor. In the weighting process for each NTPS respondent, the sampling adjustment factor is applied to the initial basic weight to account for any additional circumstances affecting the probability of selection. The product of the initial basic weight and the sampling adjustment factor is the base weight. See the definitions for initial basic weight and base weight.

School. An institution or part of an institution that has one or more teachers who provide instruction to students, has students in one or more of grades 1–12 (or the ungraded equivalent), has its own principal/administrator if it shares a building with another school or institution, is in operation during the 2015–16 school year, and is NOT primarily a postsecondary or adult basic education institution. The following are NOT considered a school: schools located exclusively in a private home, Department of Defense schools located outside of the United States, offices of special education in a local education agency, tutoring services, homeschool clearing houses, and adult learning facilities.

Secondary school. A school is classified as secondary if it has one or more of grades 7–12 and does not have any grade lower than grade 7. For example, schools with grades 9–12, 10–12, or 7–8 are classified as secondary.

State school. State schools are typically run by a State Department of Education and are not overseen by a district (e.g., schools for the blind, etc.).

Teachers. A teacher is defined as a full-time or part-time teacher who teaches any regularly scheduled classes in any of grades K–12. This includes administrators, librarians, and other professional or support staff that teach regularly scheduled classes on a part-time basis. Itinerant teachers are included, as well as long-term substitutes who are filling the role of a regular teacher on a long-term basis. An itinerant teacher is defined as a teacher who teaches at more than one school (e.g., a music teacher who teaches 3 days per week at one school and 2 days per week at another). Short-term substitute teachers and student teachers are not included.

Traditional public school. Traditional public schools are publicly funded schools other than public charter schools. They include regular, special education, vocational/technical, and alternative schools. They also include domestic schools located on military bases and operated by the Department of Defense. See also the definition for public school and charter (public charter) school.

Ungraded. Refers to schools that have an alternative means of classifying students other than by grade level.

Ungraded students. Ungraded students are those who are not assigned to a particular grade level (kindergarten, first grade, second grade, etc.); for example, special education centers and alternative schools often classify their students as ungraded. Students in Montessori schools are also considered ungraded if the school assigns them to “primary” and “intermediate” levels instead of specific grades.

Valid skip. An item that was not applicable due to a response to a previous item on the same questionnaire and was provided with a value of -8, indicating a valid skip. Certain survey items direct respondents to skip subsequent items based on their answers to the original item, or stem. For instance, if a respondent answered “No” to item 1-7a on the School Questionnaire (“Does this school currently have any students enrolled in kindergarten?”), he or she was directed to skip items 1-7b and 1-7c (respectively, “How long is the school day for a kindergarten, transitional kindergarten, or transitional first grade student?” and “How many days per week does a kindergarten, transitional kindergarten, or transitional first grade student attend?”) and to “GO TO item 1-8 on page 6.” Because the respondent answered that the school in question does not have students in kindergarten, subsequent questions about kindergarten students at that school were not applicable. In instances when an item should not have been answered by the respondent, a value of -8, which designates a valid skip, is applied to that variable(s).

Appendix B. Questionnaire Availability Online, Downloadable PDF Files

Questionnaires for every data collection component in every survey cycle of the National Teacher and Principal Survey (NTPS), formerly the Schools and Staffing Survey (SASS), since the first 1987–88 SASS and the first 1988–89 Teacher Follow-up Survey (TFS) are available online as downloadable portable document format (PDF) files. The NTPS questionnaires are available at

<https://nces.ed.gov/surveys/ntps/question1516.asp>

The SASS and TFS questionnaires are available at

<https://nces.ed.gov/surveys/sass/questionnaire.asp>

Select the survey year of interest, and then select the specific questionnaire to browse or download. The Teacher Listing Form gathers the data used to select the teacher sample. While no data from this form are reported publicly, the questionnaire form is available on the National Center for Education Statistics (NCES) websites noted above for those interested in survey methodology.

In general, as the survey cycle advances toward the next data collection, the questionnaires will be posted online as they are finalized and sent to the printer. That is generally about 2 months prior to the data collection phase of the survey cycle. The next survey cycle is planned for the 2017–18 school year.

The PDF files of the questionnaires are also available on the 2015–16 NTPS Electronic Codebook. Data will be available through an NCES online data analysis portal called DataLab. QuickStats and PowerStats are accessible for no charge on the NCES website at

<https://nces.ed.gov/datalab/>

All the NTPS and SASS questionnaires are in the public domain. All survey items may be copied by anyone who wishes to use them in another survey, without any restrictions.

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Appendix C. Crosswalk Among Items in the 1987–88, 1990–91, 1993–94, 1999–2000, 2003–04, 2007–08, and 2011–12 SASS and 2015–16 NTPS and Crosswalk of Variables Across the 2015–16 NTPS Questionnaires

Crosswalks linking items across questionnaires for the National Teacher and Principal Survey (NTPS), which was previously referred to as the Schools and Staffing Survey (SASS), are presented in this appendix. The NTPS variable crosswalks are presented in the following order:

Table Page

C-1.	NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16	C-2
C-2.	NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16.....	C-14
C-3.	NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16.....	C-49

Within each questionnaire crosswalk, variables are listed in 2015–16 item order. If there is a blank in the variable’s name for 1987–88, 1990–91, 1993–94, 1999–2000, 2003–04, 2007–08, or 2011–12, then that particular 2015–16 item did not have an equivalent item in earlier years. Variables from 2015–16 are categorized for how closely they “match” the corresponding variable in the 2011–12 questionnaire. The categories are the following:

- **New.** The question was added since the previous survey.
- **Exact.** The question wording and format are **exactly** the same except for changes in reference periods, changes in skip patterns, and item references.
- **Minor.** The question content is the same, but there have been minor changes to the question wording or format. Minor changes include addition or deletion of text in the question, instruction, or answer category; changes in the use of bold and capitalization; and a change in the length of a write-in response category.
- **Major.** The general content of or subject addressed by the item is the same, but the question wording or format has been changed significantly.

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comment	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
P0109	New																				
P0110	Minor	Added instructions clarifying what counts as teaching experience.	A0028	Exact		A0028	Minor		A0028	Exact		A0056	Minor		A210	Minor		ASC031			
P0111	Exact		A0029	Exact		A0029	Exact		A0029	Minor		A0057	Minor		A220						
P0200	Exact		A0080	Minor		A0040	Exact		A0056	Minor		A0067	Minor		A875	Minor		ASC115			
P0201	Exact		A0081	Minor		A0041	Exact		A0057	Minor		A0068	Minor		A880	Minor		ASC116			
P0202	Exact		A0082	Minor		A0042	Exact		A0058	Minor		A0069	Minor		A885	Minor		ASC117			
P0203	Exact		A0083	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0046	Minor		A0062	Minor		A0079									
P0204	Exact		A0084	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0053	Exact		A0069	Minor		A0087	Major	Rated on a 6-point scale.	A695	Major	Rated on a 6-point scale.	PRNCUR RC	Major	Rated on a 6-point scale.	ASC103

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comment	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
P0205	Exact		A0085	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0060	Minor		A0076	Minor		A0095	Major	Rated on a 6-point scale.	A830						
P0206	Exact		A0086	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0068	Minor		A0084	Minor		A0104	Major	Rated on a 6-point scale.	A860						
P0207	Exact		A0087	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0075	Minor		A0091	Minor		A0111	Major	Rated on a 6-point scale.	A735	Major	Rated on a 6-point scale.	PRNHIR NG	Major	Rated on a 6-point scale.	ASC106

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comment	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
P0208	Exact		A0088	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0082	Exact		A0098	Minor		A0118	Major	Rated on a 6-point scale.	A765	Major	Rated on a 6-point scale.	PRNDISPL	Major	Rated on a 6-point scale.	ASC109
P0209	Exact		A0089	Major	11–12 asks a series about principal influence on activities; 07–08 asks a series about group/person’s influence on activities.	A0089	Exact		A0105	Minor		A0125	Major	Rated on a 6-point scale.	A795						
P0300	Exact		A0149	Exact		A0140	Minor		A0204	Major	4-point rating scale; question phrased differently.	A0134	Major	4-point rating scale; question phrased differently.	A580	Major	4-point rating scale; question phrased differently.	ASC073	Major	4-point rating scale; question phrased differently.	ASC091
P0301	Exact		A0150	Exact		A0141	Minor		A0205	Major	4-point rating scale; question phrased differently.	A0135	Major	4-point rating scale; question phrased differently.	A585	Major	4-point rating scale; question phrased differently.	ASC074	Major	4-point rating scale; question phrased differently.	ASC092
P0302	Exact		A0151	Exact		A0142	Minor		A0206	Major	4-point rating scale; question phrased differently.	A0136	Major	4-point rating scale; question phrased differently.	A590	Major	4-point rating scale; question phrased differently.	ASC075	Major	4-point rating scale; question phrased differently.	ASC093

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

[illegible]

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

[illegible]

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comment	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
			A0111	Exact		A0111	Major	07–08 states improvement in student achievement; 03–04 states the effects on student achievement.	A0129	Exact		A0158									
			A0112	Exact		A0112	Minor		A0130	Exact		A0159									
			A0113	Exact		A0113	Minor		A0131	Exact		A0160									
			A0114	Exact		A0114	Minor		A0132	Exact		A0161									
			A0115	Exact		A0115	Minor		A0133	Exact		A0162									
			A0116	Minor		A0116	Major	07–08 includes the option “No, this school does not have instructional aides.”	A0116												
			A0130	Exact		A0125	Minor		A0189												
			A0131	Exact		A0126	Minor		A0190												
			A0132	Exact		A0127	Exact		A0191												
			A0133	Exact		A0128	Exact		A0192												
			A0134	Exact		A0129	Exact		A0193												

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comment	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
			A0135	Exact		A0130	Minor		A0194												
			A0136	Exact		A0131	Major	07–08 states a closed campus for students; 03–04 states to require students to stay on campus.	A0195												
			A0137	Exact		A0132	Minor		A0196												
			A0138	Exact		A0133	Minor		A0197												
			A0139	Exact		A0134	Exact		A0198												
			A0140	Exact		A0135	Exact		A0199												
			A0141	Exact		A0136	Exact		A0200												
			A0142	Exact		A0137	Exact		A0201												
			A0143	Exact		A0138	Exact		A0202												
			A0144	Exact		A0139	Exact		A0203												
			A0145	New																	
			A0146	New																	
			A0147	New																	
			A0148	New																	
			A0189	Exact		A0157	Exact		A0240												
			A0190	Exact		A0159	Major	07–08 asks for this year’s information; 03–04 asks for last year’s information.	A0237												

Table C-1. NTPS variable crosswalk—Principal Questionnaire (NTPS-2A) for public school principals: 1987–88 through 2015–16—Continued

[illegible]

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
50004	Exact		50006	Exact		50236	Exact		S0669	Minor		S0350	Minor	Years reported as two digits.	S2365						
S0005	Exact		S0007	Exact		S0237	Exact		S0670	Minor		S0350	Minor	Year reported as two digits.	S2365						
S0006	Exact		S0008	Exact		S0238	Exact		S0671	Minor		S0350	Minor	Year reported as two digits.	S2365						
S0007	Exact		S0009	Minor		S0235	Exact		S0668	Exact		S0349	Major	Hours & minutes reported separately.	S2355, S2360						
S0100	Exact		S0024	New																	
S0101	Exact		S0025	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0025	Exact		S0400	Minor		S0060	Exact		S0125	Exact		OFFERKG	Exact		SSC102
S0102	Exact		S0026	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0026	Exact		S0401	Minor		S0066	Minor		S0135	Minor		OFFER1	Minor		SSC104
S0103	Exact		S0027	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0027	Exact		S0402	Minor		S0068	Minor		S0145	Minor		OFFER2	Minor		SSC106

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0104	Exact		S0028	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0028	Exact		S0403	Minor		S0070	Minor		S0155	Minor		OFFER3	Minor		SSC108
S0105	Exact		S0029	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0029	Exact		S0404	Minor		S0072	Minor		S0165	Minor		OFFER4	Minor		SSC110
S0106	Exact		S0030	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0030	Exact		S0405	Minor		S0074	Minor		S0175	Minor		OFFER5	Minor		SSC112
S0107	Exact		S0031	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0031	Exact		S0406	Minor		S0076	Minor		S0185	Minor		OFFER6	Minor		SSC114
S0108	Exact		S0032	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0032	Exact		S0407	Minor		S0078	Minor		S0195	Minor		OFFER7	Minor		SSC116
S0109	Exact		S0033	Major	11–12 requires a Yes/No for each grade; 07–08 options are mark (X) all that apply.	S0033	Exact		S0408	Minor		S0080	Minor		S0205	Minor		OFFER8	Minor		SSC118

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0130	Exact		S0262	New																	
S0200	Exact		S0150	Exact		S0120	Minor		S0513	Minor		S0228	Minor		S0910	Minor		FULTEACH	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC157
S0201	Exact		S0151	Exact		S0121	Minor		S0514	Minor		S0227	Minor		S0850	Minor		PARTEACH	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC157
S0202	Exact		S0152	New																	
S0203	Exact		S0155	Minor		S0122	Minor		S0515	Minor		S0249	Minor		S0975	Minor		HISPNTCH	Minor		SSC059
S0204	Exact		S0156	Minor		S0123	Minor		S0516	Exact		S0250	Minor		S0985	Minor		WHITETCH	Minor		SSC061
S0205	Exact		S0157	Minor		S0124	Minor		S0517	Exact		S0251	Minor		S0980	Minor		BLACKTCH	Minor		SSC060
S0206	Exact		S0158	Major	11–12 Asian or Pacific Islander is separated into two questions.	S0125	Minor		S0518	Minor		S0253	Minor		S0970	Minor		ASIANATCH	Minor		SSC058

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0207	Exact		S0159	Major	11–12 Asian or Pacific Islander is separated into two questions.	S0125	Minor		S0518	Minor		S0253	Minor		S0970	Minor		ASIAN TCH	Minor		SSC058
S0208	Exact		S0160	Minor		S0126	Minor		S0519	Exact		S0252	Minor		S0965	Minor		AMIND TCH	Minor		SSC057
S0209	Exact		S0161	New																	
S0210	Minor		S0168	Minor		S0128	Minor		S0521	Minor		S0206	Minor		S0875	Minor		FTHEADS	Major	Includes both principals & assistant principals. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91 & 93–94.	SSC156

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0211	Minor		S0169	Minor		S0129	Minor		S0522	Minor		S0205	Minor		S0815	Minor		PTHEADS	Major	Includes both principals & assistant principals. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91 & 93–94.	SSC156
S0212	Minor		S0170	Minor		S0130	Minor		S0523	Minor		S0208	Minor		S0880	Minor		FTASSIST			
S0213	Minor		S0171	Minor		S0131	Minor		S0524	Minor		S0207	Minor		S0820	Minor		PTASSIST			
S0214	Minor		S0172	Minor		S0132	Minor		S0525	Minor		S0212	Minor		S0890	Minor		FTPROSTF	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0215	Minor		S0173	Minor		S0133	Minor		S0526	Minor		S0211	Minor		S0830	Minor		PTPROSTF	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0216	Minor		S0174	Minor		S0134	Minor		S0527	Minor		S0214	Minor		S0900	Minor		FTLIBRNS	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC161
S0217	Minor		S0175	Minor		S0135	Minor		S0528	Minor		S0213	Minor		S0840	Minor		PTLIBRNS	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC161

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0218	Minor		S0176	Minor		S0136	Minor		S0529	Minor		S0216	Minor		S0895	Minor		FTGUIDES, FTVTCOUN	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC160
S0219	Minor		S0177	Minor		S0137	Minor		S0530	Minor		S0215	Minor		S0835	Minor		PTGUIDES, PTVTCOUN	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC160

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0220	Minor		S0178	Minor		S0138	Minor		S0531	Minor		S0218	Major	Options collapsed into one category.	S0905	Major	Options collapsed into one category.	FTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0221	Minor		S0179	Minor		S0139	Minor		S0532	Minor		S0217	Major	Options collapsed into one category.	S0845	Major	Options collapsed into one category.	PTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0222	Minor		S0180	Minor		S0140	Minor		S0533	Minor		S0220	Major	Options collapsed into one category.	S0905	Major	Options collapsed into one category.	FTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0223	Minor		S0181	Minor		S0141	Minor		S0534	Minor		S0219	Major	Options collapsed into one category.	S0845	Major	Options collapsed into one category.	PTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0224	Minor		S0182	Minor		S0142	Minor		S0535	Minor		S0222	Major	Options collapsed into one category.	S0905	Major	Options collapsed into one category.	FTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0225	Minor		S0183	Minor		S0143	Minor		S0536	Minor		S0221	Major	Options collapsed into one category.	S0845	Major	Options collapsed into one category.	PTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0226	Minor		S0184	Minor		S0144	Minor		S0537	Minor		S0224	Major	Options collapsed into one category.	S0905	Major	Options collapsed into one category.	FTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0227	Minor		S0185	Minor		S0145	Minor		S0538	Minor		S0223	Major	Options collapsed into one category.	S0845	Major	Options collapsed into one category.	PTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
0228	Minor		S0186	Minor		S0146	Minor		S0539	Minor		S0226	Major	Options collapsed into one category.	S0905	Major	Options collapsed into one category.	FTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162
S0229	Minor		S0187	Minor		S0147	Minor		S0540	Minor		S0225	Major	Options collapsed into one category.	S0845	Major	Options collapsed into one category.	PTPROSTF	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC162

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0230	Minor		S0188	Minor		S0148	Minor		S0541	Minor		S0234	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165
S0231	Minor		S0189	Minor		S0149	Minor		S0542	Minor		S0233	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0232	Minor		S0190	Minor		S0150	Minor		S0543	Minor		S0236	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165
S0233	Minor		S0191	Minor		S0151	Minor		S0544	Minor		S0235	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0234	Minor		S0192	Minor		S0152	Minor		S0545	Major	99–2000 shows the general category “Special education aides,” while 03–04 differentiates between “Special education instructional aides” & “Special education non-instructional aides.”	S0232	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0235	Minor		S0193	Minor		S0153	Minor		S0546	Major	99–2000 shows the general category “Special education aides,” while 03–04 differentiates between “Special education instructional aides” & “Special education non-instructional aides.”	S0231	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0236	Minor		S0194	Minor		S0154	Minor		S0547	Major	99–2000 shows the general category “Special education aides,” while 03–04 differentiates between “Special education instructional aides” & “Special education non-instructional aides.”	S0232	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0237	Minor		S0195	Minor		S0155	Minor		S0548	Major	99–2000 shows the general category “Special education aides,” while 03–04 differentiates between “Special education instructional aides” & “Special education non-instructional aides.”	S0231	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0238	Minor		S0196	Minor		S0156	Minor		S0549	Major	99–2000 shows the general category “Library media center aides,” while 03–04 differentiates between “Library media center instructional aides” & “Library media center non-instructional aides.”	S0230	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0239	Minor		S0197	Minor		S0157	Minor		S0550	Major	99–2000 shows the general category “Library media center aides,” while 03–04 differentiates between “Library media center instructional aides” & “Library media center non-instructional aides.”	S0229	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0240	Minor		S0198	Minor		S0158	Minor		S0551	Major	99–2000 shows the general category “Library media center aides,” while 03–04 differentiates between “Library media center instructional aides” & “Library media center non-instructional aides.”	S0230	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0241	Minor		S0199	Minor		S0159	Minor		S0552	Major	99–2000 shows the general category “Library media center aides,” while 03–04 differentiates between “Library media center instructional aides” & “Library media center non-instructional aides.”	S0229	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165
S0242	Minor		S0200	Minor		S0160	Minor		S0553	Major	99–2000 shows the category “Other teacher aides such as kindergarten aides,” while 03–04 shows “Other classroom instructional aides.”	S0238	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0243	Minor		S0201	Minor		S0161	Minor		S0554	Major	99–2000 shows the category “Other teacher aides such as kindergarten aides,” while 03–04 shows “Other classroom instructional aides.”	S0237	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165
S0244	Minor		S0202	Minor		S0162	Minor		S0555	Minor		S0240	Major	Options collapsed into one category.	S0920	Major	Options collapsed into one category.	FTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0245	Minor		S0203	Minor		S0163	Minor		S0556	Minor		S0239	Major	Options collapsed into one category.	S0860	Major	Options collapsed into one category.	PTAIDES	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC165
S0246	Minor		S0204	Minor		S0164	Minor		S0557	Minor		S0242	Minor		S0925	Minor		FTALLOTH	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC166

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0247	Minor		S0205	Minor		S0165	Minor		S0558	Minor		S0241	Minor		S0865	Minor		PTALLOTH	Major	Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC166
S0248	Minor		S0206	Minor		S0166	Minor		S0559	Minor		S0244	Major	Options collapsed into one category.	S0930	Major	Options collapsed into one category.	FTALLOTH	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC166

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0249	Minor		S0207	Minor		S0167	Minor		S0560	Minor		S0243	Major	Options collapsed into one category.	S0870	Major	Options collapsed into one category.	PTALLOTH	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC166
S0250	Minor		S0208	Minor		S0168	Minor		S0561	Minor		S0246	Major	Options collapsed into one category.	S0930	Major	Options collapsed into one category.	FTALLOTH	Major	Options collapsed into one category. Question asks for FTEs in 87–88 & asks for full- & part-time staff separately in 90–91, 93–94, & 99–2000.	SSC166

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0400	Exact		S0250	Minor		S0200	New														
S0401	Exact		S0251	Minor		S0201	Major	07–08 added a filter question asking if the school has IEP students; 03–04 reports the number of IEP students.	S0604	Minor		S0315									
S0402	Exact		S0252	Exact		S0202	Exact		S0605												
S0403	Exact		S0253	Exact		S0203	Minor		S0606	Minor		S0316									
S0404	Exact		S0254	Exact		S0204	Minor		S0607	Minor		S0317									
S0405	Exact		S0255	Exact		S0205	Minor		S0608	Minor		S0318									
S0406	Exact		S0256	Exact		S0206	Minor		S0609	Minor		S0319									
S0407	Exact		S0270	Exact		S0213	Exact		S0630												
S0408	Exact		S0271	Exact		S0214	Exact		S0631												
S0409	Exact		S0272	Exact		S0215	Exact		S0632	Minor		S0285	Exact		S1645	Exact		NOLUNCH	Exact		SSC087
S0410	Exact		S0273	Minor		S0217	Minor		S0634	Minor		S0287	Exact		S1660	Exact			Major	Asks how many students are eligible.	SSC085
S0411	Exact		S0274	Exact		S0216	Minor		S0633	Minor		S0286	Exact		S1655	Exact			Major	Asks how many students are eligible.	SSC085
S0412	Exact		S0275	Exact		S0218	Exact		S0635	Exact		S0288	Minor		S1600	Minor		CHPTRONE	Minor		SSC081

Table C-2. NTPS variable crosswalk—School Questionnaire (NTPS-3A) for public schools: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable Name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
S0419	Exact		S0282	Exact		S0225	Exact		S0655	Exact		S0308									
S0420	Exact		S0283	Minor		S0226	Minor		S0656	Exact		S0309	Minor		S1625	Minor		ONETEACH			
S0500	Exact		S0290	Exact		S0230	Exact		S0661												
S0501	Exact		S0294	New																	
S5120	Exact		S5055	Exact		S5048	Minor		S5441			S5110									
S5501	Exact		S5294	New																	
			S0040	Exact		S0040	Minor		S0415	Minor		S0093									
			S0041	Exact		S0041	Minor		S0416	Minor		S0095	Minor		S0455	Major	Asks for percentage instead of number.	PCTMALE	Major	Asks for percentage instead of number.	SSC016
			S0045	Minor		S0042	Minor		S0417	Minor		S0096	Minor		S0415	Minor		HISPNSTU	Minor		SSC054
			S0046	Minor		S0043	Minor		S0418	Minor		S0097	Minor		S0425	Minor		WHITESTU	Minor		SSC056
			S0047	Minor		S0044	Minor		S0419	Minor		S0098	Minor		S0420	Minor		BLACKSTU	Minor		SSC055
			S0048	Major	11–12 is separated into two questions.	S0045	Minor		S0420	Minor		S0100	Minor		S0410	Minor		ASIANSTU	Minor		SSC053
			S0049	Major	11–12 is separated into two questions.	S0045	Minor		S0420	Minor		S0100	Minor		S0410	Minor		ASIANSTU	Minor		SSC053
			S0050	Minor		S0046	Minor		S0421	Minor		S0099	Minor		S0405	Minor		AMINDSTU	Minor		SSC052
			S0051	New																	
			S0052	Minor		S0047	Minor		S0422	Exact		S0101									
			S0056	Exact		S0049	Exact		S0443	Exact		S0111									
			S0058	Minor		S0051	Minor		S0424	Exact		S0102	Exact		S0470	Exact		NUMHOURS	Major	Refers to students in the highest grade.	SSC049

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T0033	Exact		T0006	Exact		T0362	Minor		T0418	Minor		T0362									
T0034	Exact		T0007	Exact		T0363	Minor		T0419	Minor		T0362									
T0035	Exact		T0008	Exact		T0364	Minor		T0420	Minor		T0362									
T0036	Exact		T0009	Exact		T0361	Exact		T0417	Exact		T0361	Minor		T1610	Minor		SURVM INS			
T0100	Exact		T0025	Minor		T0025	Exact		T0026	Minor		T0051	Minor		T0020	Minor		TSC011		Response options differ.	TSC010*
T0101	Exact		T0026	Exact		T0026	Exact		T0027	Exact		T0052									
T0102	Minor		T0027	Minor		T0027	Exact		T0028	Exact		T0053	Exact		T0025						
T0103	Exact		T0028	Major	11–12 has an additional response option.	T0028	Exact		T0029	Exact		T0054	Exact		T0030	Exact		TSC012	Exact		TSC012
T0104	New																				
T0105	Major		T0030	Major	11–12 asks for the school year; 07–08 asks for the year.	T0036	Exact		T0034	Exact		T0064	Exact		T0145	Exact		TSC038	Exact		TSC031
T0106	Minor		T0031	Major	11–12 has an additional response option.	T0030	Exact		T0030	Exact		T0059	Major	Options were grouped into three questions.	T0150, T0160	Major	Options collapsed into one question. In 87–88 & 93–94, options were grouped into three questions.	TSC039	Major	Options 4 & 5 from 87–88 crosswalk. Response options differ.	TSC032, TSC034
T0107	New																				
T0108	Major		T0040	Major	11–12 asks for the school year; 07–08 asks for the year.	T0037	Exact		T0035												
T0109	Minor		T0041	New																	
T0110	Minor		T0042	New																	
T0200	Exact		T0070	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0050	Minor		T0051	Minor		T0192	Exact		T0715	Exact		TSC113	Exact		TSC140

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T0201	Exact		T0071	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0051	Minor		T0052	Minor		T0193	Exact		T0720	Exact		TSC114	Exact		TSC141
T0202	Exact		T0072	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0052	Minor		T0053	Minor		T0194	Exact		T0725	Exact		TSC115	Exact		TSC142
T0203	Exact		T0073	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0053	Minor		T0054	Minor		T0195	Exact		T0730	Exact		TSC116	Exact		TSC143
T0204	Exact		T0074	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0054	Minor		T0055	Minor		T0196	Exact		T0735	Exact		TSC117	Exact		TSC144
T0205	Exact		T0075	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0055	Minor		T0056	Minor		T0197	Exact		T0740	Exact		TSC118	Exact		TSC145
T0206	Exact		T0076	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0056	Minor		T0057	Minor		T0198	Exact		T0745	Exact		TSC119	Exact		TSC146
T0207	Exact		T0077	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0057	Minor		T0058	Minor		T0199	Exact		T0750	Exact		TSC120	Exact		TSC147

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T0208	Exact		T0078	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0058	Minor		T0059	Minor		T0200	Exact		T0755	Exact		TSC121	Exact		TSC148
T0209	Exact		T0079	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0059	Minor		T0060	Minor		T0201	Exact		T0760	Exact		TSC122	Exact		TSC149
T0210	Exact		T0080	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0060	Minor		T0061	Minor		T0202	Exact		T0765	Exact		TSC123	Exact		TSC150
T0211	Exact		T0081	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0061	Minor		T0062	Minor		T0203	Exact		T0770	Exact		TSC124	Exact		TSC151
T0212	Exact		T0082	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0062	Minor		T0063	Minor		T0204	Exact		T0775	Exact		TSC125	Exact		TSC152
T0213	Exact		T0083	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0063	Minor		T0064	Minor		T0205	Exact		T0780	Exact		TSC126	Exact		TSC153
T0214	Exact		T0084	Major	11–12 requires a Yes/No response for each grade; 07–08 options are mark all that apply.	T0064	Minor		T0065	Minor		T0191	Minor		T0710	Minor		TSC112	Minor		TSC156

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T0215	Minor		T0085	Exact		T0065	Minor		T0279	Minor		T0244									
T0216	Exact		T0086	Minor		T0066	Minor		T0284	Minor		T0249	Major	Asks for percentage instead of number.	T1585, T1590						
T0217	Minor		T0090	Exact		T0067	Minor		T0069	Minor		T0102									
T0218	Exact		T0091	New																	
T0219	New																				
T0220	New																				
T0221	Exact		T0092	Exact		T0068	Minor		T0066	Minor		T0206	Exact		T0790	Exact		TSC128	Major	Response options differ.	TSC157
T0222	Minor		T0093	Exact		T0069	Major	07–08 includes a third option.	T0067	Exact		T0207									
T0223	Minor		T0094	Exact		T0070	Minor		T0068	Exact		T0208	Minor		T0795	Minor		TSC129	Minor		TSC158
T0224	Exact		T0095	Exact		T0071	New														
T0225	Exact		T0096	Exact		T0072	Minor		T0070	Minor		T0209	Exact		T0800	Exact		TSC130	Exact		TSC159
T0226	Exact		T0097	Exact		T0073	Exact		T0071												
T0227	Exact		T0098	Exact		T0074	Minor		T0072	Minor		T0210	Exact		T0805	Exact		TSC131	Exact		TSC160
T0228	Exact		T0099	Exact		T0075	Minor		T0073	Minor		T0211	Exact		T0810	Exact		TSC132	Exact		TSC161
T0229	Exact		T0100	Exact		T0076	Minor		T0074	Minor		T0212	Exact		T0815	Exact		TSC133	Exact		TSC162
T0230	Exact		T0105	Minor		T0077	Minor		T0076	Minor		T0213									
T0240, T0241, T0242, T0243, T0244, T0245, T0246, T0247, T0248, T0249	Minor		T0110, T0111, T0112, T0113, T0114, T0115, T0116, T0117, T0118, T0119	Exact		T0078, T0081, T0084, T0087, T0090, T0093, T0096, T0099, T0102, T0105	Minor		T0077, T0080, T0083, T0086, T0089, T0092, T0095, T0098, T0101, T0104	Major	Allowed for 15 responses.	T0214, T0216, T0218, T0220, T0222, T0224, T0226, T0228, T0230, T0232, T0234, T0236, T0238, T0240, T0242	Major	Allowed for 15 responses.	T0825, T0835, T0845, T0855, T0865, T0875, T0885, T0895, T0905, T0915, T0925, T0935, T0945, T0955, T0965	Minor	Allowed for 10 responses.	TSC137, TSC145, TSC153, TSC161, TSC169, TSC177, TSC185, TSC193, TSC201, TSC209	Major	Allowed for 9 responses.	TSC166, TSC173, TSC180, TSC187, TSC194, TSC201, TSC208, TSC215, TSC222

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T0311	Minor		T0177	New																	
T0312	Exact		T0170	Exact		T0120	Exact		T0123	Exact		T0080	Exact		T0235	Exact		TSC045	Exact		TSC051
T0313	Exact		T0171	New																	
T0314	Exact		T0172	Exact		T0121	Exact		T0124	Exact		T0082	Exact		T0245	Exact		TSC047	Exact		TSC054
T0315	Major		T0173	Exact		T0122	Exact		T0125												
T0316	Minor		T0174	Exact		T0123	Exact		T0126	Exact		T0081	Minor		T0240	Minor		TSC046	Minor		TSC052
T0317	Exact		T0180	Exact		T0124	Minor		T0127	Minor		T0083									
T0318	Minor		T0181	Exact		T0125	Exact		T0128												
T0319	Exact		T0183	Exact		T0126	Exact		T0129						T0280						
T0320	Minor		T0184	Exact		T0127	Exact		T0130	Minor		T0085	Minor		T0275	Minor		TSC050	Minor		TSC040
T0321	Exact		T0186	Exact		T0128	Exact		T0131	Minor		T0086	Exact		T0280	Exact		TSC051	Exact		TSC042
T0322	Minor		T0187	Exact		T0129	Exact		T0132	Minor		T0088	Minor		T0225				Minor		TSC048
T0323	Minor		T0188	Minor		T0130	Exact		T0133												
T0324	Exact		T0189	Exact		T0131	Exact		T0134	Minor		T0089	Exact		T0230				Exact		TSC050
T0325	Minor		T0190	Exact		T0132	Exact		T0135	Minor		T0091	Minor		T0255				Minor		TSC056
T0326	Minor		T0191	Minor		T0133	Exact		T0136												
T0327	Minor		T0192	Exact		T0134	Exact		T0137	Minor		T0092	Exact		T0260				Exact		TSC058
T0328	Minor		T0193	Exact		T0135	Exact		T0138	Minor		T0094	Minor		T0290	Minor		TSC053	Minor		TSC060
T0329	Minor		T0194	Minor		T0136	New														
T0330	Exact		T0195	Exact		T0137	Exact		T0139	Minor		T0095	Exact		T0295	Exact		TSC054	Exact		TSC062
T0331	Minor		T0196	Exact		T0138	Exact		T0140	Minor		T0097									
T0332	Minor		T0197	Minor		T0139	New														
T0333	Exact		T0198	Exact		T0140	Exact		T0141	Minor		T0098									
T0334	Minor		T0199	Exact		T0141	Minor		T0142	Minor		T0100	Minor		T0305	Minor		TSC056	Minor		TSC064, TSC068
T0335	Minor		T0200	Minor		T0142	Minor		T0143												
T0336	Exact		T0201	Exact		T0143	Minor		T0144	Minor		T0101	Exact		T0310	Exact		TSC057	Exact		TSC066, TSC070
T0337	Exact		T0206	Minor		T0150	Exact		T0156												
T0338	Minor		T0207	Exact		T0151	Minor		T0157												
T0339	New																				
T0340	New																				
T0341	New																				
T0342	New																				
T0343	New																				
T0344	New																				
T0345	New																				

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T1602	Exact		T0392	Minor		T0260	Minor		T0297	Major	Doesn't include teaching hours, combines two categories into one.	T0276, T0277	Major	Doesn't include teaching hours, combines two categories into one.	T0995, T1000	Major	Doesn't include teaching hours, combines two categories into one.	TSC220, TSC221	Major	Doesn't include teaching hours, combines two categories into one.	TSC235, TSC236
T1603	Minor		T0393	Exact		T0263	Exact		T0300												
T1604	Minor		T0394	Exact		T0264	Exact		T0301												
T1605	Minor		T0395	Exact		T0265	Exact		T0302												
T1606	Minor		T0396	Exact		T0266	Exact		T0303												
T1607	Minor		T0397	Exact		T0267	Exact		T0304												
T1608	Minor		T0398	New																	
T1609	Exact		T0399	Exact		T0268	New														
T1700	Exact		T0420	New																	
T1701	Exact		T0421	New																	
T1702	Exact		T0422	New																	
T1703	Exact		T0423	New																	
T1704	Exact		T0424	New																	
T1705	Exact		T0425	New																	
T1706	Exact		T0426	New																	
T1707	Exact		T0427	Exact		T0280	Minor		T0318	Minor		T0293	Minor		T1045	Minor		TSC248	Minor		TSC279
T1708	Exact		T0428	Exact		T0281	Minor		T0319	Minor		T0294	Minor		T1050	Minor		TSC249	Minor		TSC280
T1709	Exact		T0429	Exact		T0282	Minor		T0320	Minor		T0295	Minor		T1055	Minor		TSC250	Minor		TSC281
T1710	Exact		T0430	Exact		T0283	Minor		T0321	Minor		T0296	Minor		T1060	Minor		TSC251			
T1711	Exact		T0431	Exact		T0284	Minor		T0322	Minor		T0297	Minor		T1065	Minor		TSC252	Minor		TSC282
T1712	Exact		T0432	Exact		T0285	Minor		T0323	Minor		T0298	Minor		T1070	Minor		TSC253	Minor		TSC283
T1713	Exact		T0435	Exact		T0286	Minor		T0331	Minor		T0300	Minor		T1205				Minor		TSC240
T1714	Exact		T0436	Exact		T0287	Minor		T0332	Minor		T0301	Minor		T1210				Minor		TSC241
T1715	Exact		T0437	Exact		T0288	Minor		T0333	Minor		T0302	Minor		T1215	Minor		TSC226	Minor		TSC242
T1716	Exact		T0438	Exact		T0289	Minor		T0334	Minor		T0303	Minor		T1225				Minor		TSC244
T1717	Exact		T0439	Exact		T0290	Minor		T0335	Minor		T0304	Minor		T1230				Minor		TSC245
T1718	Exact		T0440	Exact		T0291	Minor		T0336	Minor		T0305	Minor		T1240				Minor		TSC247
T1719	Exact		T0441	Exact		T0292	Minor		T0337	Minor		T0306	Minor		T1245	Minor		TSC227	Minor		TSC248
T1720	Exact		T0442	Exact		T0293	Minor		T0338	Minor		T0308	Minor		T1255	Minor		TSC228	Minor		TSC250
T1721	Exact		T0443	Exact		T0294	Minor		T0339	Minor		T0309	Minor		T1260				Minor		TSC251

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T1722	Exact		T0444	Exact		T0295	Minor		T0340	Minor		T0310									
T1723	Exact		T0445	Exact		T0296	Minor		T0341	Minor		T0311	Minor		T1270				Minor		TSC253
T1724	Exact		T0446	Exact		T0297	Minor		T0342	Minor		T0312	Minor		T1275				Minor		TSC254
T1725	Exact		T0447	Exact		T0298	Minor		T0343	Minor		T0313									
T1726	Exact		T0448	Exact		T0299	Minor		T0344												
T1727	Exact		T0449	Exact		T0300	Minor		T0346	Minor		T0314									
T1728	Exact		T0450	Exact		T0301	Minor		T0348	Minor		T0317	Minor		T1300				Minor		TSC259
T1729	Exact		T0451	Exact		T0302	Minor		T0350	Minor		T0320	Minor		T1310	Exact		TSC234			
T1730	Exact		T0452	New																	
T1731	Exact		T0455	Exact		T0303	Minor		T0364	Minor		T0321	Minor		T1075	Minor		TSC254	Minor		TSC262
T1732	Exact		T0456	Exact		T0304	Minor		T0365	Minor		T0322	Minor		T1080	Minor		TSC255	Minor		TSC263
T1733	Exact		T0457	Exact		T0305	Minor		T0366	Minor		T0324	Minor		T1090	Minor		TSC257	Minor		TSC265
T1734	Exact		T0458	Exact		T0306	Minor		T0367	Minor		T0323	Minor		T1085	Minor		TSC256	Minor		TSC264
T1735	Exact		T0459	Exact		T0307	Minor		T0369	Minor		T0333	Minor		T1140	Minor		TSC268			
T1736	Exact		T0460	Exact		T0308	Minor		T0370	Minor		T0334	Minor		T1145	Minor		TSC269			
T1737	Exact		T0461	Exact		T0309	Minor		T0371	Minor		T0335	Minor		T1155	Minor		TSC271			
T1738	Exact		T0462	Exact		T0310	Minor		T0372	Minor		T0336	Minor		T1165	Minor		TSC273			
T1739	Exact		T0463	Exact		T0311	Minor		T0373	Minor		T0337	Minor		T1175						
T1740	Exact		T0464	Exact		T0312	Minor		T0374	Minor		T0338	Minor		T1185						
T1741	Exact		T0465	Exact		T0313	Minor		T0375												
T1742	Exact		T0466	Exact		T0314	Minor		T0376												
T1743	Exact		T0467	Exact		T0315	Minor		T0377												
T1744	Exact		T0468	Exact		T0316	Minor		T0378												
T1745	Exact		T0469	Exact		T0317	Minor		T0379												
T1746	Exact		T0470	Exact		T0318	Minor		T0380												
T1747	Exact		T0471	Exact		T0319	Minor		T0381												
T1748	Exact		T0473	Exact		T0321	Major	07–08 has additional options.	T0383	Exact		T0340	Exact		T1370	Exact		TSC276	Exact		TSC288
T1749	Exact		T0475	Exact		T0322	Exact		T0384	Exact		T0280	Exact		T1325						
T1750	Exact		T0476	Exact		T0323	Exact		T0385	Minor		T0281	Minor		T1330						
T1751	Exact		T0477	Exact		T0324	Exact		T0386	Minor		T0282	Minor		T1335						
T1752	Exact		T0478	Exact		T0325	Exact		T0387	Exact		T0283	Exact		T1340						
T1753	Exact		T0479	Exact		T0326	Exact		T0388	Minor		T0284	Minor		T1345						

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

2015–16			2011–12			2007–08			2003–04			1999–2000			1993–94			1990–91			1987–88
Variable name	Match type to 11–12	Comments	Variable name	Match type to 07–08	Comments	Variable name	Match type to 03–04	Comments	Variable name	Match type to 99–00	Comments	Variable name	Match type to 93–94	Comments	Variable name	Match type to 90–91	Comments	Variable name	Match type to 87–88	Comments	Variable name
T5503	New																				
T5503	New																				
T9011	New																				
T9026	New																				
T9031	New																				
TO419	Exact		T0268	Major	11–12 asks items in a table format; 07–08 asks items in a series.	T0181	Minor		T0183												
			T0032	Major	11–12 asks if box 9 or 10 from previous items was marked; 07–08 asks only if box 10 was marked.	T0031	Exact		T0031	Exact		T0060									
			T0035	Exact		T0034	Exact		T0032	Minor		T0062									
			T0036	Exact		T0035	Exact		T0033	Exact		T0063									
			T0043	New																	
			T0044, T0045	Major	11–12 separated into two questions.	T0038	Minor		T0036	Minor		T0065	Exact		T0105	Exact		FTPUB	Exact		TSC023
			T0046	Minor		T0039	Minor		T0037	Minor		T0066	Exact		T0110	Exact		PTPUB	Exact		TSC024
			T0047	Major	11–12 asks for the number of full- & part-time years in a series; 07–08 asks as one question.	T0041	Minor		T0039	Exact		T0068	Minor		T0095	Minor		FTPVT	Minor		TSC025
			T0048	Major	11–12 asks for the number of full- & part-time years in a series; 07–08 asks as one question.	T0041	Minor		T0039	Exact		T0068	Minor		T0095	Minor		FTPVT	Minor		TSC025

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Table C-3. NTPS variable crosswalk—Teacher Questionnaire (NTPS-4A) for public school teachers: 1987–88 through 2015–16—Continued

[illegible]

Appendix D. Summary of the 2014–15 NTPS Pilot Test Findings and Recommendations for the 2015–16 NTPS

This appendix contains a report prepared by the U.S. Census Bureau. Its contents are listed below.

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Overview of the NTPS Pilot Test

Following the 2011–12 iteration of the Schools and Staffing Survey (SASS), the survey underwent a redesign and reorganization, and it was renamed the National Teacher and Principal Survey (NTPS). NTPS was designed to maintain the same focus on schools, their teachers, and their administrators as SASS; however, it will be collected every 2 years and will be highly flexible, utilizing core surveys of schools, teachers, and principals with rotating modules. The National Center for Education Statistics (NCES) and the U.S. Census Bureau (Census Bureau) worked together to revise the content and improve the data collection methodology. The proposed methodology included elements from past SASS data collections as well as new or modified methodologies based on results of previous administrations of SASS. Several key methodological questions needed to be answered before the 2015–16 collection; therefore, a pilot test was conducted during the 2014–15 school year to optimize the design of the 2015–16 NTPS. This pilot test included a number of experiments related to data collection strategies, and the results will inform the methods employed for the 2015–16 NTPS collection.

The NTPS Pilot Test served as a platform to conduct three experiments, as follows:

- School-Level Questionnaire Mode Experiment—Determine whether paper questionnaires or internet survey instruments (i.e., mail-only versus internet sequential modes) are the more effective mode, as operationalized by highest response rate, of collecting the teacher list, School Questionnaire, and Principal Questionnaire data from schools and principals;
- Teacher Listing Form (TLF) E-Mail Experiment—Assess the feasibility and quality of collecting teacher e-mail addresses from schools on the TLF; and
- Teacher Invitation Mode Experiment—Identify the most effective method, in terms of self-response rate, to invite teachers to complete the Teacher Questionnaire (e-mailed and mailed paper invitations to the internet instrument, a mailed paper invitation to the internet instrument, or a mailed paper questionnaire).

The NTPS Pilot Test also sought to meet the following nonexperimental objectives:

- Test proposed modifications made to the TLF Data Collection Operation;
- Monitor data collection strategies to make a determination about the methods that should be employed for future NTPS production cycles; and
- Evaluate the feasibility and reliability of vendor-purchased teacher lists to supplement or replace school-collected TLFs.

The NTPS Pilot Test also included a Teacher Instructions Experiment conducted externally with 4,000 teachers who were not associated with schools sampled for the NTPS Pilot Test. The external experiment was conducted to assess whether instructions within the questionnaire improve data quality. This study sought to answer the following questions:

- Are instructions that are added to questions as a result of cognitive interviewing effective?
- Are there other factors besides position that influence the effectiveness of instructions, such as the way the instructions are formatted or introduced?

The following sections present the methodology and findings of this research.

NTPS Pilot Test Sample

School Sample

The 2011–12 SASS sampling frame was augmented with information from the 2011–12 Common Core of Data (CCD). The Census Bureau selected a sample of 8,954 public schools and randomly assigned them to four distinct treatment groups for the School-Level Questionnaire Mode Experiment and the TLF E-Mail Experiment, as presented in exhibit D-1 below. The sample was not evenly distributed between the treatment groups; instead, a larger part of the sample was allocated to the TLF E-Mail Experiment treatment because the proportion of schools providing e-mail addresses was expected to be low, given the additional burden on schools.

Exhibit D-1. School sample experimental treatment groups: 2014–15 NTPS Pilot Test

School-Level Questionnaire Mode treatment	Teacher Listing Form (TLF) E-Mail Experiment treatment	
	Panel 1	Panel 3
	3,256 schools TLF with e-mail address field Internet questionnaires	1,221 schools TLF without e-mail address field Internet questionnaires
	Panel 2	Panel 4
	3,256 schools TLF with e-mail address field Paper questionnaires	1,221 schools TLF without e-mail address field Paper questionnaires

Teacher Sample

A public school teacher frame comprised the teachers listed on the completed TLFs. Sampling was done on a flow basis as the TLFs were received and processed. The final teacher sample size was 23,171 teachers. Teachers were assigned to one of three treatment groups for the Teacher Invitation Mode Experiment. Treatment groups were assigned at the school level; therefore, all teachers within a school received the same treatment. Schools were oversampled to teacher invitation treatment mode A in order to obtain a sufficient teacher sample to detect differences between the teacher treatments based on school treatment. Teachers in schools from panels 1 and 2 (TLF with an e-mail address field) that provided all e-mail addresses were split between the three teacher treatment groups. Teachers in schools from panels 1 and 2 that did not provide all e-mail addresses and teachers in schools from panels 3 and 4 (TLF without an e-mail address field) were split between teacher treatment groups B and C. The teacher treatment groups were as follows:

- Treatment A—Mailed and e-mailed internet invitations, 10,698 teachers in 2,108 schools;
- Treatment B—Mailed internet invitation, 6,299 teachers in 1,240 schools; and
- Treatment C—Paper questionnaire, 6,174 teachers in 1,236 schools.

Teacher Instructions Experiment Sample

The Teacher Instructions Experiment sample comprised names and e-mail addresses for 4,000 teachers at schools that were not included in the 2014–15 NTPS Pilot Test or the 2015–16 NTPS production sample; these teachers came from the list of teachers purchased from a data vendor for the 2015–16 NTPS sampled schools. The instruction modes included nine treatment groups with a control group and fully crossed 2x2x2 design:

- Treatment 1—Control: No instructions;
- Treatment 2—Instructions after, list format, no preface;
- Treatment 3—Instructions after, list format, preface;

- Treatment 4—Instructions after, paragraph format, no preface;
- Treatment 5—Instructions after, paragraph format, preface;
- Treatment 6—Instructions before, list format, no preface;
- Treatment 7—Instructions before, list format, preface;
- Treatment 8—Instructions before, paragraph format, no preface; and
- Treatment 9—Instructions before, paragraph format, preface.

Pilot Test Methodology for School-Level Questionnaires

Prior to the initial mailout, Census Bureau staff submitted applications to those school districts that required approval to conduct research in their schools (special contact districts). The pilot test utilized a mail-based survey approach with telephone follow-up.

School-Level Questionnaire Mailouts

The first school package was mailed to the principal/administrator on October 1, 2014.

Schools in the internet questionnaire treatment group received a package containing the following materials:

- A letter that introduced the survey, provided login information to access the NTPS Respondent Status Center¹ and answers to frequently asked questions.
- Instructions for completing the TLF, which described the purpose of the TLF, mentioned the TLF reference card, provided the URL and login credentials, and gave step-by-step instructions for providing teacher information online. There were two versions of the TLF instructions and the reference card: one that referenced providing each teacher's e-mail address and one that did not.
- A TLF reference card, which provided details on the type of information requested and instructions on whom to include and exclude from the list.
- Instructions for completing the Principal Questionnaire online, which indicated that the questionnaire should be filled out by the school principal or administrator and provided the URL and login credentials for the Principal Questionnaire.
- Instructions for completing the School Questionnaire online, which indicated that the School Questionnaire could be completed by any staff member knowledgeable about the topics covered in the questionnaire and provided the URL and login credentials for the School Questionnaire.

Schools in the paper treatment group received a package containing a letter and the paper TLF, the Principal Questionnaire, the School Questionnaire, and three return envelopes. Each school received one of two versions of the TLF: one that included a field for each teacher's e-mail address or one that did not request e-mail addresses.

Schools were mailed a second package on October 14, 2014. Schools in the internet questionnaire treatment group received a reminder letter and replacement instructions for completing each questionnaire online. A second copy of the TLF reference card was also included. Schools in the paper questionnaire treatment group received a reminder letter, replacement paper questionnaires, and return envelopes.

¹ The NTPS Respondent Status Center is an internet application that the Census Bureau designed to serve many functions for principals, TLF respondents, and telephone interviewers. Principals and TLF respondents were able to upload their teacher list or enter teacher information manually, view the status of questionnaires, and request replacement questionnaires. Telephone interviewers were able to enter teacher information manually, view the status of questionnaires, and request replacement questionnaires on behalf of the school staff.

Schools were mailed a third package on October 24, 2014. Schools in the internet questionnaire treatment group received a second reminder letter and replacement instructions for completing each questionnaire online. Another copy of the TLF reference card was also included. Schools in the paper questionnaire treatment group received a second reminder letter, replacement paper questionnaires, and return envelopes.

Schools were mailed a fourth package on November 3, 2014. Schools in the internet questionnaire treatment group received a third reminder letter and their first paper copies of the TLF (with or without an e-mail address, as appropriate), the Principal Questionnaire, and the School Questionnaire, along with a return envelope for each. Schools in the paper questionnaire treatment group received a third reminder letter, replacement paper questionnaires, and return envelopes.

Telephone Follow-up for School-Level Questionnaires

Comparing questionnaire response rates between mailed survey invitations and paper questionnaires was the basis for evaluating the School-Level Questionnaire Mode Experiment. Schools that returned their TLF were not contacted to follow up on their Principal or School Questionnaire because the data were not necessary to evaluate the pilot test. Since completed TLFs were needed to compile the teacher sampling frame, a telephone follow-up operation was planned for schools that had not completed their TLF.

The TLF response rate was lower than expected after the fourth mailout; therefore, the schools that had not provided their TLF were randomly split into two groups. Approximately half of the schools that had not provided their TLF were included in a telephone reminder operation that was conducted from November 12 to December 19, 2014. Interviewers reminded the school principal or other knowledgeable respondent to complete their TLF either electronically or by returning the paper form. Interviewers were also able to complete the TLF with the respondent over the phone using the manual data entry option in the Respondent Status Center. If the Principal or School Questionnaire was also outstanding, interviewers reminded the respondent to complete and return those forms, as well. Clerical staff conducted a web research operation to attempt to compile a teacher list for the other half of nonresponding schools.

Key Findings for the School-Level Questionnaires

Table D-1 presents the response rates for each school-level questionnaire by treatment group for key dates in data collection. Dates presented are based on the mailout and telephone operations discussed above.

Table D-1. Unweighted response rates (in percentages) for school-level questionnaires on key dates, by treatment group: 2014–15 NTPS Pilot Test

Questionnaire treatment group	Response rates achieved by key dates				
	10/16/2014	10/28/2014	11/5/2014	12/24/2014	2/4/2015
Teacher Listing Form					
Paper treatment group, all	4.1	13.1	23.3	36.2	37.1
With e-mail address field	3.8	12.8	22.6	36.0	37.0
Without e-mail address field	5.0	13.9	25.0	36.7	37.6
Internet treatment group, all	1.9	4.6	7.0	20.8	21.6
With e-mail address field	1.7	4.5	6.9	20.23	21.1
Without e-mail address field	2.3	4.9	7.3	22.2	22.8
Principal Questionnaire					
Paper treatment group	5.1	15.1	25.7	37.1	37.8
Internet treatment group	3.8	8.1	11.3	25.4	26.2
School Questionnaire					
Paper treatment group	5.0	14.5	25.5	37.3	38.0
Internet treatment group	3.1	5.9	8.9	23.0	23.5

NOTE: The 12/24/2014 and 2/4/2015 TLF response rates exclude TLFs that were completed via clerical web research.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, National Teacher and Principal Survey (NTPS) Pilot Test, 2014–15 (previously unpublished tabulation).

The first experimental objective of the pilot test was to assess whether paper questionnaires or internet survey instruments are the more effective mode of collecting the school-level data. Table D-1 shows that the paper treatment group's response rate exceeded the internet treatment group's response for all three questionnaire types throughout the entire data collection period. At the end of data collection, the TLF had a self-reported response rate of 37.1 percent for the paper treatment groups and 21.6 percent for the internet treatment groups.² The Principal Questionnaire had a response rate of 37.8 percent for the paper treatment group and 26.2 for the internet treatment group. The School Questionnaire had a response rate of 38.0 for the paper treatment group and 23.5 percent for the internet treatment group.

Due to the low response rates for the internet treatment group, it is recommended that the 2015–16 NTPS be primarily paper based. However, because there are benefits of administering questionnaires using internet instruments (for example, cost savings and better quality survey data through the use of automated edits), it is recommended that collecting NTPS through the use of internet survey instruments be further explored during the 2015–16 NTPS. There are known factors that could have impacted the pilot test response rates, and these problems should be remedied in the 2015–16 NTPS. One possible factor that could have negatively impacted the response rates is the absence of survey coordinators at sampled schools. The survey coordinator serves as a contact person to coordinate and distribute the forms, keep track of each form's status, and return the forms as soon as possible. Coordinators have been shown to boost response rates during previous administrations of SASS; however, they were not utilized during the pilot test data collection. Survey coordinators should be utilized in the 2015–16 NTPS. In addition, the structure, content, and envelope size of the mailed packages containing the internet survey invitations should be improved in order to increase response rates to internet questionnaires.

² The TLFs collected during the clerical operation were omitted from the response rates reported in the experiment results. The final response rates of the internet and paper treatment groups at the end of TLF data collection, which includes the TLFs collected during the clerical operation, were 46.9 percent and 56.3 percent, respectively.

Given the advantages of having teacher e-mail addresses for Teacher Questionnaire data collection and the minor difference in the response rates between TLFs that contained or did not contain fields for e-mail addresses, the 2015–16 NTPS should request teachers' e-mail addresses on the TLF.

Pilot Test Methodology for Teacher Questionnaires

The National Processing Center (NPC) mailed the initial teacher packages on a flow basis as teachers were sampled from the teacher lists. Initial packages were generally mailed on Fridays, from November 7, 2014, through February 6, 2015. There were two versions of the initial teacher package: the internet invitation package and the paper questionnaire package. Teachers in treatment groups A and B received a letter inviting them to complete the Teacher Questionnaire over the Internet. There were two versions of the internet invitation letter: the letter to teachers in treatment group A referenced the e-mails that were sent to the teachers while the letter to teachers in treatment group B did not reference an e-mail. Teachers in treatment group A were sent two e-mails around the same time as their initial mailout: the first contained the survey's URL and their username, and the second contained their password. Teachers in treatment group C received a letter that introduced the survey and asked them to complete the enclosed paper Teacher Questionnaire and return it in the enclosed postage-paid envelope.

NPC mailed the second teacher packages on a flow basis approximately 2 weeks after the initial package. The second teacher packages were mailed from November 21, 2014, through February 20, 2015. Teachers in treatment groups A and B received a reminder letter to complete their survey over the Internet. The letter to teachers in treatment group A referenced the reminder e-mail that was sent to the teachers around the same date while the letter to teachers in treatment group B did not reference an e-mail. Teachers in treatment group C received a letter reminding them to complete the paper questionnaire, a second paper Teacher Questionnaire, and a second return envelope.

The NPC mailed the third teacher packages on a flow basis approximately 2 weeks after the second package. The third teacher packages were mailed from December 5, 2014, through March 6, 2015. Teachers in treatment groups A and B received a second reminder letter to complete their survey over the Internet. The letter to teachers in treatment group A referenced the reminder e-mail that was sent to the teachers around the same date while the letter to teachers in treatment group B did not reference an e-mail. Teachers in treatment group C received a reminder letter to complete the paper questionnaire, a third paper Teacher Questionnaire, and a third return envelope.

NPC mailed the fourth teacher packages on a flow basis approximately 2 weeks after the third package. The fourth teacher packages were mailed from December 19, 2014, through March 20, 2015. All teachers received a letter asking them to complete the enclosed paper Teacher Questionnaire and return it in the enclosed envelope.

Self-response to mailed survey invitations or paper questionnaires was the basis for evaluating the teacher invitation mode experiment, so schools and teachers were not contacted to follow up on the Teacher Questionnaire.

Key Findings From the Pilot Test for Teacher Questionnaires

The pilot test sought to identify the more effective method to invite teachers to complete the Teacher Questionnaire. Table D-2 presents the response rates for the Teacher Questionnaire by treatment group for various dates in data collection. Since teachers were sampled on a flow basis, the response rates for the Teacher Questionnaire were calculated based on the number of teachers who had been sampled by each date.

Table D-2. Unweighted response rates (in percentages) for Teacher Questionnaires on various dates, by treatment group: 2014–15 NTPS Pilot Test

Teacher Questionnaire treatment group	Response rates achieved by various dates				
	12/2/2014	1/7/2015	2/4/2015	3/4/2015	4/9/2015
Mailed and e-mailed internet invitation	4.8	11.9	24.6	32.9	35.6
Mailed internet invitation	3.5	8.7	19.4	26.7	29.4
Paper questionnaire	4.0	9.7	23.8	32.7	35.7

NOTE: The response rates for the Teacher Questionnaire were calculated based on the number of teachers who had been sampled by each date. Response rates beginning on 2/4/15 reflect the response rate for all sampled teachers.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, National Teacher and Principal Survey (NTPS) Pilot Test, 2014–15 (previously unpublished tabulation).

Table D-2 shows that the response rate for teachers in the group receiving an internet invitation by mail and e-mail (treatment group A) exceeded that of the teachers who received an internet invitation by mail only (treatment group B). At the end of data collection, the mail and e-mail teacher treatment group had a response rate of 35.6 percent while the mail-only teacher treatment group had a response rate of 29.4 percent. It is clear from the comparison of these two internet treatment groups that if the internet response mode is offered, it should be offered by a combination of e-mailed and mailed paper invitation letters.

The response rate for teachers who received the paper Teacher Questionnaire (treatment group C) at the end of data collection was 35.7 percent—only 0.1 percentage point higher than that for teachers in the mail and e-mail internet invitation group.

As discussed previously, teachers in the internet invitation (with and without e-mail) treatment groups received a paper Teacher Questionnaire with their fourth mailout. In addition, paper Teacher Questionnaires were available by request. Table D-3 presents the final response rates for the Teacher Questionnaire by treatment group and response mode.

Table D-3. Final unweighted response rates (in percentages) for Teacher Questionnaires, by treatment group and response mode: 2014–15 NTPS Pilot Test

	Teacher Questionnaire treatment group					
	Mailed and e-mailed internet invitation		Mailed internet invitation		Paper questionnaire	
	Number	Percent	Number	Percent	Number	Percent
Total workload	10,698		6,299		6,174	
Interviews	3,801	35.5	1,848	29.3	2,200	35.6
Internet	3,488	32.6	1,605	25.5	0	0.00
Paper	313	2.9	243	3.9	2,200	35.6
Noninterviews	598	5.6	211	3.4	33	0.5
Out-of-scope	19	0.2	17	0.3	13	0.2
Response rate (Interview/[workload— out-of-scope])		35.6		29.4		35.7

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, National Teacher and Principal Survey (NTPS) Pilot Test, 2014–15 (previously unpublished tabulation).

Table D-3 shows that the majority of the respondents in the internet invitation treatment groups completed their questionnaire via the Internet. Only 2.9 percent of teachers who received both mail and

e-mail internet invitations and 3.9 percent of teachers who received invitations by mail only eventually completed a paper Teacher Questionnaire.

Given the known benefits of administering questionnaires using internet instruments and the near-identical response rates of the paper group and the optimal internet response option, it was determined that teachers should be contacted using a combination of e-mailed and mailed paper invitation letters to complete the Teacher Questionnaire using the internet instrument for the 2015–16 NTPS.

Pilot Test Methodology for Teacher Instructions Experiment

In order to assess whether instructions within the questionnaire improve data quality, NCES staff selected seven questions from the NTPS Pilot Test Teacher Questionnaire for which instructions were proposed as a result of cognitive interviewing. These questions related to the following topics:

- Year the teacher began teaching;
- Number of schools in which the teacher taught;
- Number of years that the teacher taught;
- Number of students with an Individualized Education Program (IEP);
- Number of limited-English proficiency (LEP) learners;
- Number of hours the teacher is required to work per week under his or her contract; and
- Number of hours the teacher is required to deliver instruction.

In addition, five experimental questions were written with instructions that were designed to counter teachers' natural conceptions of the terms used. These questions related to the following topics:

- Number of student assessments;
- Hours of professional development;
- Hours of parent communication;
- Number of classrooms in the school; and
- Number of bathrooms in the school.

Teachers were sent a series of paper invitation letters and corresponding e-mails between February 18 and May 11, 2015, inviting them to take the survey online. The final survey response rate was 41.7 percent.

Key Findings From the Teacher Instructions Experiment

NTPS Pilot Test Teacher Questionnaire Items

The presence or absence of instructions that were added to the NTPS Pilot Test Teacher Questionnaire as a result of cognitive interviewing did not, on average, alter respondents' answers. Measureable differences were also not detected based on the position and format of the instructions or on whether a preface was included.

Although the inclusion of the instructions was not demonstrated to improve data quality, it is possible that they were necessary and useful for a subgroup of the respondents not adequately represented in this experiment. Therefore, it was recommended that proposed instructions be included on the 2015–16 NTPS Teacher Questionnaire. Future research, including additional cognitive interviewing, was suggested to evaluate other options, such as restructuring questions, breaking each question into multiple questions, or ignoring the potential issue.

Experimental Questions

The instructions added to the experimental questions were intentionally crafted to restrict the respondents' understanding of the items. These did, on average, lower respondents' answers.

Two interaction effects were detected: position by preface and format by preface. On average, the instructions placed before a question were more effective if they were introduced with a preface (e.g., "For the purposes of this question,"); however, the instructions placed after a question were more effective without a preface. On average, lists of instructions were more effective if they were introduced with a preface; however, paragraphs of instructions were more effective without a preface.

Appendix E. Report on Sample Design for the National Teacher and Principals Survey



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Report on Sample Design for the National Teacher and Principals Survey



June 10, 2015

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Executive Summary

This report summarizes our examination of alternative sample designs for the new National Teacher and Principal Survey (NTPS). During the design phase in 2014, each design assumed an overall sample of 5,000 completed principal and 25,000 completed teacher questionnaires. In the implementation phase in 2015, the sample size was increased to 5,300 schools and 27,450 teachers. All of the designs allocate the sample of schools to strata based on the square root of the number of full-time equivalent (FTEs) teachers at each school in a stratum, with teacher sample sizes again proportional to the number of FTEs at that school.

Allocations strictly proportional to that allocation are shown to be insufficient to meet the targeted accuracy goals set by NCES. Our recommended design at the end of the design phase starts with that allocation but then oversamples:

- Charter schools at a rate proportional to 3.1 times the measure of size;
- Noncharter combined schools at a rate proportional to 2.4 times the measure of size;
- Noncharter non-combined town schools at a rate proportional to 1.27 times the measure of size
- All other schools at a rate proportional to 1.0 times the measure of size.

With this design all domain estimates are sufficiently accurate to meet NCES reporting guidelines¹. It is necessary, however, to combine data from two studies to produce estimates with the targeted confidence interval half width of 2.5 percent for a 20 percent prevalence rate for charter, middle, high, town, rural, and high poverty schools, and three studies for combined schools. Other school domains are sufficient from a single study. Section 2 of the report provides definitions of these domains.

All teacher domains meet this targeted confidence interval half width with the exception of all vocational education teachers (“Vo Tech”). Also for middle and high school teachers (combined) the two core subjects Science and Social Sciences exceed the 2.5 percent target. Again, combining data from two studies will produce estimates with this level of accuracy.

¹ NCES reporting guidelines require at least a 50 percent coefficient of variation to be published at all, and a 30 percent coefficient of variation to be published without caveats and warnings.

The increase in the sample size from 5,000 to 5,300 interviewed schools allowed us to better represent some domains which were less well-represented with the smaller sample size. These included middle schools, high schools, rural schools. The design was altered along these lines as follows:

- Charter schools are sampled at a rate proportional to 3.1 times the measure of size;
- There are variable sampling rates for all four school level categories:
 - Noncharter combined schools are sampled at a rate proportional to 2.4 times the measure of size;
 - Noncharter middle schools are sampled at a rate proportional to 1.17 times the measure of size;
 - Noncharter high schools are sampled at a rate proportional to 1.12 times the measure of size;
 - Noncharter primary schools are sampled at a rate proportional to 0.9 times the measure of size;
- There are variable sampling rates for all four urbanicity categories:
 - Noncharter town schools are sampled at a rate proportional to 1.27 times higher than the rate they have from their school level status (e.g., noncharter town high schools are sampled at a rate of 1.49 times their measure of size: 1.27 times 1.17);
 - Noncharter rural schools are sampled at a rate proportional to 1.05 times higher than the rate they have from their school level status;
 - Noncharter suburban schools are sampled at a rate proportional to 0.95 times higher than the rate they have from their school level status;
 - Noncharter suburban schools are sampled at a rate proportional to 1.00 times the rate they have from their school level status—no over- or under-sampling.
- The proportionality factor for teacher sample sizes for middle and high schools is higher by a ratio 5.375/5 relative to primary and combined schools.

In addition to these oversampling rates, schools in six small states with insufficient sample sizes are also boosted to realize lower bounds on precision for these states (states are not an integral part of the NTPS sample design as they were for SASS, but there is still a floor for precision at the state level).

Introduction

In this report, several potential sample designs for the National Teacher and Principal Survey (NTPS) are proposed and evaluated. The NTPS is to replace the Schools and Staffing Survey (SASS). It will be conducted every two years, with a smaller number of schools sampled than in SASS. The more frequent data collection will give more timely data for national estimates and estimates in large domains such as primary schools. It will also allow for more flexibility for the survey. With a smaller sample size in each administration, however, estimates will have larger standard errors than estimates from SASS. In particular, estimates in smaller domains may need to be combined across survey administrations to achieve the desired precision of 2.5 percentage points for the half width of a 95 percent confidence interval for an item with 20 percent prevalence.

In most of this report, it is assumed that 5,000 school interviews will be completed for NTPS. An average of 5 teacher interview will be completed per school, for a total of 25,000 teacher interviews. This was later revised to 5,300 school interviews and 27,450 teacher interviews, and this is reflected in the final designs. The designs in this report stratify schools by poverty status, urbanicity, level (primary, middle, high, and combined), and charter status. Four allocations are studied. The first allocates the sample of schools proportionately to the strata, using the square root of full time enrollment (FTE) as the measure of size (the same measure of size currently used in SASS). The remaining three allocations oversample some of the strata to different degrees. For each allocation, the anticipated precisions of estimates are calculated for different domains of interest.

The anticipated precisions are calculated for two levels of estimates: school-level estimates and teacher-level estimates. For school-level estimates, the completed interview sample size for a domain is the number of school completed interviews in that domain. For teacher-level estimates, the completed interview sample size for a domain is the number of teachers with completed interviews in that domain. In both cases, the effective sample size is reduced because of weighting effects; the effective sample size for teacher-level estimates is also reduced because the teachers sampled from the same school are clustered.

In both cases, nationally representative estimates are required, as well as representative estimates in important school domains. For teachers in particular, there are also teacher domains of interest. The following types of estimates are of interest, illustrated by the type of question each estimate would answer.

- What percentage of teachers in the nation (in the domain) have characteristic X? This is a teacher-level estimate. The denominator is the estimated number of teachers in the nation (domain), so it counts each teacher in the population as 1. This estimate will experience two types of variance inflation: a design effect from clustering of teachers within schools, and a design effect from unequal weighting.
- ‘What percentage of principals in the nation (in the domain) have characteristic X? This is a school-level estimate. With one principal per school, the denominator is the estimated number of schools in the nation (domain). It counts each principal (school) as 1, so this is called a unit-count principal estimate. There is no within-school clustering for a unit-level estimate, but there is still variance inflation from unequal weighting.

The optimal design for unit-count principal estimates would be an equal probability sample of schools. Optimal designs for unit-count teacher estimates would make sure that the final teacher probabilities are equal across schools. If the school sample is equal probability, then the teacher sample sizes must be proportional to the number of teachers. If the school sample is probability proportional to teacher count, then the teacher sample sizes must be equal.

There can only be one single sample design that must simultaneously support both teacher estimates and principal estimates. The NORC Concept Paper¹ and NORC Sample Design Report² explored many options and their properties. This report describes the last research before selection of the final sample design, and in consultation with National Center for Education Statistics, we have restricted this final narrowed search to particular sample designs. In this paper, the only designs studied are probability proportional to size (PPS) samples within each school stratum with measure of size equal to the square root of the full-time teacher equivalent (FTE) count for the school. Teacher sample sizes within schools are also proportional to the square root of FTE. This will result in equal base weights across teachers (optimal for teacher estimates). The situation for principals is not ideal, as the square root FTE measure of size is not optimal for school-level or teacher-level estimates, but it represents a ‘middle ground’. It gives reasonably good standard errors for both, without being the best for either.

¹ Kasprzyk, D. et al. (2013). Schools and Staffing Survey Redesign Concept Paper, submitted to National Center for Education Statistics on September 23, 2013.

² Mulrow, E. et al. (2014). National Teacher & Principal Survey Sample Design, submitted to National Center for Education Statistics on September 18, 2014.

The report besides this introduction (which is Section 1) has eleven sections (2 through 12) and six appendices (A through F). Section 2 “Stratification and Measure of Size” defines the basic frame stratification (50 school strata). Appendix A “Appendix on Frame Development” explains details of the development of the frame for this research project. It should be noted that the final frame used for drawing the sample for the 2015–16 NTPS is based on these principles, but it is developed by U.S. Census researchers from the most current CCD. Therefore the frame numbers here will not be identical to the numbers derived from the final 2015–16 NTPS frame.

Section 3 presents the basics for defining relative sampling rates for the 50 sampling strata, based on achieving the defined precision levels. Sections 4 and 5 outline the process for computing precision at the school and teacher levels respectively, setting out assumptions and approximations. Appendix B provides formulas and details for computing school-level precision, and Appendices C and D do the same for teacher-level precision.

Sections 6 through 9 present the results for four competing sample designs: Proportional Allocation and Oversampling Options I, II, and III respectively. Precision results are presented based on the theory in Sections 4 and 5 and Appendices B, C, and D. All of these calculations are based on the original design parameters with 5,000 sampled schools and 25,000 sampled teachers. Section 10 presents our final conclusions in deciding on Oversampling Option II under this original design. This was the endpoint in December 2014 when the first version of this report was submitted by Westat to NCES (December 15, 2014).

Late in December 2014, NCES confirmed an increase the school sample size to 5,300 sampled schools, with a proportionate increase in teachers (the final teacher sample size was 27,450). This triggered a re-evaluation of the best design option. The new design option decided upon was Oversampling Option IIA, which was a hybrid between Oversampling Option II and Oversampling Option III. This option is discussed in Section 11. Section 12 then provides details regarding the implementation of this final sample design, along with auxiliary technical Appendices E and F.

2

Stratification and Measure of Size

The school measure of size used in each proposed design was the square root of FTE. This measure of size was applied to each school in the sampling frame, which was based on the 2012-2013 Common Core of Data (CCD). The frame construction is described in Appendix A. The stratification structure was based on the following school characteristics:

- Poverty status based on percent students eligible for free or reduced price lunch:
 - High poverty stratum: all schools with greater than 75 percent eligible for free or reduced price lunch;
 - Low/medium poverty stratum: all schools with less than or equal to 75 percent eligible for free or reduced price lunch;
- Urbanicity (four categories: city, suburban, town, rural), based on the twelve category locality code provided by the US Bureau of the Census for the CCD;
- Level (primary, middle, high, other), using the SASS definition of level;
- School type (charter, noncharter).

The 64 cells defined by the crossings of these four margins defined the initial strata. Some of the charter school strata were collapsed based on the criterion that each final stratum has to have at least 0.1 percent of the schools on the frame and at least 0.05 percent of the teachers on the frame¹. Based on this criterion, we collapsed the 32 initial charter school strata into 18 final charter school strata. These collapsed strata are given in Table 2-1.

¹ This corresponds to an expected school sample size of 5 and an expected teacher sample size of 12.5.

Table 2-1. Collapsed strata for charter schools

New Stratum	School Level	Urbanicity	Poverty	Teacher Count	Teacher Pct	School Count	School Pct
Total	Total	Total	Total	132,748	4.29	6,258	6.48
1	Primary	City	High	19,101	0.62	847	0.88
2	Primary	City	Low/med	15,990	0.52	774	0.80
3	Primary	Suburban	High	4,330	0.14	198	0.21
4	Primary	Suburban	Low/med	12,541	0.41	527	0.55
5	Primary	Town	High	606	0.02	35	0.04
5	Primary	Town	Low/med	1,852	0.06	139	0.14
6	Primary	Rural	High	446	0.01	39	0.04
6	Primary	Rural	Low/med	4,541	0.15	269	0.28
7	Middle	City	High	3,789	0.12	232	0.24
8	Middle	City	Low/med	3,118	0.10	172	0.18
9	Middle	Suburban	High	610	0.02	41	0.04
9	Middle	Suburban	Low/med	1,482	0.05	88	0.09
9	Middle	Town	High	140	0.00	9	0.01
9	Middle	Town	Low/med	231	0.01	20	0.02
9	Middle	Rural	High	46	0.00	5	0.01
9	Middle	Rural	Low/med	379	0.01	31	0.03
10	High	City	High	6,828	0.22	367	0.38
11	High	City	Low/med	7,719	0.25	480	0.50
12	High	Suburban	High	1,100	0.04	69	0.07
12	High	Suburban	Low/med	5,010	0.16	281	0.29
13	High	Town	High	143	0.00	23	0.02
13	High	Town	Low/med	905	0.03	97	0.10
13	High	Rural	High	197	0.01	26	0.03
13	High	Rural	Low/med	963	0.03	98	0.10
14	Combined	City	High	8,708	0.28	235	0.24
15	Combined	City	Low/med	12,384	0.40	444	0.46
16	Combined	Suburban	High	1,889	0.06	65	0.07
16	Combined	Suburban	Low/med	11,823	0.38	329	0.34
17	Combined	Town	High	259	0.01	21	0.02
17	Combined	Town	Low/med	1,859	0.06	89	0.09
18	Combined	Rural	High	441	0.01	33	0.03
18	Combined	Rural	Low/med	3,317	0.11	175	0.18

The implicit strata that define the ordering for systematic sampling within the explicit strata do not need to be identical to the 50 oversampling strata (18 charter plus 32 noncharter).

Under the final sample design (Sections 11 and 12), six states were assigned higher relative sampling rates. The implicit stratification is a crossing of these 50 strata with seven state-based strata.

Allocation to Strata and Approach for Evaluating Precision

Under proportional allocation, each of the I strata¹ is allocated its ‘fair share’ of the 5,000 school completed interview sample size, based on the summation over the schools in the stratum of the square root of FTE. Subscripting $i = 1, \dots, I$ for the strata, the number of schools selected in stratum i , m_i , is proportional to $\sum_{j=1}^{J_i} \sqrt{FTE_{ij}}$ where J_i is the total number of schools on the frame in the stratum, and $j = 1, \dots, J_i$ subscripts the schools in the stratum. We round the stratum sample sizes to integer values, and round up to 1 any value less than 1 (there are some strata that fall into this category).

To boost the precision for particular domains of interest, we assign oversampling factors O_i . The ratios of the oversampling factors determine the relative sampling rates of the strata. Note that ultimate strata completed interview sample sizes are based on the relationships of the oversampling factors, so that an oversampling factor of 1.5 results in differing expected completed interview sample sizes based on the magnitude of the oversampling factors in other strata. The completed interview sample sizes m_i under oversampling are proportional to $O_i * \sum_{j=1}^{J_i} \sqrt{FTE_{ij}}$. The case of proportional allocation can be subsumed under this formula by setting all the O_i in this case equal to 1.

For each sampling design, we first look at estimated precision for estimates at the school level (for unit-count school or principal estimates). We also look at estimated precision at the teacher level, with the school sample design as given, and teachers then selected with teacher completed interview sample sizes t_{ij} within each school proportional to $\sqrt{FTE_{ij}}$. Note that when schools are also selected with probability proportional to the square root of FTE, this results in an overall teacher weight which is constant over sampled schools, as in SASS 2011-12². We check the precision for specific teacher domains based on race/ethnicity, teacher subject, and experience.

¹ In the calculations tabulated in Sections 6 through 9, $I = 50$. In the calculations for Sections 11 and 12, $I = 350$ (a crossing of the 50 primary strata with seven state-based strata).

² There will be in practice an upper bound on the teacher sample size for schools to prevent too much of a burden. This will lead to differential teacher base weights rather than equal teacher base weights. We account for this with designating a larger design effect for teacher weighting (1.3), which also includes effects of teacher nonresponse adjustments.

Section 4 discusses variances for school-level estimates, and Section 5 discusses variances for teacher-level estimates.

The anticipated standard errors reported in this report are all calculated assuming that the domain distribution of schools is the same as in the 2012-2013 CCD, and that the domain distribution of teachers is unchanged from that in the 2011-2012 SASS.

4

Estimation of School-level Variances for the Proposed Designs

Four designs are compared: the proportional allocation design, Oversampling Plan I, Oversampling Plan II, and Oversampling Plan III. Both school level and teacher level standard errors are computed for a dichotomous item with population percentage 20 percent. For the school-level estimates, the computations are for ‘unit-count’ school population estimates: estimates in which each school counts as 1. The sample design is not optimal for this type of estimate, so there is a design effect from this non-optimal allocation. The computation has the following parts:

- Expected completed interview sample size allocations are made to the 50 strata based on the square-root FTE measure of size;
- Frame stratum allocations are made based on the simple school counts within the stratum;
- Design effect factors are computed for the effects of using square-root FTE measures of size within the strata;
- A finite population correction factor for each stratum is computed;

A design effect of 1.2 is included for the effects of weighting adjustments to compensate for nonresponse.

Appendix B has the full technical details and formulas for these calculations. These calculations are carried out on our prepared school frame (prepared from the 2012–13 Common Core of Data public school universe file as a starting point). Appendix A provides the details regarding the development of this school frame (filtering of ineligible schools; imputation of missing FTE values). We do similar computations for the following school strata and domains:

- Poverty status based on percent students eligible for free or reduced price lunch:
 - High poverty stratum: all schools with greater than 75 percent eligible for free or reduced price lunch;
 - Low/medium poverty stratum: all schools with less than or equal to 75 percent eligible for free or reduced price lunch;
- Urbanicity (four categories: city, suburban, town, rural);

- Level (primary, middle, high, other), using the SASS definition of level;
- School type (charter, noncharter);
- State.

The last paragraph of Appendix A provides details of the construction of these domain variables. The steps for the school domain calculations are the same as given above for the school national estimates, except that the calculations at the stratum level are done for each stratum-domain pair rather than for each stratum.

The poverty, urbanicity, level, and school type domains are all determinants of the strata, so that each of these domains consists of a set of strata. The state domains are not connected to the strata: they cut across the strata. The computations are similar to those for the all-school domain, except that the sample sizes which are used are expected completed interview sample sizes for each stratum within the domain. The population totals are the population totals for each domain within each stratum. Especially for the state domains, these calculations are a rough approximation only, as they do not account for variable sample sizes for domains that cut across strata.

Estimation of Teacher-level Variances for the Proposed Designs

For the teacher-level estimates, the computation has the following parts:

- Expected completed interview sample size allocations are made to the 50 strata based on the square-root FTE measure of size;
- Frame stratum allocations are made based on the teacher FTE counts within the strata;
- A clustering factor of 2.0 is included based on the assumption of a 25 percent intra-school correlation among teachers and a school sample teacher mean of 5.0;
- A design effect of 1.3 is included for the effects of weighting adjustments to compensate for nonresponse.

Appendix C has the full technical details and formulas for these calculations. These calculations are carried out on our prepared school frame (prepared from the 2012–13 Common Core of Data public school universe file as a starting point). We do similar computations for the school domains listed in Section 4.

The steps for the teacher estimate variance calculations within the school domains are similar, except that the stratum-level calculations are done for stratum-domain pairs rather than for the strata alone.

We also generated estimates in the following teacher-specific domains:

- Race/ethnicity domains (Blacks, Hispanics, Others);
- Teacher subject domains (special education, general elementary education, math, science, language arts, social sciences, vocational education, other);
- Teacher experience domains:
 - 1 to 3 years of experience;
 - 4 to 9 years of experience;

- 10 to 19 years of experience;
- 20 or more years of experience.

The primary calculations for teacher domains are done in general only for the all-school domain. The only exception to this is the ‘core domains’, which are the four subjects mathematics, language arts, science, and social sciences nested within the ‘middle/high’ school domain (consisting of middle and high schools together).

Appendices C and D have the full details of these calculations. The variable clustering factor for the teacher-specific domains is generally much smaller than 2, as the teacher-domain specific school means are fractions of 5.0.

Sections 6 through 9 provide the calculations for the four compared designs: proportional in Section 6 and Oversampling Plans I through III in Sections 7 through 9 respectively. Sections 10 and 11 provide conclusions and recommendations.

Proportional Allocation Results

The most efficient allocation for national estimates is to allocate to each stratum a sample size proportional to the share of population units in that stratum¹. As stated above, for NTPS, the population unit is the school for school-based estimates and the teacher for teacher-based estimates. The measure of size used for all calculations is the square root of FTE, which is a compromise between the optimal measure of size for school-level estimates and the optimal measure of size for teacher-level estimates (assuming approximately equal numbers of teachers sampled per school). This section explores the outcomes for the school-level and teacher-level estimates assuming this allocation.

Table 6-1 below presents results for the school-level estimates following the formulas and assumptions from Section 4 and Appendix B. The oversampling rate O_i is equal to 1 here: the allocation is proportional. Included in Table 6-1 are calculations of expected school completed interviews, expected school-level standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects² for this proportional allocation. The last column presents the number of independent studies that would need to be combined to achieve an overall 2.5 percent half-width (for 20 percent population percentages). If this number is 1, then the half-width criterion is achieved. If it is 2 for example, then two independent studies will achieve the half-width criterion.

¹ See for example Cochran (1977), *Sampling Techniques*, 3rd ed., Section 5.5. If variance and unit costs are equal across strata, the optimal allocation of sample size to minimize variance is that which is proportional to share of measure of size.

² The design effect in these tables is the square of the expected standard error divided by $(0.8)*(0.2)$ divided by the expected domain sample size under the design.

Table 6-1. School-level domain analysis results for major domains for proportional allocation

Domain	Frame Schools	Expected School Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect	Studies Needed to Achieve 2.5 percent Half-width Criterion
All	95,464	5,000	0.68 percent	1.33 percent	1.45	1
Charter	6,254	258	3.01 percent	5.90 percent	1.46	6
Noncharter	89,210	4,742	0.70 percent	1.37 percent	1.44	1
Primary	52,868	2,674	0.87 percent	1.71 percent	1.28	1
Middle	14,912	844	1.61 percent	3.15 percent	1.36	2
High	21,199	1,217	1.54 percent	3.01 percent	1.80	2
Combined	6,485	264	3.27 percent	6.41 percent	1.77	7
City	25,818	1,416	1.26 percent	2.47 percent	1.40	1
Suburban	29,900	1,756	1.11 percent	2.18 percent	1.36	1
Town	12,785	635	1.94 percent	3.81 percent	1.50	3
Rural	26,961	1,193	1.41 percent	2.76 percent	1.48	2
High poverty	23,731	1,226	1.32 percent	2.59 percent	1.34	2
Low/med poverty	71,733	3,774	0.79 percent	1.55 percent	1.48	1

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

One study only is needed for the All domain, for noncharter schools, for primary schools, for city and suburban schools, and for low/medium poverty schools. Table 6-2 provides similar preliminary calculations for state domains, assuming the same proportional to square root of FTE allocation.

Table 6-2. School-level domain analysis results for state domains for proportional allocation

Domain/State	Frame Schools	Expected School Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
CA	10,239	476	2.25 percent	4.41 percent	1.51
TX	8,639	492	2.31 percent	4.52 percent	1.64
NY	4,699	285	2.63 percent	5.15 percent	1.23
IL	4,113	227	3.10 percent	6.07 percent	1.36
FL	4,017	243	3.22 percent	6.31 percent	1.57
PA	3,102	181	3.30 percent	6.47 percent	1.23
OH	3,635	179	3.39 percent	6.64 percent	1.28
NC	2,583	151	3.64 percent	7.14 percent	1.25
NJ	2,490	155	3.68 percent	7.22 percent	1.31
GA	2,328	150	3.73 percent	7.31 percent	1.31
MI	3,481	159	3.77 percent	7.39 percent	1.41
VA	1,883	117	4.11 percent	8.06 percent	1.24
MO	2,296	113	4.35 percent	8.52 percent	1.33
MA	1,768	104	4.43 percent	8.68 percent	1.28
IN	1,891	101	4.45 percent	8.73 percent	1.25
TN	1,758	101	4.47 percent	8.76 percent	1.26
WI	2,142	101	4.86 percent	9.52 percent	1.49
MD	1,408	85	4.86 percent	9.53 percent	1.25
AZ	2,249	109	4.98 percent	9.76 percent	1.68
WA	2,267	102	4.99 percent	9.77 percent	1.58
AL	1,397	81	5.06 percent	9.91 percent	1.29
CO	1,782	86	5.06 percent	9.92 percent	1.38
OK	1,757	79	5.10 percent	9.99 percent	1.29
LA	1,373	75	5.28 percent	10.35 percent	1.30
SC	1,222	72	5.30 percent	10.39 percent	1.27
KY	1,385	72	5.62 percent	11.02 percent	1.42
MN	2,170	94	5.66 percent	11.10 percent	1.89
KS	1,349	64	5.69 percent	11.16 percent	1.30
IA	1,358	64	5.77 percent	11.31 percent	1.32
AR	1,064	57	5.84 percent	11.46 percent	1.22
CT	1,093	63	5.93 percent	11.62 percent	1.39
MS	1,050	55	6.37 percent	12.48 percent	1.38
OR	1,250	52	6.49 percent	12.72 percent	1.38
UT	965	47	6.93 percent	13.59 percent	1.43
NE	980	42	7.16 percent	14.04 percent	1.36
NM	889	41	7.42 percent	14.55 percent	1.40
WV	752	36	7.54 percent	14.78 percent	1.29
NV	649	34	8.43 percent	16.53 percent	1.52
ID	719	30	8.80 percent	17.24 percent	1.47
ME	583	27	8.80 percent	17.24 percent	1.33
NH	472	24	9.47 percent	18.56 percent	1.37
MT	832	25	10.03 percent	19.66 percent	1.58
SD	700	23	10.47 percent	20.53 percent	1.56
ND	492	19	10.75 percent	21.08 percent	1.39
HI	286	17	10.90 percent	21.36 percent	1.27
RI	297	16	11.18 percent	21.92 percent	1.25
WY	365	16	12.20 percent	23.90 percent	1.48
VT	305	14	12.30 percent	24.10 percent	1.34
DE	213	13	12.44 percent	24.39 percent	1.29
AK	516	18	12.92 percent	25.33 percent	1.83
DC	211	10	13.94 percent	27.32 percent	1.26

None of the states meet the 2.5 percent half-width benchmark in one study, but the largest two do if three studies are combined. The NCES statistical standards give a ‘caveat emptor’ warning when the CV of the estimate is 30 percent or more, and suppress the estimates altogether when the CV of the estimate is 50 percent or more (the 30 percent CV criterion is called the ‘NCES reporting standards’ criterion below). A 30 percent CV applied to our 20 percent sample percentage is a standard error of 6 percent. 31 states (above the line at CT) satisfy that criterion, with seven of the remaining 20 satisfying the criterion if two independent studies are put together (these correspond to states with expected standard errors between 6.0 percent and 8.5 percent). Four states meet the criterion if three independent studies are put together (these correspond to states with expected standard errors between 8.5 percent and 10.4 percent). Nine states will not meet the NCES reporting standards criterion with even three studies put together.

Table 6-3 presents results for the teacher-level estimates. The domains are the school domains, and the precision is given assuming all teachers sampled in that school domain are included in the estimates. Table 6-3 uses the formulas and assumptions given in Section 5 and Appendix C. Included in Table 6-3 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teachers estimates. The target half-width of 2.5 percent is achieved for all domains except charter schools and combined schools. Oversampling for these would be required to achieve the 2.5 percent half-width criterion. If three studies are combined, no oversampling is needed for either domain.

Table 6-3. Teacher domain analysis results for major domains for proportional allocation

Domain	Frame Full-Time Teachers (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width ¹	Design Effect	Studies Needed to Achieve 2.5 percent Half-width Criterion
All	3,088.3	25,000	0.41 percent	0.80 percent	2.60	1
Charter	132.7	1,075	1.97 percent	3.86 percent	2.60	3
Noncharter	2,955.5	23,925	0.42 percent	0.82 percent	2.60	1
Primary	1,490.6	12,067	0.59 percent	1.15 percent	2.60	1
Middle	543.2	4,397	0.97 percent	1.91 percent	2.60	1
High	908.4	7,354	0.75 percent	1.47 percent	2.60	1
Combined	146.0	1,182	1.88 percent	3.68 percent	2.60	3
City	904.8	7,325	0.75 percent	1.48 percent	2.60	1
Suburban	1,187.4	9,612	0.66 percent	1.29 percent	2.60	1
Town	364.2	2,948	1.19 percent	2.33 percent	2.60	1
Rural	631.8	5,115	0.90 percent	1.77 percent	2.60	1
High poverty	724.7	5,872	0.84 percent	1.65 percent	2.60	1
Low/medium poverty	2,363.6	19,128	0.47 percent	0.91 percent	2.60	1

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

Table 6-4 provides similar results for the state domains. All but 10 states (those below New Hampshire in the table) satisfy the NCES reporting standards criterion, and 9 of the remaining 10 satisfy the NCES reporting standards criterion if two independent studies are put together. Only DC would require three independent studies to achieve a 6 percent standard error.

Table 6-4. Teacher-estimate domain analysis results for state domains for proportional allocation

Domain/State	Frame FTE (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
TX	332.0	2,468	1.30 percent	2.55 percent	2.61
CA	267.4	2,459	1.30 percent	2.56 percent	2.61
NY	193.2	1,467	1.69 percent	3.32 percent	2.63
FL	176.2	1,228	1.85 percent	3.62 percent	2.62
IL	151.1	1,161	1.91 percent	3.74 percent	2.64
PA	117.8	928	2.13 percent	4.17 percent	2.62
OH	99.8	897	2.16 percent	4.24 percent	2.62
NJ	110.6	826	2.26 percent	4.42 percent	2.63
MI	83.3	792	2.30 percent	4.51 percent	2.62
GA	107.6	744	2.37 percent	4.65 percent	2.62
NC	98.4	731	2.39 percent	4.69 percent	2.62
VA	82.5	595	2.65 percent	5.20 percent	2.62
MA	69.5	556	2.75 percent	5.38 percent	2.62
MO	63.5	549	2.77 percent	5.42 percent	2.62
AZ	64.2	536	2.80 percent	5.48 percent	2.62
WA	54.4	528	2.82 percent	5.52 percent	2.62
IN	60.4	497	2.90 percent	5.69 percent	2.62
WI	56.4	493	2.92 percent	5.72 percent	2.62
TN	64.3	490	2.92 percent	5.73 percent	2.62
MN	52.6	465	3.02 percent	5.91 percent	2.65
MD	56.4	439	3.09 percent	6.06 percent	2.62
CO	48.3	427	3.13 percent	6.14 percent	2.62
AL	51.8	381	3.33 percent	6.52 percent	2.64
OK	41.4	376	3.35 percent	6.57 percent	2.64
LA	45.5	358	3.42 percent	6.71 percent	2.62
SC	47.4	353	3.45 percent	6.75 percent	2.62
KY	42.6	341	3.51 percent	6.87 percent	2.62
CT	42.3	337	3.53 percent	6.91 percent	2.62
KS	35.1	306	3.70 percent	7.26 percent	2.62
IA	33.9	303	3.72 percent	7.30 percent	2.62
AR	34.0	274	3.92 percent	7.68 percent	2.63
OR	25.5	259	4.03 percent	7.89 percent	2.63
MS	32.3	252	4.10 percent	8.03 percent	2.64
UT	26.6	243	4.16 percent	8.15 percent	2.62
NE	21.7	203	4.60 percent	9.02 percent	2.68
NM	22.2	190	4.69 percent	9.20 percent	2.62
NV	21.3	175	4.90 percent	9.61 percent	2.62
WV	19.9	170	4.98 percent	9.77 percent	2.63
ID	15.2	148	5.32 percent	10.43 percent	2.62
ME	14.8	127	5.74 percent	11.26 percent	2.62
NH	14.9	119	5.94 percent	11.63 percent	2.62
MT	10.2	115	6.24 percent	12.22 percent	2.79
SD	9.7	104	6.54 percent	12.82 percent	2.77
HI	11.5	86	6.98 percent	13.68 percent	2.62
RI	9.8	86	7.01 percent	13.74 percent	2.63
AK	7.7	79	7.35 percent	14.41 percent	2.68
WY	8.3	73	7.62 percent	14.93 percent	2.66
DE	9.3	66	8.11 percent	15.89 percent	2.72
VT	7.8	64	8.21 percent	16.10 percent	2.68
ND	10.2	89	8.47 percent	16.60 percent	4.01
DC	5.7	49	9.31 percent	18.25 percent	2.67

Table 6-5 presents results for the teacher-level within the teacher-specific domains, for both the all-school domain for all teacher-specific domains, and for middle/high schools for the four core subjects (math, science, English, social sciences). Table 6-5 uses the formulas and assumptions as given in Section 5 and Appendix D. Included in Table 6-5 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teachers estimates.

Table 6-5. Teacher domain analysis results for teacher-specific domains for proportional allocation

Teacher Domain	School Domain	Expected Domain Teacher Completed Interviews	Percent Teachers In Domain	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
Black	All	1,726	6.90 percent	1.10 percent	2.15 percent	1.30
Hispanic	All	1,874	7.49 percent	1.05 percent	2.07 percent	1.30
Special Ed	All	3,154	12.62 percent	0.81 percent	1.59 percent	1.30
Elementary General	All	7,920	31.68 percent	0.61 percent	1.20 percent	1.87
Math	All	2,042	8.17 percent	1.01 percent	1.98 percent	1.30
Science	All	1,644	6.57 percent	1.12 percent	2.20 percent	1.30
English	All	2,798	11.19 percent	0.87 percent	1.70 percent	1.31
Social Science	All	1,532	6.13 percent	1.17 percent	2.28 percent	1.30
Vo Tech	All	1,057	4.23 percent	1.40 percent	2.75 percent	1.30
Other	All	4,854	19.42 percent	0.67 percent	1.32 percent	1.38
Novice 1 to 3 years	All	2,779	11.11 percent	0.87 percent	1.70 percent	1.31
Exp 4 to 9 yrs	All	7,128	28.51 percent	0.57 percent	1.12 percent	1.46
Exp 10 to 19 yrs	All	8,570	34.28 percent	0.54 percent	1.06 percent	1.57
Exp 20+ yrs	All	6,523	26.09 percent	0.59 percent	1.16 percent	1.42
Math	Middle/High	1,717	6.87 percent	1.10 percent	2.16 percent	1.30
Science	Middle/High	1,410	5.64 percent	1.21 percent	2.38 percent	1.30
English	Middle/High	1,978	7.91 percent	1.03 percent	2.02 percent	1.32
Social Sci	Middle/High	1,329	5.31 percent	1.25 percent	2.45 percent	1.30

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

For the All-school Domain only the Vocational Technical domain is above the 2.5 percent criterion. Two studies will achieve the 2.5 percent half-width criterion for Vocational Technical teachers. Note that the design effects are smaller than those for the All-Teacher domain as we expect most of these teacher domains to cut across the schools, so that domain specific cluster sizes are much smaller than 5.

For the Middle/High School Domain, all of the core subjects are below the 2.5 percent line.

7

Oversampling Allocation I Results

The proportional allocation from Section 6 does not meet the tight 2.5 percent half-width criterion for charter and combined schools. The first oversampling option that we study oversamples as follows:

- Charter schools are sampled at a rate proportional to 3.0 times the measure of size;
- Noncharter combined schools are sampled at a rate proportional to 2.3 times the measure of size;
- All other schools are sampled at a rate proportional to 1.0 times the measure of size.

Table 7-1 below presents results from our calculation of expected completed interviews, expected standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for this proportional allocation. This analysis as in Section 6 uses the formulas given in Section 4 and Appendix B, with domains nesting in the strata for the ‘major domains’ of Table 7-1, and crossing the strata for Table 7-2. The domains are treated as if they are stand-alone populations, with sample size allocations proportional to the measure of size.

The oversampling rate of 3.0 for charter schools allows the charter school domain to attain the desired precision (2.5 percent half-width for confidence interval) in two studies. The oversampling rate of 2.3 for combined schools gives us the three-study benchmark for that domain. (This is reduced from the 6 studies required for charter schools and the 7 studies required for combined schools in Table 6-1.) The remaining domains satisfy the one-, two-, or three-study benchmarks.

Table 7-1. School-level domain analysis results for major domains for Oversampling Plan I

Domain	Frame Schools	Expected Completed Interview	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect	Studies Needed To Achieve 2.5 percent Half- width Criterion
All	95,464	5,000	0.69 percent	1.36 percent	1.50	1
Charter	6,254	669	1.80 percent	3.54 percent	1.36	2
Noncharter	89,210	4,331	0.73 percent	1.43 percent	1.44	1
Primary	52,868	2,524	0.92 percent	1.80 percent	1.33	1
Middle	14,912	769	1.70 percent	3.33 percent	1.39	2
High	21,199	1,141	1.60 percent	3.14 percent	1.84	2
Combined	6,485	565	2.22 percent	4.35 percent	1.74	3
City	25,818	1,550	1.23 percent	2.42 percent	1.48	1
Suburban	29,900	1,688	1.15 percent	2.25 percent	1.39	1
Town	12,785	598	1.98 percent	3.87 percent	1.46	3
Rural	26,961	1,164	1.46 percent	2.85 percent	1.54	2
High poverty	23,731	1,281	1.33 percent	2.61 percent	1.42	2
Low/medium poverty	71,733	3,719	0.81 percent	1.59 percent	1.52	1

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

Table 7-2 provides similar calculations for the state domains.

Table 7-2. Domain analysis results for state domains, Oversampling Plan I

State	Frame Schools	Expected Completed Interviews	Expected Std Err	95 percent CI Half-Width	Design Effect
CA	10,239	503	2.27 percent	4.46 percent	1.63
TX	8,639	496	2.34 percent	4.59 percent	1.70
NY	4,699	286	2.73 percent	5.36 percent	1.34
FL	4,017	275	2.90 percent	5.68 percent	1.44
IL	4,113	208	3.26 percent	6.39 percent	1.38
OH	3,635	185	3.41 percent	6.68 percent	1.34
PA	3,102	177	3.46 percent	6.79 percent	1.33
NC	2,583	147	3.77 percent	7.40 percent	1.31
MI	3,481	173	3.77 percent	7.40 percent	1.54
NJ	2,490	144	3.87 percent	7.59 percent	1.35
GA	2,328	142	3.89 percent	7.63 percent	1.34
VA	1,883	104	4.38 percent	8.58 percent	1.25
MO	2,296	106	4.46 percent	8.74 percent	1.31
IN	1,891	96	4.63 percent	9.07 percent	1.28
MA	1,768	99	4.67 percent	9.15 percent	1.35
TN	1,758	94	4.67 percent	9.15 percent	1.29
AZ	2,249	133	4.69 percent	9.19 percent	1.83
WI	2,142	102	4.73 percent	9.26 percent	1.42
AL	1,397	95	4.90 percent	9.61 percent	1.42
CO	1,782	94	5.06 percent	9.92 percent	1.50
WA	2,267	94	5.06 percent	9.92 percent	1.50
MD	1,408	80	5.11 percent	10.01 percent	1.30
LA	1,373	81	5.25 percent	10.29 percent	1.39
OK	1,757	71	5.47 percent	10.73 percent	1.32
SC	1,222	67	5.51 percent	10.79 percent	1.27
MN	2,170	100	5.63 percent	11.04 percent	1.99
KY	1,385	66	5.77 percent	11.31 percent	1.37
KS	1,349	58	6.00 percent	11.75 percent	1.31
AR	1,064	54	6.15 percent	12.05 percent	1.27
IA	1,358	57	6.16 percent	12.07 percent	1.35
CT	1,093	58	6.27 percent	12.30 percent	1.44
MS	1,050	52	6.47 percent	12.68 percent	1.36
OR	1,250	53	6.54 percent	12.82 percent	1.42
UT	965	52	7.03 percent	13.78 percent	1.59
NM	889	41	7.58 percent	14.85 percent	1.48
NE	980	37	7.66 percent	15.01 percent	1.36
WV	752	34	7.87 percent	15.42 percent	1.33
NV	649	34	8.60 percent	16.86 percent	1.57
ID	719	31	8.98 percent	17.60 percent	1.58
ME	583	24	9.41 percent	18.45 percent	1.35
NH	472	22	9.84 percent	19.29 percent	1.34
MT	832	22	10.79 percent	21.16 percent	1.59
AK	516	23	10.88 percent	21.33 percent	1.67
HI	286	18	10.92 percent	21.39 percent	1.31
SD	700	21	11.06 percent	21.69 percent	1.59
ND	492	17	11.50 percent	22.54 percent	1.40
RI	297	15	11.68 percent	22.90 percent	1.30
DC	211	17	12.12 percent	23.75 percent	1.57
DE	213	15	12.26 percent	24.03 percent	1.40
WY	365	15	12.92 percent	25.32 percent	1.61
VT	305	13	13.06 percent	25.60 percent	1.42

None of the states meet the 2.5 percent half-width benchmark in one study, but the largest two do if three studies are combined. Using the NCES reporting standards criterion (6 percent standard error), 28 states (above the line at KS) satisfy that criterion, with nine of the remaining 23 satisfying the criterion if two independent studies are put together (these correspond to states with expected standard errors between 6.0 percent and 8.5 percent). Four states meet the criterion if three independent studies are put together (these correspond to states with expected standard errors between 8.5 percent and 10.4 percent). Ten states will not meet the NCES reporting standards criterion with even three studies put together. This is all somewhat worse than the results under proportional allocation (see Table 6-2). We would expect some degradation of state domain standard errors when charter and combined schools are oversampled.

Table 7-3 presents results for the teacher-level estimates for Oversampling Plan I. Table 7-3 uses the formulas and assumptions as given in Section 5 and Appendix C. Included in Table 7-3 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teachers estimates.

Table 7-3. Teacher domain analysis results for major domains for Oversampling Plan I

Domain	Frame Full-Time Equivalent Teachers (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width	Design Effect
All	3,088.3	25,000	0.42 percent	0.83 percent	2.80
Charter	132.7	2,852	1.21 percent	2.37 percent	2.60
Noncharter	2,955.5	22,148	0.44 percent	0.86 percent	2.67
Primary	1,490.6	11,527	0.62 percent	1.21 percent	2.73
Middle	543.2	4,031	1.03 percent	2.01 percent	2.66
High	908.4	6,834	0.79 percent	1.55 percent	2.69
Combined	146.0	2,609	1.27 percent	2.49 percent	2.64
City	904.8	7,883	0.77 percent	1.51 percent	2.92
Suburban	1,187.4	9,274	0.69 percent	1.35 percent	2.74
Town	364.2	2,785	1.25 percent	2.44 percent	2.70
Rural	631.8	5,058	0.94 percent	1.83 percent	2.77
High poverty	724.7	6,128	0.87 percent	1.70 percent	2.87
Low/medium poverty	3,088.3	18,872	0.48 percent	0.95 percent	2.77

The target half-width of 2.5 percent is achieved for all school-level domains under Oversampling Plan I, unlike the proportional allocation plan. Table 7-4 provides similar results for the state domains. All but 12 states (those below Idaho in the table) satisfy the NCES reporting standards criterion, and 10 of the remaining 12 satisfy the NCES reporting standards criterion if two independent studies are put together. Only Vermont and DC would require three independent studies to achieve a 6 percent standard error. This is very similar to proportional allocation.

Table 7-4. Teacher-estimate domain analysis results for state domains for Oversampling Plan I

Domain/State	Frame FTE (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
CA	267.4	2,566	1.33 percent	2.62 percent	2.86
TX	332.0	2,486	1.35 percent	2.65 percent	2.85
NY	193.2	1,469	1.74 percent	3.41 percent	2.78
FL	176.2	1,358	1.89 percent	3.71 percent	3.05
IL	151.1	1,077	2.00 percent	3.92 percent	2.69
PA	117.8	913	2.19 percent	4.30 percent	2.74
OH	99.8	922	2.23 percent	4.36 percent	2.85
MI	83.3	856	2.33 percent	4.57 percent	2.90
NJ	110.6	775	2.37 percent	4.65 percent	2.73
GA	107.6	706	2.48 percent	4.87 percent	2.72
NC	98.4	715	2.50 percent	4.89 percent	2.78
AZ	64.2	641	2.80 percent	5.49 percent	3.14
VA	82.5	540	2.81 percent	5.50 percent	2.66
MA	69.5	531	2.86 percent	5.61 percent	2.72
MO	63.5	520	2.90 percent	5.69 percent	2.74
WA	54.4	492	2.98 percent	5.84 percent	2.73
IN	60.4	479	3.04 percent	5.95 percent	2.76
WI	56.4	493	3.04 percent	5.97 percent	2.85
TN	64.3	465	3.07 percent	6.02 percent	2.74
MN	52.6	489	3.12 percent	6.11 percent	2.97
CO	48.3	460	3.16 percent	6.20 percent	2.88
AL	51.8	443	3.23 percent	6.33 percent	2.88
MD	56.4	417	3.25 percent	6.37 percent	2.75
LA	45.5	384	3.47 percent	6.80 percent	2.89
OK	41.4	341	3.55 percent	6.95 percent	2.68
SC	47.4	332	3.63 percent	7.11 percent	2.73
KY	42.6	318	3.70 percent	7.25 percent	2.72
CT	42.3	313	3.71 percent	7.27 percent	2.70
KS	35.1	282	3.90 percent	7.65 percent	2.68
IA	33.9	277	3.93 percent	7.71 percent	2.67
AR	34.0	258	4.10 percent	8.03 percent	2.70
OR	25.5	260	4.19 percent	8.22 percent	2.86
UT	26.6	263	4.21 percent	8.25 percent	2.91
MS	32.3	242	4.27 percent	8.36 percent	2.75
NE	21.7	181	4.89 percent	9.58 percent	2.70
NM	22.2	193	4.89 percent	9.59 percent	2.90
NV	21.3	173	5.10 percent	10.00 percent	2.82
WV	19.9	162	5.20 percent	10.20 percent	2.74
ID	15.2	153	5.49 percent	10.76 percent	2.88
ME	14.8	115	6.08 percent	11.92 percent	2.66
NH	14.9	109	6.29 percent	12.33 percent	2.70
MT	10.2	102	6.62 percent	12.98 percent	2.80
SD	9.7	96	6.86 percent	13.44 percent	2.82
HI	11.5	88	7.25 percent	14.22 percent	2.89
AK	7.7	100	7.35 percent	14.40 percent	3.37
RI	9.8	82	7.35 percent	14.40 percent	2.76
WY	8.3	72	7.86 percent	15.40 percent	2.77
DE	9.3	73	8.03 percent	15.74 percent	2.94
DC	5.7	78	8.05 percent	15.77 percent	3.15
VT	7.8	61	8.56 percent	16.77 percent	2.79
ND	10.2	81	8.98 percent	17.61 percent	4.07

Table 7-5 presents results for the teacher-level within the teacher-specific domains, for both the all-school domain for all teacher-specific domains, and for middle/high schools for the four core subjects (math, science, English, social sciences). Table 7-5 uses the formulas and assumptions as given in Section 5 and Appendix D. Included in Table 7-5 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teachers estimates.

Table 7-5. Teacher domain analysis results for teacher-specific domains for oversampling Plan I

Teacher Domain	School Domain	Expected Domain Teacher Completed Interviews	Percent Teachers in Domain	Expected Standard Error	95 percent Confidence Interval Half-Width ¹	Design Effect
Black	All	1,761	7.04 percent	1.14 percent	2.22 percent	1.42
Hispanic	All	1,887	7.55 percent	1.09 percent	2.14 percent	1.41
Special Ed	All	3,137	12.55 percent	0.84 percent	1.65 percent	1.39
Elementary General	All	7,802	31.21 percent	0.65 percent	1.27 percent	2.03
Math	All	2,056	8.22 percent	1.05 percent	2.05 percent	1.41
Science	All	1,656	6.62 percent	1.17 percent	2.28 percent	1.41
English	All	2,816	11.26 percent	0.90 percent	1.76 percent	1.42
Social Sciences	All	1,540	6.16 percent	1.21 percent	2.37 percent	1.40
Vocational Tech	All	1,024	4.10 percent	1.46 percent	2.87 percent	1.37
Other	All	4,969	19.88 percent	0.70 percent	1.37 percent	1.51
Novice 1 to 3 years	All	3,069	12.28 percent	0.88 percent	1.72 percent	1.48
Exp 4 to 9 yrs	All	7,279	29.12 percent	0.59 percent	1.16 percent	1.61
Exp 10 to 19 yrs	All	8,292	33.17 percent	0.57 percent	1.11 percent	1.67
Exp 20+ yrs	All	6,359	25.44 percent	0.62 percent	1.21 percent	1.51
Math	Middle/High	1,605	6.42 percent	1.16 percent	2.27 percent	1.35
Science	Middle/High	1,312	5.25 percent	1.28 percent	2.51 percent	1.34
English	Middle/High	1,837	7.35 percent	1.09 percent	2.14 percent	1.37
Social Sci	Middle/High	1,231	4.92 percent	1.32 percent	2.59 percent	1.34

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

For the All-School Domain, only the Vocational Technical domain is above the 2.5 percent criterion, as occurred for the proportional allocation, but the expected standard error for Vocational Technical estimates is higher under this allocation than under proportional allocation. Two studies will certainly achieve the 2.5 percent half-width criterion for Vocational Technical teachers. In general the design effects for teacher domains are higher than for proportional allocation. This occurs mainly because of the differential weighting of schools caused by the oversampling.

For the Middle/High School Domain, the two core subjects Science and Social Sciences are over the 2.5 percent line. Two studies will achieve the 2.5 percent half-width criterion for these Science and Social Sciences within the Middle/High Domain. The results are worse than the proportional allocation results for Middle/High because Combined schools are oversampled in this approach. If we can add Combined schools to the Middle/High School Domain, then the results should be that all of the core subjects will be close to or below the 2.5 percent line from a single study.

8

Oversampling Allocation II Results

The second oversampling option that we study oversamples as follows:

- Charter schools are sampled at a rate proportional to 3.1 times the measure of size;
- Noncharter combined schools are sampled at a rate proportional to 2.4 times the measure of size;
- Noncharter non-combined town schools are sampled at a rate proportional to 1.27 times the measure of size.
- All other schools are sampled at a rate proportional to 1.0 times the measure of size.

The only substantive difference between Oversampling Plan II and I is that we oversample town schools in Plan II. The town school domain had the highest variances after charter schools and combined schools. The charter school and combined school oversampling rates were increased a little bit to offset the effects of oversampling town schools (to get the expected standard errors back to the goals).

Table 8-1 presents results from our calculation of expected completed interviews, expected standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for this proportional allocation. This analysis as in Sections 6 and 7 uses the formulas given in Section 4 and Appendix B, with domains nesting in the strata for the ‘major domains’ of Table 8-1, and crossing the strata for Table 8-2. The domains are treated as if they are stand-alone populations, with sample size allocations proportional to the measure of size, and then the strata are nested within each domain with the calculations following Section 4.

The oversampling rate of 3.1 for charter schools allowed the charter school domain to meet the two-study benchmark. The oversampling rate of 2.4 for combined schools gives us the three-study benchmark for that domain. The oversampling rate of 1.27 for town schools reduces from three-study to two-study the benchmark for that domain. The remaining domains satisfy the one- or two-study benchmarks.

Table 8-1. School-level domain analysis results for major domains for Oversampling Plan II

Domain	Frame Schools	Expected Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect	Studies Needed to Achieve 2.5 percent Half-width Criterion
All	95,464	5,000	0.69 percent	1.36 percent	1.50	1
Charter	6,254	667	1.81 percent	3.54 percent	1.36	2
Noncharter	89,210	4,333	0.73 percent	1.43 percent	1.45	1
Primary	52,868	2,515	0.92 percent	1.81 percent	1.34	1
Middle	14,912	772	1.70 percent	3.33 percent	1.39	2
High	21,199	1,145	1.60 percent	3.14 percent	1.83	2
Combined	6,485	568	2.21 percent	4.34 percent	1.74	3
City	25,818	1,513	1.25 percent	2.46 percent	1.49	1
Suburban	29,900	1,639	1.17 percent	2.29 percent	1.40	1
Town	12,785	716	1.79 percent	3.51 percent	1.43	2
Rural	26,961	1,132	1.48 percent	2.90 percent	1.55	2
High poverty	23,731	1,275	1.34 percent	2.62 percent	1.42	2
Low/medium poverty	71,733	3,725	0.81 percent	1.59 percent	1.53	1

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

Table 8-2 provides similar calculations for the state domains (except that effective completed interviews are provided rather than design effects). None of the states meet the 2.5 percent half-width benchmark in one study, but the largest two do if three studies are combined. Using the NCES reporting standards criterion (6 percent standard error), 28 states (above the line at KS) satisfy that criterion, with nine of the remaining 23 satisfying the criterion if two independent studies are put together (these correspond to states with expected standard errors between 6.0 percent and 8.5 percent). Four states meet the criterion if three independent studies are put together (these correspond to states with expected standard errors between 8.5 percent and 10.4 percent). Ten states will not meet the NCES reporting standards criterion with even three studies put together. This is all somewhat worse than the results under proportional allocation (see Table 6-2), but the same as with Oversampling Plan I.

Table 8-2. Domain analysis results for state domains, Oversampling Plan II

State	Frame Schools	Expected Completed Interview	Expected Std Err	95 percent CI Half-Width	Design Effect
CA	10,239	497	2.29 percent	4.48 percent	1.62
TX	8,639	495	2.34 percent	4.59 percent	1.70
NY	4,699	283	2.76 percent	5.41 percent	1.34
FL	4,017	271	2.92 percent	5.72 percent	1.44
IL	4,113	207	3.27 percent	6.41 percent	1.38
OH	3,635	185	3.41 percent	6.68 percent	1.35
PA	3,102	176	3.49 percent	6.83 percent	1.33
MI	3,481	173	3.78 percent	7.41 percent	1.55
NC	2,583	146	3.79 percent	7.42 percent	1.31
GA	2,328	141	3.90 percent	7.64 percent	1.34
NJ	2,490	140	3.93 percent	7.70 percent	1.35
VA	1,883	103	4.41 percent	8.65 percent	1.25
MO	2,296	107	4.45 percent	8.73 percent	1.33
IN	1,891	97	4.62 percent	9.06 percent	1.29
TN	1,758	95	4.67 percent	9.16 percent	1.30
AZ	2,249	133	4.69 percent	9.18 percent	1.83
WI	2,142	103	4.71 percent	9.24 percent	1.43
MA	1,768	97	4.74 percent	9.29 percent	1.36
AL	1,397	95	4.90 percent	9.61 percent	1.43
WA	2,267	94	5.06 percent	9.92 percent	1.51
CO	1,782	93	5.08 percent	9.96 percent	1.51
MD	1,408	78	5.18 percent	10.15 percent	1.31
LA	1,373	81	5.22 percent	10.23 percent	1.39
OK	1,757	72	5.46 percent	10.69 percent	1.35
SC	1,222	67	5.52 percent	10.82 percent	1.28
MN	2,170	102	5.60 percent	10.97 percent	1.99
KY	1,385	68	5.73 percent	11.23 percent	1.39
KS	1,349	60	5.95 percent	11.66 percent	1.34
IA	1,358	59	6.11 percent	11.98 percent	1.37
AR	1,064	55	6.11 percent	11.98 percent	1.28
CT	1,093	57	6.35 percent	12.44 percent	1.44
MS	1,050	54	6.37 percent	12.48 percent	1.37
OR	1,250	54	6.49 percent	12.72 percent	1.43
UT	965	52	7.05 percent	13.82 percent	1.60
NM	889	43	7.51 percent	14.72 percent	1.50
NE	980	38	7.66 percent	15.02 percent	1.38
WV	752	35	7.86 percent	15.41 percent	1.35
NV	649	34	8.63 percent	16.92 percent	1.57
ID	719	32	8.91 percent	17.45 percent	1.60
ME	583	25	9.46 percent	18.55 percent	1.37
NH	472	22	9.88 percent	19.37 percent	1.35
HI	286	18	10.80 percent	21.16 percent	1.31
AK	516	23	10.84 percent	21.24 percent	1.69
MT	832	23	10.88 percent	21.33 percent	1.67
SD	700	21	11.15 percent	21.85 percent	1.64
ND	492	17	11.56 percent	22.66 percent	1.43
RI	297	15	11.89 percent	23.31 percent	1.31
DE	213	15	12.28 percent	24.06 percent	1.41
DC	211	17	12.29 percent	24.09 percent	1.59
WY	365	16	12.80 percent	25.09 percent	1.67
VT	305	14	13.11 percent	25.69 percent	1.47

Table 8-3 presents results for the teacher-level estimates for Oversampling Plan II. Table 8-3 uses the formulas and assumptions as given in Section 5 and Appendix C. Included in Table 8-3 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teacher estimates.

Table 8-3. Teacher domain analysis results for major domains for Oversampling Plan II

Domain	Frame Full-Time Equivalent Teachers (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width	Design Effect
All	3,088.3	25,000	0.42 percent	0.83 percent	2.82
Charter	132.7	2,851	1.21 percent	2.37 percent	2.60
Noncharter	2,955.5	22,149	0.44 percent	0.86 percent	2.68
Primary	1,490.6	11,501	0.62 percent	1.21 percent	2.75
Middle	543.2	4,038	1.03 percent	2.02 percent	2.68
High	908.4	6,837	0.80 percent	1.56 percent	2.70
Combined	146.0	2,625	1.27 percent	2.48 percent	2.63
City	904.8	7,701	0.78 percent	1.53 percent	2.94
Suburban	1,187.4	9,013	0.70 percent	1.37 percent	2.75
Town	364.2	3,357	1.13 percent	2.21 percent	2.66
Rural	631.8	4,928	0.95 percent	1.86 percent	2.78
High poverty	724.7	6,099	0.87 percent	1.71 percent	2.89
Low/medium poverty	3,088.3	18,901	0.49 percent	0.95 percent	2.79

The target half-width of 2.5 percent is achieved for all school-level domains under Oversampling Plan II, as in Oversampling Plan I, but unlike the proportional allocation plan.

Table 8-4 provides similar results for the state domains. As with Oversampling Plan I, all but 12 states (those below Idaho in the table) satisfy the NCES reporting standards criterion, and 11 of the remaining 12 satisfy the NCES reporting standards criterion if two independent studies are put together. Only DC in this case would require three independent studies to achieve a 6 percent standard error.

Table 8-4. Teacher-estimate domain analysis results for state domains for Oversampling Plan II

Domain/State	Frame FTE (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
CA	267.4	2,536	1.35%	2.64%	2.88
TX	332.0	2,483	1.36%	2.67%	2.87
NY	193.2	1,454	1.76%	3.44%	2.80
FL	176.2	1,340	1.92%	3.75%	3.07
IL	151.1	1,073	2.01%	3.94%	2.71
PA	117.8	907	2.21%	4.32%	2.76
OH	99.8	925	2.23%	4.37%	2.87
MI	83.3	856	2.34%	4.58%	2.92
NJ	110.6	756	2.41%	4.72%	2.74
GA	107.6	705	2.49%	4.89%	2.74
NC	98.4	713	2.51%	4.92%	2.80
AZ	64.2	641	2.81%	5.51%	3.16
VA	82.5	533	2.83%	5.55%	2.67
MO	63.5	528	2.88%	5.65%	2.74
MA	69.5	518	2.90%	5.69%	2.73
WA	54.4	492	2.99%	5.85%	2.74
WI	56.4	500	3.02%	5.93%	2.86
IN	60.4	483	3.03%	5.95%	2.78
TN	64.3	469	3.06%	5.99%	2.74
MN	52.6	497	3.09%	6.06%	2.97
CO	48.3	458	3.18%	6.23%	2.89
AL	51.8	446	3.22%	6.32%	2.90
MD	56.4	408	3.29%	6.44%	2.76
LA	45.5	388	3.46%	6.79%	2.91
OK	41.4	350	3.51%	6.88%	2.69
SC	47.4	332	3.64%	7.13%	2.75
KY	42.6	327	3.66%	7.16%	2.73
CT	42.3	307	3.76%	7.36%	2.70
KS	35.1	292	3.84%	7.52%	2.69
IA	33.9	285	3.88%	7.61%	2.69
AR	34.0	264	4.05%	7.94%	2.71
OR	25.5	267	4.14%	8.12%	2.86
MS	32.3	252	4.20%	8.22%	2.78
UT	26.6	263	4.22%	8.27%	2.92
NM	22.2	199	4.84%	9.49%	2.92
NE	21.7	184	4.85%	9.51%	2.72
NV	21.3	172	5.14%	10.07%	2.85
WV	19.9	165	5.16%	10.12%	2.75
ID	15.2	157	5.42%	10.62%	2.88
ME	14.8	116	6.06%	11.88%	2.67
NH	14.9	109	6.29%	12.34%	2.71
MT	10.2	106	6.44%	12.63%	2.74
SD	9.7	99	6.73%	13.20%	2.79
HI	11.5	90	7.19%	14.08%	2.90
AK	7.7	102	7.26%	14.22%	3.36
RI	9.8	80	7.47%	14.64%	2.77
WY	8.3	76	7.63%	14.95%	2.76
DE	9.3	73	8.02%	15.73%	2.95
DC	5.7	77	8.15%	15.97%	3.19
VT	7.8	63	8.38%	16.42%	2.75
ND	10.2	82	9.04%	17.71%	4.16

Table 8-5 presents results for the teacher-level within the teacher-specific domains, for both the all-school domain for all teacher-specific domains, and for middle/high schools for the four core subjects (math, science, English, social sciences). Table 8-5 uses the formulas and assumptions as given in Section 5 and Appendix D. Included in Table 8-5 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teachers estimates.

Table 8-5. Teacher domain analysis results for teacher-specific domains for Oversampling Plan II

Teacher Domain	School Domain	Expected Domain Teacher Completed Interviews	Percent Teachers In Domain	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
Black	All	1,741	6.96%	1.15%	2.24%	1.43
Hispanic	All	1,871	7.48%	1.10%	2.16%	1.42
Spec Ed	All	3,140	12.56%	0.84%	1.66%	1.40
Elem Gen	All	7,793	31.17%	0.65%	1.27%	2.05
Math	All	2,053	8.21%	1.05%	2.06%	1.42
Science	All	1,656	6.63%	1.17%	2.29%	1.41
English	All	2,822	11.29%	0.90%	1.77%	1.43
Social Sci	All	1,541	6.17%	1.21%	2.37%	1.41
Vo Tech	All	1,033	4.13%	1.46%	2.87%	1.38
Other	All	4,961	19.84%	0.70%	1.37%	1.52
Novice 1 to 3 years	All	3,076	12.31%	0.88%	1.73%	1.49
Exp 4 to 9 yrs	All	7,264	29.06%	0.60%	1.17%	1.62
Exp 10 to 19 yrs	All	8,280	33.12%	0.57%	1.12%	1.69
Exp 20+ yrs	All	6,379	25.52%	0.62%	1.21%	1.52
Math	Middle/High	1,603	6.41%	1.16%	2.28%	1.36
Science	Middle/High	1,311	5.24%	1.28%	2.52%	1.35
English	Middle/High	1,839	7.36%	1.09%	2.14%	1.38
Social Sci	Middle/High	1,232	4.93%	1.32%	2.59%	1.35

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

For the All-School Domain only the Vocational Technical domain is above the 2.5 percent criterion, as in Oversampling Plan I. Two studies will achieve the goal for Vocational Technical teachers. In general the design effects are worse than for the proportional allocation, and Oversampling Plan II is a little worse than Oversampling Plan I.

For the Middle/High School Domain, the results are similar to Oversampling Plan I: the two core subjects Science and Social Sciences are over the 2.5 percent line. Two studies will achieve the goals for these two core subjects within the Middle/High Domain.

Oversampling Allocation III Results

The third oversampling option that we study decreases the sample size in noncharter primary schools to allow larger sample sizes in the other strata. It oversamples as follows:

- Charter schools are sampled at a rate proportional to 3.2 times the measure of size;
- There are variable sampling rates for all four school level categories:
 - Noncharter combined schools are sampled at a rate proportional to 2.4 times the measure of size;
 - Noncharter middle schools are sampled at a rate proportional to 1.55 times the measure of size;
 - Noncharter high schools are sampled at a rate proportional to 1.08 times the measure of size;
 - Noncharter primary schools are sampled at a rate proportional to 0.8 times the measure of size;
- Noncharter town schools are sampled at a rate proportional to 1.27 times higher than the rate they have from their school level status (e.g., noncharter town high schools are sampled at a rate of 1.37 times their measure of size: 1.27 times 1.08);

Oversampling Plan III as compared to Oversampling Plan II significantly increases the expected completed interview for noncharter middle and high schools at the expense of noncharter primary schools. In Oversampling Plan II, primary schools have a relatively low standard error, so Oversampling Plan III re-distributes some of the allocation from primary schools to other strata with lower precision in Oversampling Plan II.

Table 9-1 presents results from our calculation of expected completed interviews, expected standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for this proportional allocation. This analysis as in Sections 6 and 7 uses the formulas given in Section 4 and Appendix B, with domains nesting in the strata for the ‘major domains’ of Table 9-1, and crossing the strata for Table 9-2. The domains are treated as if they are stand-alone populations, with sample size allocations proportional to the measure of size.

The oversampling rate for middle schools reduces considerably the standard errors for middle schools and high schools considerably, although still requiring two studies to achieve the 2.5 percent goal. Charter schools and combined schools stay steady as compared to Oversampling Plan II. Primary schools as expected are reduced in expected completed interview and precision. But there is collateral damage: many other domains now have higher standard errors, including the national estimate itself, and city schools now require two studies to meet the goal.

Table 9-1. School-level domain analysis results for major domains for Oversampling Plan III

Domain	Frame Schools	Expected Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect	Studies Needed To Achieve 2.5 percent Half-width Criterion
All	95,464	5,000	0.72 percent	1.40 percent	1.60	1
Charter	6,254	677	1.79 percent	3.51 percent	1.36	2
Noncharter	89,210	4,323	0.76 percent	1.48 percent	1.54	1
Primary	52,868	2,050	1.04 percent	2.05 percent	1.40	1
Middle	14,912	1,007	1.47 percent	2.87 percent	1.35	2
High	21,199	1,379	1.44 percent	2.82 percent	1.79	2
Combined	6,485	564	2.23 percent	4.37 percent	1.75	3
City	25,818	1,494	1.31 percent	2.56 percent	1.59	2
Suburban	29,900	1,634	1.22 percent	2.39 percent	1.52	1
Town	12,785	731	1.81 percent	3.54 percent	1.49	2
Rural	26,961	1,140	1.52 percent	2.97 percent	1.64	2
High poverty	23,731	1,218	1.41 percent	2.76 percent	1.51	2
Low/medium poverty	71,733	3,782	0.83 percent	1.63 percent	1.63	1

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

Table 9-2 provides similar calculations for the state domains (except that effective completed interviews are provided rather than design effects). Using the NCES reporting standards criterion (6 percent standard error), 27 states (above the line at KS) satisfy that criterion, with 10 of the remaining 24 satisfying the criterion if two independent studies are put together (these correspond to states with expected standard errors between 6.0 percent and 8.5 percent). Three states meet the criterion if three independent studies are put together (these correspond to states with expected standard errors between 8.5 percent and 10.4 percent). 11 states will not meet the NCES reporting standards criterion with even three studies put together. In general, the results are worse than all of the other plans. Oversampling Plan III gains precision for middle and high schools at the expense of state estimates.

Table 9-2. Domain analysis results for state domains, Oversampling Plan III

State	Frame Schools	Expected Completed Interview	Expected Std Err	95 percent CI Half-Width	Design Effect
TX	8,639	499	2.35 percent	4.61 percent	1.72
CA	10,239	494	2.37 percent	4.65 percent	1.74
NY	4,699	283	2.86 percent	5.61 percent	1.45
FL	4,017	268	3.03 percent	5.93 percent	1.54
IL	4,113	205	3.41 percent	6.69 percent	1.49
OH	3,635	189	3.52 percent	6.90 percent	1.46
PA	3,102	177	3.66 percent	7.16 percent	1.48
MI	3,481	175	3.84 percent	7.53 percent	1.62
NC	2,583	147	3.93 percent	7.71 percent	1.42
GA	2,328	142	4.02 percent	7.88 percent	1.44
NJ	2,490	139	4.14 percent	8.12 percent	1.49
MO	2,296	108	4.60 percent	9.02 percent	1.43
VA	1,883	104	4.70 percent	9.20 percent	1.43
AZ	2,249	132	4.75 percent	9.31 percent	1.86
WI	2,142	103	4.83 percent	9.47 percent	1.50
IN	1,891	97	4.86 percent	9.53 percent	1.44
TN	1,758	95	4.88 percent	9.56 percent	1.41
MA	1,768	97	5.01 percent	9.81 percent	1.52
AL	1,397	92	5.15 percent	10.09 percent	1.52
WA	2,267	94	5.17 percent	10.12 percent	1.57
CO	1,782	93	5.26 percent	10.30 percent	1.60
MN	2,170	103	5.46 percent	10.70 percent	1.91
LA	1,373	80	5.46 percent	10.70 percent	1.49
MD	1,408	77	5.49 percent	10.77 percent	1.45
OK	1,757	73	5.56 percent	10.90 percent	1.40
SC	1,222	68	5.71 percent	11.20 percent	1.38
KY	1,385	67	5.91 percent	11.58 percent	1.47
KS	1,349	61	6.16 percent	12.07 percent	1.44
IA	1,358	60	6.26 percent	12.26 percent	1.46
AR	1,064	56	6.30 percent	12.35 percent	1.40
MS	1,050	55	6.44 percent	12.62 percent	1.43
CT	1,093	57	6.54 percent	12.82 percent	1.53
OR	1,250	54	6.80 percent	13.33 percent	1.57
UT	965	50	7.46 percent	14.63 percent	1.75
NM	889	42	7.72 percent	15.14 percent	1.58
NE	980	38	7.98 percent	15.64 percent	1.50
WV	752	34	8.32 percent	16.31 percent	1.49
NV	649	33	9.02 percent	17.68 percent	1.70
ID	719	32	9.16 percent	17.95 percent	1.70
ME	583	24	10.10 percent	19.80 percent	1.55
NH	472	22	10.49 percent	20.55 percent	1.54
MT	832	23	11.10 percent	21.75 percent	1.77
AK	516	23	11.15 percent	21.85 percent	1.77
SD	700	22	11.26 percent	22.07 percent	1.71
HI	286	18	11.55 percent	22.63 percent	1.47
ND	492	17	12.01 percent	23.54 percent	1.54
RI	297	15	12.63 percent	24.75 percent	1.50
DE	213	15	12.74 percent	24.97 percent	1.53
DC	211	17	12.97 percent	25.43 percent	1.76
WY	365	16	13.43 percent	26.32 percent	1.83
VT	305	13	14.33 percent	28.09 percent	1.68

Table 9-3 presents results for the teacher-level estimates for Oversampling Plan III. Table 9-3 uses the formulas and assumptions as given in Section 5. Included in Table 9-3 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teacher estimates.

Table 9-3. Teacher domain analysis results for major domains for Oversampling Plan III

Domain	Frame Full-Time Equivalent Teachers (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
All	3,088.3	25,000	0.44 percent	0.85 percent	2.97
Charter	132.7	2,833	1.21 percent	2.38 percent	2.60
Noncharter	2,955.5	22,167	0.45 percent	0.89 percent	2.83
Primary	1,490.6	9,141	0.70 percent	1.38 percent	2.83
Middle	543.2	5,182	0.90 percent	1.77 percent	2.65
High	908.4	8,123	0.73 percent	1.42 percent	2.67
Combined	146.0	2,553	1.29 percent	2.52 percent	2.64
City	904.8	7,604	0.81 percent	1.58 percent	3.11
Suburban	1,187.4	9,074	0.72 percent	1.40 percent	2.90
Town	364.2	3,402	1.15 percent	2.25 percent	2.81
Rural	631.8	4,920	0.97 percent	1.91 percent	2.92
High poverty	724.7	5,757	0.92 percent	1.81 percent	3.08
Low/medium poverty	2,363.6	19,243	0.49 percent	0.97 percent	2.93

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

The target half-width of 2.5 percent is roughly achieved for all school-level domains under Oversampling Plan III, as in Oversampling Plans I and II, but unlike the proportional allocation plan. Combined schools are actually slightly over the line (at 2.52 percent). Middle and high school teacher estimates are much more accurate under Oversampling Plan III, at the expense of primary teacher estimates, although the latter group remains the most accurate.

Table 9-4 provides similar results for the state domains. The results for Oversampling Plan III are not as good as those for Oversampling Plans I and II. In this case 12 states (those below Idaho in the table) do not satisfy the NCES reporting standards criterion, and in this case three of these 12 states do not satisfy the NCES reporting standards criterion if two independent studies are put together. In Oversampling Plans I and II, only 11 states failed to meet the criterion in one study, and all states met the criterion if two studies were put together.

Table 9-4. Teacher-estimate domain analysis results for state domains for Oversampling Plan III

Domain/State	Frame FTE (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
CA	267.4	2,523	1.38 percent	2.70 percent	2.99
TX	332.0	2,497	1.39 percent	2.72 percent	3.01
NY	193.2	1,459	1.81 percent	3.55 percent	2.98
FL	176.2	1,323	1.99 percent	3.90 percent	3.28
IL	151.1	1,065	2.06 percent	4.04 percent	2.82
PA	117.8	919	2.25 percent	4.40 percent	2.90
OH	99.8	940	2.26 percent	4.44 percent	3.01
MI	83.3	864	2.39 percent	4.69 percent	3.09
NJ	110.6	757	2.46 percent	4.81 percent	2.85
GA	107.6	708	2.57 percent	5.03 percent	2.91
NC	98.4	716	2.57 percent	5.04 percent	2.96
VA	82.5	538	2.86 percent	5.60 percent	2.74
AZ	64.2	630	2.94 percent	5.75 percent	3.39
MA	69.5	524	2.95 percent	5.77 percent	2.84
MO	63.5	533	2.96 percent	5.80 percent	2.92
IN	60.4	487	3.07 percent	6.02 percent	2.87
WA	54.4	496	3.08 percent	6.03 percent	2.93
WI	56.4	500	3.11 percent	6.10 percent	3.03
TN	64.3	466	3.17 percent	6.22 percent	2.93
MN	52.6	501	3.21 percent	6.30 percent	3.23
CO	48.3	454	3.28 percent	6.44 percent	3.06
MD	56.4	406	3.36 percent	6.60 percent	2.87
AL	51.8	427	3.42 percent	6.70 percent	3.12
LA	45.5	378	3.62 percent	7.10 percent	3.11
OK	41.4	349	3.65 percent	7.15 percent	2.90
SC	47.4	335	3.73 percent	7.32 percent	2.92
KY	42.6	326	3.77 percent	7.40 percent	2.90
CT	42.3	310	3.82 percent	7.49 percent	2.83
KS	35.1	292	3.93 percent	7.70 percent	2.81
IA	33.9	288	3.99 percent	7.81 percent	2.86
AR	34.0	270	4.13 percent	8.09 percent	2.87
OR	25.5	266	4.25 percent	8.33 percent	3.00
MS	32.3	256	4.29 percent	8.40 percent	2.94
UT	26.6	256	4.42 percent	8.65 percent	3.12
NE	21.7	184	4.97 percent	9.74 percent	2.84
NM	22.2	197	4.99 percent	9.79 percent	3.07
WV	19.9	163	5.28 percent	10.35 percent	2.84
NV	21.3	171	5.31 percent	10.41 percent	3.01
ID	15.2	157	5.55 percent	10.87 percent	3.03
ME	14.8	115	6.22 percent	12.18 percent	2.78
NH	14.9	111	6.35 percent	12.44 percent	2.80
MT	10.2	107	6.62 percent	12.97 percent	2.93
SD	9.7	100	6.96 percent	13.65 percent	3.02
HI	11.5	88	7.43 percent	14.56 percent	3.04
RI	9.8	81	7.48 percent	14.66 percent	2.83
AK	7.7	100	7.53 percent	14.76 percent	3.54
WY	8.3	75	7.88 percent	15.44 percent	2.91
DE	9.3	74	8.15 percent	15.97 percent	3.05
DC	5.7	75	8.58 percent	16.82 percent	3.45
ND	10.2	82	8.62 percent	16.89 percent	3.79
VT	7.8	60	8.65 percent	16.95 percent	2.79

Table 9-5 presents results for the teacher-level within the teacher-specific domains, for both the all-school domain for all teacher-specific domains, and for middle/high schools for the four core subjects (math, science, English, social sciences). Table 9-5 uses the formulas and assumptions as given in Section 6. Included in Table 9-5 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teacher estimates.

Table 9-5. Teacher domain analysis results for teacher-specific domains for Oversampling Plan III

Teacher Domain	School Domain	Expected Domain Teacher Completed Interviews	Percent Teachers in Domain	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
Black	All	1,734	6.94 percent	1.18 percent	2.31 percent	1.51
Hispanic	All	1,823	7.29 percent	1.15 percent	2.25 percent	1.50
Spec Ed	All	3,135	12.54 percent	0.87 percent	1.70 percent	1.48
Elem Gen	All	6,346	25.38 percent	0.73 percent	1.43 percent	2.12
Math	All	2,361	9.45 percent	0.98 percent	1.91 percent	1.41
Science	All	1,913	7.65 percent	1.08 percent	2.12 percent	1.40
English	All	3,099	12.40 percent	0.87 percent	1.70 percent	1.46
Social Sci	All	1,787	7.15 percent	1.12 percent	2.19 percent	1.40
Vo Tech	All	1,212	4.85 percent	1.34 percent	2.63 percent	1.36
Other	All	5,147	20.59 percent	0.70 percent	1.37 percent	1.57
Novice 1 to 3 years	All	3,095	12.38 percent	0.90 percent	1.76 percent	1.56
Exp 4 to 9 yrs	All	7,274	29.10 percent	0.61 percent	1.19 percent	1.68
Exp 10 to 19 yrs	All	8,298	33.19 percent	0.58 percent	1.14 percent	1.74
Exp 20+ yrs	All	6,333	25.33 percent	0.63 percent	1.24 percent	1.59
Math	Middle/High	1,959	7.84 percent	1.05 percent	2.05 percent	1.34
Science	Middle/High	1,600	6.40 percent	1.16 percent	2.27 percent	1.34
English	Middle/High	2,257	9.03 percent	0.98 percent	1.92 percent	1.36
Social Sci	Middle/High	1,504	6.02 percent	1.19 percent	2.34 percent	1.34

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

For the All-School Domain only Vocational Technical domain is above the 2.5 percent criterion. This is better than Oversampling Plans I and II, which also have Social Sciences above the line. For the Middle/High School Domain, all four core subjects meet the criterion. This is also better than Oversampling Plans I and II, in which two of the core subjects were above the line.

Choosing a Sample Design

We have presented four sample designs with their resultant expected completed interview sample sizes, standard errors, and half-widths of confidence intervals for a variety of key domains, and for all 50 states. The desired constraint is a half-width of 2.5 percent for a 95 percent confidence interval of a sample percentage of 20 percent for the major school-level and teacher-level domains. This is a relatively tight constraint. The constraint for states is much looser: it is that state estimates can be published without caveats as per the NCES standards. This standard is that the CV for the estimate is less than 30 percent. For a sample percentage of 20 percent, this is a standard error of 6 percent.

The expected completed interview sample sizes of 5,000 schools and 25,000 teachers is too small to achieve the constraints for all major domains no matter how the allocation is conceived. We did research using constrained optimization methods to select the design that would meet the constraints with the smallest possible sample size. To achieve the strict constraints for all of the major domains, including charter schools and noncharter combined schools, and vocational education teachers as well, a completed interview sample size of 7,357 schools is necessary. To achieve the strict constraints for all of the major domains except charter schools, noncharter combined schools, and vocational education teachers, a completed interview sample size of 6,007 schools is necessary. These designs assign differing sampling rates to each of the 50 strata, so they are difficult to implement, but they tell us what the limits are to what is possible.

For the major domains where expected completed interviews are naturally small (in particular charter schools and combined schools), Proportional Allocation does relatively poorly, though it does best for national domains. The three oversampling plans studied all improve the precision of charter schools and combined schools, so that charter schools meet the strict criterion with two independent studies put together, and noncharter combined schools meet the strict criterion with three independent studies put together. Oversampling Plan I achieves these two goals with a relatively low drop in precision for the national estimates, but leaves many other major domains with higher standard errors. Oversampling Plan II is designed to tweak Oversampling Plan I in order to improve the one major domain that does not meet the strict constraint with two independent studies: town schools. Oversampling Plan II brings this domain into line in that the

strict constraint can be achieved in two independent studies. The oversampling of town schools has little effect on the precisions of other domains: the standard errors for the city, suburban, and rural schools increase only slightly.

Oversampling Plan III is a major re-adjustment. The three other designs are somewhat imbalanced in that primary schools have high expected completed interview sample sizes (and low standard errors) whereas middle and high schools have lower expected completed interview sample sizes (and higher standard errors). This is due to the abundance of primary schools in the country. In general, the middle and high school domain estimates (both school and teacher, and within the core subjects areas) achieve the strict constraint with two independent studies combined, under Oversampling Plan I or II (or Proportional Allocation). Oversampling Plan III transfers the allocation from the primary noncharter schools to other domains. It thus increases precision in these other domains, but at the cost of decreased precision for primary schools and decreased precision for national school and teacher estimates.

If we fall back on the 30 percent CV criterion from the NCES Statistical Standards (the ‘NCES reporting standards’ criterion), the design problem becomes much simpler. Under every design studied, all of the major domains meet the 6 percent standard error standard, and many of the states also do so especially after combining studies across time. This is true with all of the plans. The state domains do best under the Proportional Allocation Plan, but the three oversampling plans have similar numbers of states that meet the reporting criterion for one, two, or three studies.

For teacher estimates, the situation is better. We achieve the strict constraints for all school-level domains for all teachers for each of the oversampling plans (I, II, III). The constraints are not satisfied for charter schools or noncharter combined schools under proportional allocation. The NCES reporting standards criteria are achieved for most states for each plan.

For the teacher-specific domains for all schools, the vocational technical domain does not satisfy the strict criterion for any of the four designs. But it will satisfy the strict criterion for two independent studies for any of the four designs. For the Core Subjects Middle/High School Domain, Proportional Allocation and Oversampling Plan III meet the strict criterion for all subjects. Science and Social Science are over for Oversampling Plans I and II, though not by much. It should be noted that it may be justifiable to include combined schools in the school domain for the core subjects. Combined schools do generally include primary school grades, but the core subject teachers will generally not teach these grades. If combined schools are added to

the School Domain for Core Subjects, then the standard errors for Oversampling Plan II for each core subject in this augmented domain will be lower, and the strict criterion will be met. Our recommendation is for Oversampling Plan II, which achieves the desired precision for charter, combined, and town schools with little decrease in precision for other domains of interest. Oversampling Plan III is a viable alternative if middle and high schools and teachers need to be boosted at the expense of other domains, but it has large effects on the precision of estimates from primary schools.

This report presents designs that attempt to balance the desire to produce accurate timely estimates with the desire to estimate a large number of domains with a smaller sample size per study. By moving from a four-year study to a two-year study, the NTPS is positioned to measure changes in education in a more timely fashion than the SASS that it replaces (this will be the case for those domains that meet the 2.5 percent criterion in one study). For most domains that cannot be accurately estimated from each study, it is possible to produce those estimates from two (or in a few cases three) studies.

When domain estimates require two studies NTPS will be able to provide updated estimates for those domains every two years, not every four as under SASS. Each of these estimates will combine the most recent study of NTPS with the previous one. This is analogous to how the American Community Survey produces rolling estimates based on combining data from 1, 3, or 5 years of data depending on the size of the community.

The trade-off for these estimates is that while new estimates are produced every two years, for these smaller domains estimates of change will be slower to emerge because half of the data are from a previous study.

There is one additional caveat that must be kept in mind with the state estimates described above. For the NTPS states are not strata used in sampling. Therefore the completed interview sample sizes per state are random variables and the sum of the sampling weights will not necessarily match control totals for that state from CCD. (They will in expectation, but not for the actual selected sample.) The mean square error (MSE) of state estimates will be improved by post-stratifying using the most current CCD. While reducing the MSE, post-stratification can introduce greater variability in the final weights, thus potentially increasing the width of confidence intervals. The impact of this on state-level estimates is hard to anticipate and is not incorporated in the sample size estimates described above.

In addition to this, the expected completed interview sample sizes are based on assumed response rates. If response is less than anticipated reducing the expected completed interview sample sizes in some strata, then the precision estimates may be too optimistic.

11

Oversampling Plan IIA: A Modification of Oversampling Plan II with Larger Sample Sizes

Our recommendation at the end of the design phase in December 2014 was Oversampling Plan II. We subsequently received new information in Winter 2015 that that a sample size of 5,300 completed principal interviews would be implemented under the budget for 2015–16 NTPS, rather than the 5,000 assumed in earlier versions of this report. Table 11-1 presents the results that were generated if 5,250 completed principal interviews were allocated under the oversampling rates of Oversampling Plan II (reserving a sample size of 50 to be allocated to states with small sample sizes).

Table 11-1. School-level domain results for Oversampling Plan II with a school completed interview sample size of 5,250.

Domain	Frame schools	Expected sample size	Expected standard error	95 percent conf interval half-width	Design effect
All	95,464	5,250	0.67 percent	1.33 percent	1.5
Charter	6,254	700	1.77 percent	3.45 percent	1.36
Noncharter	89,210	4,550	0.71 percent	1.40 percent	1.45
Primary	52,868	2,641	0.90 percent	1.77 percent	1.34
Middle	14,912	811	1.66 percent	3.25 percent	1.39
High	21,199	1,202	1.56 percent	3.06 percent	1.83
Combined	6,485	596	2.16 percent	4.24 percent	1.74
City	25,818	1,589	1.22 percent	2.40 percent	1.49
Suburban	29,900	1,721	1.14 percent	2.23 percent	1.4
Town	12,785	752	1.75 percent	3.43 percent	1.43
Rural	26,961	1,189	1.44 percent	2.83 percent	1.55
High poverty ¹	23,731	1,339	1.31 percent	2.56 percent	1.42
Low/med poverty	71,733	3,911	0.79 percent	1.55 percent	1.53

As can be seen there are marginal improvements in all of the domains and at the national level. There were many other possibilities for allocating the additional 250 schools, and these would satisfy different priorities for estimation of subgroups. One approach was to add the schools to specific strata in which greater precision is desired (for example, in middle and high schools). An alternative plan (Oversampling Plan IIA), which moves the allocation in the direction of Option III, re-allocated slightly in the following way:

- Charter schools are sampled at a rate proportional to 3.1 times the measure of size (as in Oversampling Option II);
- There are variable sampling rates for all four school level categories (as in Oversampling Option III, but with less differentiation):
 - Noncharter combined schools are sampled at a rate proportional to 2.4 times the measure of size (as in Oversampling Option II);
 - Noncharter middle schools are sampled at a rate proportional to 1.17 times the measure of size (about half the oversampling of Oversampling Option III);
 - Noncharter high schools are sampled at a rate proportional to 1.12 times the measure of size (about half the oversampling of Oversampling Option III);
 - Noncharter primary schools are sampled at a rate proportional to 0.9 times the measure of size (about half the undersampling of Oversampling Option III);
- There are variable sampling rates for all four urbanicity categories (this is new: only town schools were differentially sampled in Oversampling Options II and III: rural schools are now slightly oversampled and suburban schools slightly undersampled):
 - Noncharter town schools are sampled at a rate proportional to 1.27 times higher than the rate they have from their school level status (e.g., noncharter town high schools are sampled at a rate of 1.49 times their measure of size: 1.27 times 1.17)—this is the same as Oversampling Option II;
 - Noncharter rural schools are sampled at a rate proportional to 1.05 times higher than the rate they have from their school level status—this is new;
 - Noncharter suburban schools are sampled at a rate proportional to 0.95 times higher than the rate they have from their school level status—this is new;
 - Noncharter urban schools are sampled at a rate proportional to 1.00 times the rate they have from their school level status—no over- or under-sampling.

This new plan increases as compared to Oversampling Plan II the numbers of middle schools and high schools and reduces the number of primary schools, but less than Oversampling Plan III. Town schools are treated the same as Oversampling Plan II, but now rural schools are slightly oversampled and suburban schools slightly undersampled. This became the new (and final) recommendation for NTPS 2015–16.

In addition to the oversampling at the school stratum level, the following six states are oversampled (adding to roughly 50 extra schools) relative to the other 45 states (called ‘regular states’)¹:

¹ These oversampling rates were assigned by Census based on their analysis preceding the drawing of the final school sample (email message from Randy Parmer to Chelsea Owens May 20, 2015 8:55 am). These oversampling rates were assigned to the final sample sizes: we are applying them here to the final respondents. Note also that their analysis was with the final school frame: ours is an older frame.

- ❖ Rhode Island schools are sampled at rate 1.703 times higher than the 45 regular states;
- ❖ District of Columbia schools are sampled at a rate 1.650 times higher than the 45 regular states;
- ❖ Wyoming schools are sampled at a rate 1.425 times higher than the 45 regular states;
- ❖ Hawaii schools are sampled at a rate 1.287 times higher than the 45 regular states;
- ❖ Vermont schools are sampled at a rate 1.261 times higher than the 45 regular states;
- ❖ Alaska schools are sampled at a rate 1.175 times higher than the 45 regular states;

Table 11-2 presents the expected school completed interview sample sizes, standard errors, half-widths of confidence intervals, and design effects, for the major school domains, as in Table 11-1, with the new sample size of 5,300, implementing the stratification rate structure described above.

Table 11-2. School-level domain results for Oversampling Plan IIA with a school completed interview sample size of 5,300

Domain	Frame schools	Expected sample size	Expected standard error	95 percent conf interval half-width	Design effect
All	95,464	5,300	0.68 percent	1.33 percent	1.52
Charter	6,254	713	1.75 percent	3.43 percent	1.36
Noncharter	89,210	4,587	0.71 percent	1.40 percent	1.46
Primary	52,868	2,419	0.95 percent	1.86 percent	1.36
Middle	14,912	939	1.52 percent	2.97 percent	1.35
High	21,199	1,339	1.46 percent	2.87 percent	1.79
Combined	6,485	604	2.14 percent	4.20 percent	1.73
City	25,818	1,603	1.23 percent	2.41 percent	1.52
Suburban	29,900	1,665	1.18 percent	2.31 percent	1.44
Town	12,785	772	1.73 percent	3.39 percent	1.44
Rural	26,961	1,260	1.41 percent	2.75 percent	1.56
High poverty ¹	23,604	1,313	1.33 percent	2.60 percent	1.44
Low/med poverty	71,860	3,987	0.79 percent	1.54 percent	1.54

Table 11-3 presents expected school completed interview sample sizes and standard errors for the 51 state domains. These are ordered with states with the largest standard errors at the top. Six states had oversampling factors assigned to them. Four states have expected standard errors greater than 10.4 percent.

Table 11-3. State domain results for Oversampling Plan IIA with a school completed interview sample size of 5,300.

State	Over-sampling rate	Frame Schools	Expected sample size	Expected Std Err	Design effect
All		95,464	5,300	0.68 percent	1.52
DE	1.000	213	16	12.20 percent	1.46
VT	1.261	305	18	11.51 percent	1.51
ND	1.000	492	19	11.16 percent	1.44
SD	1.000	700	23	10.58 percent	1.62
MT	1.000	832	25	10.37 percent	1.66
WY	1.425	365	25	10.33 percent	1.66
NH	1.000	472	24	9.73 percent	1.40
AK	1.175	516	29	9.69 percent	1.68
HI	1.287	286	24	9.49 percent	1.34
DC	1.650	211	29	9.30 percent	1.57
ME	1.000	583	26	9.28 percent	1.42
RI	1.703	297	26	9.04 percent	1.34
ID	1.000	719	34	8.65 percent	1.60
NV	1.000	649	35	8.48 percent	1.58
WV	1.000	752	37	7.73 percent	1.39
NE	1.000	980	40	7.43 percent	1.40
NM	1.000	889	45	7.27 percent	1.49
UT	1.000	965	53	7.02 percent	1.63
OR	1.000	1,250	57	6.39 percent	1.46
CT	1.000	1,093	59	6.28 percent	1.46
MS	1.000	1,050	58	6.11 percent	1.37
AR	1.000	1,064	59	5.92 percent	1.30
IA	1.000	1,358	63	5.88 percent	1.37
KS	1.000	1,349	65	5.78 percent	1.35
KY	1.000	1,385	72	5.56 percent	1.40
SC	1.000	1,222	72	5.39 percent	1.30
MN	1.000	2,170	108	5.33 percent	1.91
OK	1.000	1,757	78	5.24 percent	1.33
MD	1.000	1,408	80	5.20 percent	1.36
LA	1.000	1,373	85	5.14 percent	1.41
CO	1.000	1,782	98	4.98 percent	1.51
WA	1.000	2,267	99	4.94 percent	1.50
AL	1.000	1,397	99	4.83 percent	1.45
MA	1.000	1,768	100	4.77 percent	1.42
WI	1.000	2,142	109	4.58 percent	1.43
TN	1.000	1,758	101	4.58 percent	1.32
AZ	1.000	2,249	139	4.55 percent	1.80
IN	1.000	1,891	103	4.55 percent	1.34
VA	1.000	1,883	109	4.39 percent	1.31
MO	1.000	2,296	114	4.34 percent	1.34
NJ	1.000	2,490	143	3.96 percent	1.40
GA	1.000	2,328	149	3.82 percent	1.36
NC	1.000	2,583	156	3.70 percent	1.33
MI	1.000	3,481	183	3.68 percent	1.55
PA	1.000	3,102	184	3.46 percent	1.38
OH	1.000	3,635	196	3.35 percent	1.38
IL	1.000	4,113	215	3.23 percent	1.40
FL	1.000	4,017	280	2.89 percent	1.47
NY	1.000	4,699	296	2.72 percent	1.37
TX	1.000	8,639	524	2.26 percent	1.67
CA	1.000	10,239	516	2.26 percent	1.64

Table 11-4 presents results for the teacher-level estimates for Oversampling Plan IIA. *Also included in these expected sample sizes is an extra factor of 5.375/5 which is attached to the proportionality factor for teacher sample sizes in middle and high schools.* Included in Table

11-4 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teacher estimates.

Table 11-4. Teacher domain analysis results for major domains for Oversampling Plan IIA

Domain	Frame Full-Time Equivalent Teachers (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
All	3,088.3	27,451	0.42 percent	0.83 percent	3.04
Charter	132.7	3,076	1.13 percent	2.21 percent	2.43
Noncharter	2,955.5	24,376	0.44 percent	0.86 percent	2.91
Primary	1,490.6	10,936	0.63 percent	1.23 percent	2.67
Middle	543.2	5,233	0.95 percent	1.87 percent	2.98
High	908.4	8,515	0.80 percent	1.56 percent	3.37
Combined	146.0	2,768	1.21 percent	2.36 percent	2.52
City	904.8	8,448	0.78 percent	1.53 percent	3.23
Suburban	1,187.4	9,570	0.72 percent	1.42 percent	3.13
Town	364.2	3,761	1.07 percent	2.10 percent	2.69
Rural	631.8	5,672	0.87 percent	1.70 percent	2.67
High poverty	721.1	6,408	0.87 percent	1.70 percent	3.01
Low/medium poverty	2,367.2	21,043	0.48 percent	0.94 percent	3.05

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

The target half-width of 2.5 percent is achieved for all school-level domains under Oversampling Plan IIA, as in Oversampling Plans I and II, but unlike the proportional allocation plan. Middle and high school teacher estimates are much more accurate under Oversampling Plan IIA than Oversampling Plan II, at the expense of primary teacher estimates, although the latter group still remains the most accurate.

Table 11-5 provides similar results for the state domains. Note that 10 states do not meet the NCES reporting standards criterion (in this case 6.00 percent standard error), but all of the states

meet the NCES reporting standards if two independent studies are put together (8.41 percent standard error).

Table 11-5. Teacher domain analysis results for state domains for Oversampling Plan IIA

Domain/State	Frame FTE (In 1000s)	Expected Teacher Completed Interviews	Expected Standard Error	95 percent CI Half-Width	Design Effect
TX	332.0	2,721	1.35 percent	2.64 percent	3.09
CA	267.4	2,730	1.36 percent	2.66 percent	3.15
NY	193.2	1,581	1.76 percent	3.44 percent	3.05
FL	176.2	1,429	1.93 percent	3.79 percent	3.34
IL	151.1	1,158	2.03 percent	3.98 percent	2.99
PA	117.8	990	2.20 percent	4.31 percent	2.99
OH	99.8	1,015	2.20 percent	4.31 percent	3.07
MI	83.3	933	2.32 percent	4.54 percent	3.13
NC	98.4	789	2.43 percent	4.75 percent	2.90
NJ	110.6	805	2.45 percent	4.80 percent	3.02
GA	107.6	771	2.45 percent	4.81 percent	2.90
VA	82.5	586	2.80 percent	5.49 percent	2.87
AZ	64.2	688	2.82 percent	5.53 percent	3.42
MO	63.5	585	2.83 percent	5.54 percent	2.92
MA	69.5	558	2.94 percent	5.77 percent	3.02
IN	60.4	534	2.96 percent	5.81 percent	2.93
WI	56.4	549	2.97 percent	5.83 percent	3.03
TN	64.3	516	2.98 percent	5.84 percent	2.86
WA	54.4	538	3.00 percent	5.87 percent	3.02
MN	52.6	546	3.06 percent	5.99 percent	3.19
AL	51.8	474	3.16 percent	6.19 percent	2.96
CO	48.3	495	3.17 percent	6.22 percent	3.11
MD	56.4	438	3.31 percent	6.48 percent	3.00
LA	45.5	416	3.40 percent	6.67 percent	3.01
OK	41.4	389	3.42 percent	6.71 percent	2.85
KY	42.6	362	3.52 percent	6.90 percent	2.81
SC	47.4	367	3.54 percent	6.95 percent	2.88
KS	35.1	325	3.72 percent	7.29 percent	2.80
IA	33.9	321	3.75 percent	7.36 percent	2.82
CT	42.3	333	3.78 percent	7.41 percent	2.97
AR	34.0	299	3.89 percent	7.63 percent	2.83
MS	32.3	283	3.96 percent	7.76 percent	2.78
OR	25.5	291	4.11 percent	8.05 percent	3.06
UT	26.6	278	4.28 percent	8.40 percent	3.18
NM	22.2	219	4.69 percent	9.19 percent	3.01
NE	21.7	206	4.75 percent	9.31 percent	2.90
WV	19.9	182	4.93 percent	9.66 percent	2.76
NV	21.3	186	5.17 percent	10.14 percent	3.11
ID	15.2	172	5.32 percent	10.42 percent	3.05
ME	14.8	130	5.75 percent	11.26 percent	2.68
RI	9.8	147	5.78 percent	11.34 percent	3.08
WY	8.3	120	6.08 percent	11.92 percent	2.77
NH	14.9	122	6.13 percent	12.02 percent	2.87
MT	10.2	121	6.17 percent	12.10 percent	2.87
DC	5.7	135	6.27 percent	12.30 percent	3.32
HI	11.5	123	6.38 percent	12.50 percent	3.13
SD	9.7	112	6.44 percent	12.62 percent	2.91
AK	7.7	129	6.51 percent	12.76 percent	3.42
VT	7.8	86	7.08 percent	13.89 percent	2.69
DE	9.3	79	7.89 percent	15.47 percent	3.08
ND	10.2	92	8.16 percent	16.00 percent	3.84

Table 11-6 presents results for the teacher-level within the teacher-specific domains, for both the all-school domain for all teacher-specific domains, and for middle/high schools for the four core subjects (math, science, English, social sciences). Table 11-6 uses the formulas and assumptions as given in Section 5. Included in Table 11-6 are calculations of expected teacher completed interviews, expected teacher-level estimate standard errors for dichotomous items with 20 percent population percentages, half-widths of 95 percent confidence intervals (1.96 times the standard errors), and design effects for teacher estimates.

Table 11-6. Teacher domain analysis results for teacher-specific domains for Oversampling Plan IIA

Teacher Domain	School Domain	Expected Domain Teacher Completed Interviews	Percent Teachers in Domain	Expected Standard Error	95 percent Conf Interval Half-Width ¹	Design Effect
Black	All	1,903	6.93 percent	1.11 percent	2.17 percent	1.46
Hispanic	All	2,013	7.33 percent	1.07 percent	2.11 percent	1.45
Spec Ed	All	3,443	12.54 percent	0.81 percent	1.60 percent	1.43
Elem Gen	All	7,508	27.35 percent	0.67 percent	1.31 percent	2.09
Math	All	2,479	9.03 percent	0.95 percent	1.87 percent	1.41
Science	All	2,006	7.31 percent	1.06 percent	2.07 percent	1.40
English	All	3,298	12.02 percent	0.84 percent	1.64 percent	1.45
Social Sci	All	1,870	6.81 percent	1.09 percent	2.14 percent	1.40
Vo Tech	All	1,271	4.63 percent	1.31 percent	2.57 percent	1.36
Other	All	5,575	20.31 percent	0.67 percent	1.31 percent	1.55
Novice 1 to 3 years	All	3,390	12.35 percent	0.85 percent	1.66 percent	1.51
Exp 4 to 9 yrs	All	7,970	29.03 percent	0.58 percent	1.13 percent	1.66
Exp 10 to 19 yrs	All	9,112	33.19 percent	0.55 percent	1.08 percent	1.73
Exp 20+ yrs	All	6,980	25.43 percent	0.60 percent	1.17 percent	1.56
Math	Middle/High	2,025	7.38 percent	1.04 percent	2.03 percent	1.36
Science	Middle/High	1,654	6.03 percent	1.14 percent	2.24 percent	1.35
English	Middle/High	2,328	8.48 percent	0.98 percent	1.91 percent	1.39
Social Sci	Middle/High	1,555	5.67 percent	1.18 percent	2.30 percent	1.34

¹The bold values represent domains that do not meet the 2.5 percent criterion for the confidence interval half width in one study.

For the All-School Domain only Vocational Technical domain is above the 2.5 percent criterion. This is better than Oversampling Plans I and II, which also have Social Sciences above the line. For the Middle/High School Domain, all four core subjects easily meet the criterion. This is also better than Oversampling Plans I and II, in which two of the core subjects were above the line.

Implementing the Sample Design

Our final recommendation is for Oversampling Plan IIA as given in Section 11. In this section, we outline the necessary steps to implement this sample design. The frame development is outlined in Appendix A. We recommend that this frame should be used, or the procedures for developing the CCD frame should be followed as described in Appendix A. There are two separate but related stratifications: the ‘relative sampling rate’ strata and the ‘implicit stratification’ strata.

The primary relative sampling rate strata are the set of 50 strata that determine the relative sampling rates: 32 strata for noncharter schools (crossed by school level¹, urbanicity², and poverty stratus³) and 18 strata for charter schools⁴, as given in Table 2-1. Table 12-1 below presents these strata. The ‘final relative sampling factor’ is the targeted relative sampling factor for eligible respondent schools as determined by the selected sample design: Oversampling Plan IIA from Section 11 above. These are the targeted relative rates for completed interviews. The ‘assigned oversampling factor’ divides the final oversampling factor by the ratio of the assumed completion rate for the stratum to the overall assumed completion rate of 68.2 percent (this is the overall weighted school completion rate in SASS 2011-12). Appendix E provides the analysis of SASS 2011-12 school response and eligibility rates which determine the assumed completion rates in Table 12-1. By using these rates here, we are implicitly assuming that the relative completion rates seen in SASS 2011-12 will also pertain to NTPS. We do not know that, but it is our best guess for the future (the relative rates might change in either direction).

¹ The 4-level school level stratum variable is based on GSLO and GSHI from the 2012-13 CCD, and is based on the SASS 2011-12 definitions. If GSLO is Pre-kindergarten through 4th grade and GSHI is Pre-kindergarten through 8th grade, then the school is primary. If GSLO and GSHI are both 5th through 8th grades, then the school is middle. If GSLO is 7th through 12th and GSHI is 9th through 12th, then the school is high. Otherwise the school is combined.

² The field ULOCAL on the 2012-13 CCD file, collapsed into four categories city, suburban, town, and rural.

³ The school is in the high-poverty stratum if the ratio of TOTFRL (total students eligible for free or reduced-price lunch) to student enrollment MEMBER is greater than 0.75. Otherwise, the school is in the low/medium poverty stratum. There are missing values for TOTFRL. We imputed high or low/medium based on percentage of families in poverty for the district from the Small Area Income and Poverty Estimates (SAIPE) program, for districts on the SAIPE list. Other schools with missing values were just placed in the modal group (low/medium poverty). This imputation should be done, or some other alternative.

⁴ The charter school stratum variable is based on the CHARTER field on the 2012-13 CCD. A school is defined as charter if CHARTER = 1, and as noncharter otherwise.

Table 12-1. Assumed completion rates for sampling rate strata and assigned oversampling rates

Charter type	School level	Urbanicity	Pov	Final Relative Sampling Rate	Expected Completion Rate	Assigned Relative Sampling Rate
Charter	Primary	City	High	3.1	51.62 percent	4.10
Charter	Primary	City	LM	3.1	63.51 percent	3.33
Charter	Primary	Suburb	High	3.1	57.77 percent	3.66
Charter	Primary	Suburb	LM	3.1	68.24 percent	3.10
Charter	Primary	Town	All	3.1	80.53 percent	2.63
Charter	Primary	Rural	All	3.1	80.53 percent	2.63
Charter	Middle	City	High	3.1	51.62 percent	4.10
Charter	Middle	City	LM	3.1	63.51 percent	3.33
Charter	Middle	All but city	All	3.1	73.08 percent	2.89
Charter	High	City	High	3.1	37.56 percent	5.63
Charter	High	City	LM	3.1	49.82 percent	4.24
Charter	High	Suburb	All	3.1	65.36 percent	3.23
Charter	High	Town/rural	All	3.1	76.47 percent	2.76
Charter	Combined	City	High	3.1	46.47 percent	4.55
Charter	Combined	City	LM	3.1	46.47 percent	4.55
Charter	Combined	Suburb	All	3.1	47.75 percent	4.43
Charter	Combined	Town	All	3.1	63.92 percent	3.31
Charter	Combined	Rural	All	3.1	63.92 percent	3.31
Noncharter	Primary	City	High	0.9	51.62 percent	1.19
Noncharter	Primary	City	LM	0.9	63.51 percent	0.97
Noncharter	Primary	Suburb	High	0.855	57.77 percent	1.01
Noncharter	Primary	Suburb	LM	0.855	68.24 percent	0.85
Noncharter	Primary	Town	High	1.143	82.55 percent	0.94
Noncharter	Primary	Town	LM	1.143	79.86 percent	0.98
Noncharter	Primary	Rural	High	0.945	82.55 percent	0.78
Noncharter	Primary	Rural	LM	0.945	79.86 percent	0.81
Noncharter	Middle	City	High	1.17	51.62 percent	1.55
Noncharter	Middle	City	LM	1.17	63.51 percent	1.26
Noncharter	Middle	Suburb	High	1.1115	57.77 percent	1.31
Noncharter	Middle	Suburb	LM	1.1115	68.24 percent	1.11
Noncharter	Middle	Town	High	1.4859	82.55 percent	1.23
Noncharter	Middle	Town	LM	1.4859	79.86 percent	1.27
Noncharter	Middle	Rural	High	1.2285	82.55 percent	1.01
Noncharter	Middle	Rural	LM	1.2285	79.86 percent	1.05
Noncharter	High	City	High	1.12	37.56 percent	2.03
Noncharter	High	City	LM	1.12	49.82 percent	1.53
Noncharter	High	Suburb	High	1.064	66.60 percent	1.09
Noncharter	High	Suburb	LM	1.064	64.95 percent	1.12
Noncharter	High	Town	High	1.4224	72.25 percent	1.34
Noncharter	High	Town	LM	1.4224	77.88 percent	1.25
Noncharter	High	Rural	High	1.176	72.25 percent	1.11
Noncharter	High	Rural	LM	1.176	77.88 percent	1.03
Noncharter	Combined	City	High	2.4	46.47 percent	3.52
Noncharter	Combined	City	LM	2.4	46.47 percent	3.52
Noncharter	Combined	Suburb	High	2.4	47.75 percent	3.43
Noncharter	Combined	Suburb	LM	2.4	47.75 percent	3.43
Noncharter	Combined	Town	High	2.4	63.92 percent	2.56
Noncharter	Combined	Town	LM	2.4	63.92 percent	2.56
Noncharter	Combined	Rural	High	2.4	63.92 percent	2.56
Noncharter	Combined	Rural	LM	2.4	63.92 percent	2.56

In supplement to these relative sampling rates, special relative rates were assigned to six states, as discussed in Section 11. These oversampling rates are presented in Table 12-2. The final relative sampling rates O'_i are the product of the Table 12-1 rates and the Table 12-2 rates, and the final relative sampling rate strata are the crossings of the 50 primary relative sampling rate strata and the seven state-level strata. For example, Noncharter combined rural schools in Alaska will receive a relative sampling rate of 2.56×1.1175 .

Table 12-2. Relative sampling rates for states

State	Assigned Relative Sampling Rate
Rhode Island	1.703
District of Columbia	1.650
Wyoming	1.425
Hawaii	1.287
Vermont	1.261
Alaska	1.175
All Other States	1.000

The sample size from the processed public school frame for the main study should be set at **8,300**. A further added element not discussed as of yet in this report is the requirement to allow for an experimental arm of size 1,000. This is designed to test an in-survey experiment in electronic response. The 1,000 schools should be a fully randomized sample from the frame. This will be implemented in the sample design by upwardly increasing the sample size from the 8,300 needed for the main sample to 9,300. The sample will be drawn to achieve this larger sample of 9,300, and then 1,000 will be randomly drawn from the sample of 9,300 to provide the experimental arm. The remaining 8,300 will be allocated to the main sample.

The sample sizes m_i for the relative sampling rate strata $i = 1, \dots, I$ should be proportional to $O'_i * \sum_{j=1}^{J_i} \sqrt{FTE_{ij}}$, where O'_i is the assigned relative sampling rate (the product of the Table 12-1 and Table 12-2 rates), FTE_{ij} is the FTE measure of size for school j in stratum i , and J_i is the number of schools in stratum i . The m_i should add then to 9,300. Within each of the strata, the assigned sample of m_i should be allocated probability proportionate to size, with $\sqrt{FTE_{ij}}$ as the within-stratum measure of size. At the end of this step, all schools should have a defined measure of size for the 'combined' 9,300 sample⁵.

⁵ It should be noted that some of these measures will exceed 1. These become certainties for the combined sample. These schools are set aside then as certainty selections, and the measures are recomputed with the new sample sizes and new total measures. This is generally done in an iterative process, as each recomputation may generate new certainties.

As was done for the SASS surveys, Westat recommends that the sample be selected using systematic sampling, and that the stratified sampling be implemented by sorting the schools in the frame according to the stratification. The advantages of using an implicit stratification to select the sample are that variability in the sample sizes are controlled for those domains that are at the top of the hierarchy, and are somewhat controlled (to the extent possible without using much more complicated designs) for those domains lower in the hierarchy.

The implicit stratification strata define the sort order to carry out the actual systematic sample of schools. We recommend the following sort order for systematic school selection:

- Charter schools—
 - School level (primary, middle, high, combined)—
 - Urbanicity (city, suburb, town, rural)—
 - ◆ Poverty (high, medium, medium low, low⁶)—
 - School size within school level (three size categories for primary and high, two size categories for middle and combined⁷)—
 - State, and FTE within state.
- Noncharter schools—
 - School level (primary, middle, high, combined)—
 - Urbanicity (city, suburb, town, rural)—
 - ◆ Poverty (high, medium, medium low, low)—
 - School size within school level (three size categories for all four levels⁸)—
 - School type⁹ (regular, special education, vocational, alternative)—
 - State, and FTE within state.

The schools with their assigned measures of size should be ordered based on this hierarchical sort order, and a systematic sample drawn.

⁶ These should be based on the ratio of TOTFRL to MEMBER. The Low poverty stratum are those schools with ratio less than or equal to 25 percent. The Medium Low poverty stratum are those schools with ratio greater than 25 percent and less than or equal to 50 percent, or with missing values of TOTFRL. The Medium poverty stratum are those schools with ratio greater than 50 percent and less than or equal to 75 percent. The High poverty stratum are those schools with ratio greater than 75 percent.

⁷ The cutoffs for three-level size categories should be the 33rd percentile and 67th percentile for FTE within primary schools or high schools (e.g., for the 33rd percentile it is the value of FTE for which exactly 33 percent of schools are below this level). The cutoffs for the two-level size categories should be the 50th percentile for FTE with middle schools or combined schools.

⁸ The cutoffs should be the 33rd percentile and 67th percentile for FTE within each Level.

⁹ Based on the TYPE variable on the CCD frame.

The next step is to separate the sample of size 9,300 into a main sample of size 8,300 and an experimental arm of size 1,000. This is done using simple random sampling to retain the relative measures for both components of the sample¹⁰.

Target teacher completed interview sample sizes are designed to be proportional to $TMS_i * O'_i * \sqrt{FTE_{ij}}$, where TMS_i is the teacher sample size for the ‘average’ sized school (schools with an $\sqrt{FTE_{ij}}$ equal to the mean $\sqrt{FTE_{ij}}$). This TMS_i is set equal to 5 for primary and combined schools, and set equal to 5.375 for middle and high schools. It should be noted these are not the actual mean teacher sample sizes for these four school-level strata, as this also depends on the mean value of $\sqrt{FTE_{ij}}$ for the stratum.

Appendix F provides an analysis of teacher completion rates for SASS 2011-12 (conditional on school cooperation). The overall weighted completion rate was 74.4 percent. Our target number of completed teacher interviews is 27,450. Assuming an attrition rate in NTPS of 25 percent, this would mean that 36,600 teachers would have to be sampled in the responding schools to achieve the desired teacher completed interview target of 27,450. In addition, Appendix F reports that teacher completion rates varied across school strata.

Table 12-3 presents weighted completion rates from SASS 2011-12 for teacher strata based on level, urbanicity, and high/low poverty stratus. As response rates were similar, charter and noncharter school strata were collapsed, middle and combined schools were collapsed, and town and rural schools were collapsed (see Appendix F for the analysis that led to this stratification). These weighted completion rates were shrunk back to the global mean of 74.4 percent (these adjusted weighted completion rates for each stratum are the simple average of the stratum weighted completion rate and the global mean). The proposed inflation factor for the teacher sample is the inverse of this adjusted weighted completion rate. We propose using for inflation rates the adjusted rate rather than the unadjusted weighted completion rates for several reasons. One is that there is sampling error in the completion rates (i.e., the response rates are dependent on the actual school sample taken, and will vary depending on that school sample, as is measured in the standard error), so that it is wise to shrink back in case a more extreme weighted completion rate value is ‘the luck of the draw’ and won’t be so extreme in NTPS. Also, we are

¹⁰ Note that there is some complexity with certainties. There are schools which are certainties for both the main sample and the combined sample, due to very large measures of size. These are included in the main sample with certainty, and have no chance of entering the experimental arm (a slightly biased procedure for the experimental arm). Other schools which are certainties for the combined sample of 9,300, but not for the main sample of 8,300, are subsampled into the main sample or the experimental arm with appropriate probabilities.

anticipating that adaptive sampling will possibly mitigate these extremes in NTPS, so that strata with lower teacher response rates in the past may not be quite so low in NTPS.

Table 12-3. SASS 2011-12 weighted completion rates and inflation factors for teacher attrition

School Level	Urbanicity	High/Low Pov	SASS 2012 Weighted Comp Rate	Weighted Comp Rate Shrunk to Global Mean	Inflation Factor
Primary	City	High	65.6 percent	70.0 percent	1.429
Primary	City	Low/Md	75.8 percent	75.1 percent	1.332
Primary	Suburb	High	70.8 percent	72.6 percent	1.378
Primary	Suburb	Low/Md	74.5 percent	74.4 percent	1.344
Primary	Tow/Rur	High	81.8 percent	78.1 percent	1.281
Primary	Tow/Rur	Low/Md	82.8 percent	78.6 percent	1.273
Mid/Comb	City	High	66.6 percent	70.5 percent	1.418
Mid/Comb	City	Low/Md	71.2 percent	72.8 percent	1.374
Mid/Comb	Suburb	High	69.5 percent	71.9 percent	1.390
Mid/Comb	Suburb	Low/Md	73.4 percent	73.9 percent	1.354
Mid/Comb	Tow/Rur	High	73.9 percent	74.1 percent	1.349
Mid/Comb	Tow/Rur	Low/Md	77.8 percent	76.1 percent	1.314
High	City	High	55.9 percent	65.1 percent	1.535
High	City	Low/Md	66.3 percent	70.3 percent	1.422
High	Suburb	High	69.4 percent	71.9 percent	1.391
High	Suburb	Low/Md	71.6 percent	73.0 percent	1.370
High	Tow/Rur	High	69.2 percent	71.8 percent	1.393
High	Tow/Rur	Low/Md	74.0 percent	74.2 percent	1.348
Total	Total	Total	74.4 percent	74.4 percent	1.344

Table 12-4 presents the final multiplier TFS_i , which is the product of TMS_i and the attrition inflation factor for the stratum as given in Table 12-3. The teacher sample size for each sampled school should be proportional to $TFS_i * O'_i * \sqrt{FTE_{ij}}$.

Table 12-4. Teacher multipliers for teacher sampling

School Level	Urbanicity	High/Low Pov	Pre-attrition TMS	Weighted comp rate after shrinkage to global mean	Inflation Factor for Expected Attrition	Final Stratum Teacher Multiplier TFS
Primary	City	High	5	70.0 percent	1.429	7.144
Primary	City	Low/Md	5	75.1 percent	1.332	6.660
Primary	Suburb	High	5	72.6 percent	1.378	6.889
Primary	Suburb	Low/Md	5	74.4 percent	1.344	6.718
Primary	Tow/Rur	High	5	78.1 percent	1.281	6.404
Primary	Tow/Rur	Low/Md	5	78.6 percent	1.273	6.364
Middle	City	High	5.375	70.5 percent	1.418	7.624
Middle	City	Low/Md	5.375	72.8 percent	1.374	7.383
Middle	Suburb	High	5.375	71.9 percent	1.390	7.471
Middle	Suburb	Low/Md	5.375	73.9 percent	1.354	7.276
Middle	Tow/Rur	High	5.375	74.1 percent	1.349	7.249
Middle	Tow/Rur	Low/Md	5.375	76.1 percent	1.314	7.062
High	City	High	5.375	65.1 percent	1.535	8.251
High	City	Low/Md	5.375	70.3 percent	1.422	7.643
High	Suburb	High	5.375	71.9 percent	1.391	7.478
High	Suburb	Low/Md	5.375	73.0 percent	1.370	7.366
High	Tow/Rur	High	5.375	71.8 percent	1.393	7.485
High	Tow/Rur	Low/Md	5.375	74.2 percent	1.348	7.245
Combined	City	High	5	70.5 percent	1.418	7.092
Combined	City	Low/Md	5	72.8 percent	1.374	6.868
Combined	Suburb	High	5	71.9 percent	1.390	6.949
Combined	Suburb	Low/Md	5	73.9 percent	1.354	6.769
Combined	Tow/Rur	High	5	74.1 percent	1.349	6.743
Combined	Tow/Rur	Low/Md	5	76.1 percent	1.314	6.569
Total	Total	Total		74.4 percent	1.344	

A

Appendix on Frame Development

The first step in the process of comparing sample designs was to develop a frame from the most recent Common Core of Data public school frame: the 2012-13 CCD¹. We started with a frame of 102,890 schools and filtered it through the following steps:

- 1,738 schools outside of the 50 states and the District of Columbia were removed, leaving 101,152 schools;
- 305 ineligible schools were removed², leaving 100,847 schools;
- 2,770 schools with no enrollment or no teachers were removed³, leaving 98,077 schools;
- 1,672 pre-schools were removed⁴, leaving a final frame of 96,405 schools.

FTE is the basis of the frame measure of size, so we carefully imputed it for schools on the final frame with missing values for FTE. A total of 5,068 schools had missing values for FTE on the final frame⁵. The procedure for doing this was broadly modeled on the corresponding procedure for SASS 2011-12, as we understood it.

A total of 2,181 of the 5,068 schools had usable values⁶ of FTE on the 2011-12 CCD or the 2010-2011 CCD, and these values became the imputation for the school on this frame. FTE for 2012-13 was imputed to equal the 2011-12 FTE value if it was present. If the 2011-12 FTE value was missing, but the 2010-11 value if it was present, then the 2010-11 value became the imputation for this frame. If both values were missing, then one of the imputation methods below was utilized.

¹ The actual file was SC120G.SUPP, obtained from NCES on September 3, 2014.

² Schools with 'ADULT' or 'HOMEBOUND' in their names, following the procedure for SASS 2011-12.

³ These include schools with '-2' in their enrollment and/or FTE fields, which means 'Not Applicable'. Schools that are newly opened, or scheduled to be opened in the future are not filtered in this step, as zero values may be temporary only.

⁴ These were schools with high grades of pre-kindergarten or kindergarten that also did not have more than a negligible number of students in first grade or above.

⁵ These were schools with FTE values of -1 or -9 on the CCD frame. Schools with FTE values of 0 or -2 were accepted as having no FTE values (and were ultimately then dropped from the frame).

⁶ This includes zero or positive values for any schools, and also not applicable values for non-new schools.

A total of 1,503 schools had no old CCD values but did have student enrollment values which could be leveraged for a high-quality imputation. Teacher-to-student-enrollment mean ratios were computed for imputation cells, and the imputation for the FTE count for these 1,503 school was equal to the school's enrollment multiplied by the cell-mean teacher-to-student-enrollment ratio. The imputation cells were defined by charter status, state, or state group (for regular schools, individual states were cells; for charter schools some states were grouped into state groups), and by school level (primary, middle, high, other for regular schools; elementary, secondary, combined for charter schools). These are high-quality imputations as the correlation between enrollment and teacher counts is very high within these cells (the teacher-to-student-enrollment ratios are stable).

A total of 1,384 schools had no old CCD values and missing student enrollment values as well. For these we imputed directly the FTE mean value for the imputation cells discussed in the previous paragraph. These imputations are less accurate than the other imputations.

Detailed Formulas for Estimation of Variances for School-level Estimates

We will look first of all at the ‘all-schools’ estimate. The first step is to calculate the variance within each stratum, and then the variances are summed across strata. Let p_i be a population percentage for an item from the principal questionnaire in stratum i . Suppose it is 20 percent for each stratum i .¹ The school probability of selection π_{ij} is equal to $m_i * O_i * \frac{\sqrt{FTE_{ij}}}{\sum_{j=1}^J \sqrt{FTE_{ij}}}$. Let w_{ij} be the sampling base weight π_{ij}^{-1} . Let \hat{p}_i be the simple weighted sample percentage of the m_i sampled schools in stratum i , using the w_{ij} as weights. Write M_i as the number of schools on the frame within the stratum, and M as the total number of schools on the frame. Let n be the total school sample size ($n = 5,000$ in the Section 6 through 9 tables, and $n = 5,300$ for the Section 11 tables).

We approximate a variance for \hat{p}_i as $v(\hat{p}_i) = \frac{p_i(1-p_i)}{m_i} * E \left\{ \frac{m_i \sum_{j \in s} w_{ij}^2}{\left\{ \sum_{j \in s} w_{ij} \right\}^2} \right\} * \left(1 - \frac{m_i}{M_i} \right) * 1.2$. The first

factor is the simple binomial variance for an unweighted sample percentage. The factor

$E \left\{ \frac{m_i \sum_{j \in s} w_{ij}^2}{\left\{ \sum_{j \in s} w_{ij} \right\}^2} \right\}$ is the expected value over the sample of the Kish design effect from differential

weighting (the formula is algebraically equivalent to the more common “1 plus the CV-squared of the sample weights” form of the factor, and measures the expected design effect from the use of differential weights within the stratum. We take the expected value of this over all possible samples. The third factor $1 - \frac{m_i}{M_i}$ is a finite population correction; note that there were no strata in which the finite population correction equaled zero. The final factor 1.2 is an extra variance inflation factor to cover variance inflation from nonresponse adjustment.

The second step in calculating the variance is to combine the individual within-stratum variances. Let $CW_i = \frac{M_i}{M}$ be the frame proportion of schools in stratum i . This is the appropriate stratum weight for ‘unit-based’ estimates: estimates concerning schools or principals where each school counts as 1 in the population. Write the target population value as $P = \sum_{i=1}^I CW_i * p_i$. Write the estimator $\hat{P} = \sum_{i=1}^I CW_i * \hat{p}_i$. We estimate the variance of \hat{P} as $v(\hat{P}) = \sum_{i=1}^I CW_i^2 * v(\hat{p}_i)$. Note that this formula automatically incorporates a design effect from the fact that the allocation of

¹ Note that this is a simple case. A more realistic case allows these p_i ’s to vary across strata (say, with half the strata between 70 percent and 90 percent).

sample sizes m_i to the strata $i = 1, \dots, I$ is not optimal for the estimation of P . An overall design effect for \hat{P} can be computed as $DEFF(\hat{P}) = \frac{v(\hat{P})}{\{P*(1-P)/n\}}$.

The computations for the school domains are similar. The poverty, urbanicity, level, and school type domains are all determinants of the strata, so that each of these domains consists of a set of strata. The state domains are not connected to the strata: they cut across the strata. The computations are similar to those for the all-school domain, except that the sample sizes m_i which are used are expected sample sizes for each stratum i within the domain. The population totals M_i are the population totals for each domain within each stratum i . Especially for the state domains, these calculations are a rough approximation only, as they do not take into account the effect of variable sample sizes for domains that do not nest within the strata.



Detailed Formulas for Expected Teacher Variances— All-Teacher Estimates

This appendix section discusses teacher variances for the ‘all-teacher domain’ (teachers not separated out by teacher domains by subject area, experience, and race/ethnicity), within the school domains defined in Section 4.

Each of the sampling strata is allocated its share of the school sample size, based on the summation over the schools in the stratum of the square root of FTE, and also including the final oversampling rates. Subscripting $i = 1, \dots, I$ for the strata, the number of schools selected in stratum i in the school domain, m_i , is proportional to $\sum_{j=1}^{J_i} O_i * \sqrt{FTE_{ij}}$ where O_i is the oversampling factor for stratum i , J_i is the total number of schools on the frame in the stratum and domain, and $j = 1, \dots, J_i$ subscripts the schools in the stratum and domain. Write M_i as the number of schools on the frame within the stratum and domain, and M as the total number of schools on the frame within the domain. Write T_i as the number of teachers on the frame within the stratum and school domain, and T as the total number of teachers in schools on the frame in the school domain.

The only type of estimate of interest at the teacher level counts each teacher as 1 in the population. We assume that the teacher sample sizes t_{ij} within each school are proportional to $\sqrt{FTE_{ij}}$ within the school¹, so that the overall teacher probabilities of selection are close to equal within each school stratum i . Write as $t_i^{(TOT)}$ the total teacher sample size for stratum i . $t_i^{(TOT)}$ is proportional to $\sum_{j=1}^{J_i} O_i * FTE_{ij}$ where O_i is the oversampling factor for stratum i , J_i is the total number of schools on the frame in the stratum, and $j = 1, \dots, J_i$ subscripts the schools in the stratum. The overall total teacher sample size that gets allocated to the strata is 25,000 for Sections 6 through 9, and is 27,450 for Section 11. Write as \bar{t}_i the mean teacher sample size within stratum i which is $\bar{t}_i = \frac{t_i^{(TOT)}}{m_i}$. Table C-1 presents these mean teacher sample sizes across the strata for the four allocations.

¹This is not quite true, as we usually need to put a maximum burden per school, and also the teacher sample sizes have to be integer values.

Table C-1. Mean teacher sample sizes by strata for the four sample designs.

Charter status	School Span	Urbanicity	Poverty	Tchr Mean Prop Alloc	Tchr Mean Ovsmplg Plan I	Tchr Mean Ovsmplg Plan II	Tchr Mean Ovsmplg Plan III
Charter	Primary	City	Hgh Pov	4.09	4.18	4.19	4.10
Charter	Primary	City	LM Pov	3.93	4.02	4.03	3.94
Charter	Primary	Suburb	Hgh Pov	4.07	4.16	4.17	4.08
Charter	Primary	Suburb	LM Pov	4.26	4.35	4.36	4.27
Charter	Primary	Town	All	3.32	3.39	3.39	3.32
Charter	Primary	Rural	All	3.64	3.72	3.73	3.65
Charter	Middle	STR	All	3.49	3.56	3.57	3.49
Charter	Middle	City	Hgh Pov	3.48	3.56	3.57	3.49
Charter	Middle	City	LM Pov	3.78	3.87	3.88	3.79
Charter	High	TR	All	2.87	2.93	2.94	2.88
Charter	High	City	Hgh Pov	3.85	3.94	3.95	3.86
Charter	High	City	LM Pov	3.66	3.74	3.75	3.67
Charter	High	Suburb	All	3.86	3.95	3.96	3.87
Charter	Other	City	Hgh Pov	5.55	5.68	5.69	5.57
Charter	Other	City	LM Pov	4.97	5.08	5.09	4.99
Charter	Other	Suburb	All	5.56	5.68	5.69	5.57
Charter	Other	Town	All	4.14	4.23	4.24	4.15
Charter	Other	Rural	All	3.95	4.04	4.05	3.96
Nonchrtr	Primary	City	Hgh Pov	4.78	4.88	4.89	4.79
Nonchrtr	Primary	City	LM Pov	4.63	4.73	4.74	4.64
Nonchrtr	Primary	Suburb	Hgh Pov	4.83	4.94	4.95	4.84
Nonchrtr	Primary	Suburb	LM Pov	4.74	4.85	4.86	4.75
Nonchrtr	Primary	Town	Hgh Pov	4.40	4.50	4.51	4.41
Nonchrtr	Primary	Town	LM Pov	4.40	4.50	4.51	4.41
Nonchrtr	Primary	Rural	Hgh Pov	4.06	4.15	4.16	4.07
Nonchrtr	Primary	Rural	LM Pov	4.02	4.10	4.11	4.02
Nonchrtr	Middle	City	Hgh Pov	5.32	5.44	5.45	5.33
Nonchrtr	Middle	City	LM Pov	5.71	5.83	5.84	5.72
Nonchrtr	Middle	Suburb	Hgh Pov	5.60	5.72	5.73	5.61
Nonchrtr	Middle	Suburb	LM Pov	5.80	5.92	5.94	5.81
Nonchrtr	Middle	Town	Hgh Pov	4.62	4.72	4.73	4.63
Nonchrtr	Middle	Town	LM Pov	4.65	4.75	4.76	4.66
Nonchrtr	Middle	Rural	Hgh Pov	4.16	4.25	4.26	4.17
Nonchrtr	Middle	Rural	LM Pov	4.45	4.55	4.56	4.46
Nonchrtr	High	City	Hgh Pov	6.02	6.15	6.16	6.03
Nonchrtr	High	City	LM Pov	7.12	7.28	7.29	7.14
Nonchrtr	High	Suburb	Hgh Pov	6.39	6.53	6.54	6.40
Nonchrtr	High	Suburb	LM Pov	7.33	7.48	7.50	7.34
Nonchrtr	High	Town	Hgh Pov	4.78	4.89	4.90	4.79
Nonchrtr	High	Town	LM Pov	5.34	5.46	5.47	5.36
Nonchrtr	High	Rural	Hgh Pov	4.10	4.19	4.20	4.11
Nonchrtr	High	Rural	LM Pov	4.82	4.93	4.94	4.83
Nonchrtr	Other	City	Hgh Pov	4.53	4.62	4.63	4.54
Nonchrtr	Other	City	LM Pov	4.50	4.60	4.61	4.51
Nonchrtr	Other	Suburb	Hgh Pov	4.02	4.11	4.12	4.03
Nonchrtr	Other	Suburb	LM Pov	4.68	4.78	4.79	4.69
Nonchrtr	Other	Town	Hgh Pov	3.06	3.13	3.14	3.07
Nonchrtr	Other	Town	LM Pov	3.77	3.85	3.86	3.78
Nonchrtr	Other	Rural	Hgh Pov	3.63	3.71	3.71	3.64
Nonchrtr	Other	Rural	LM Pov	4.28	4.37	4.38	4.29

The variance is calculated in two steps. The first step is to calculate the variance within each stratum, and then the variances are summed across strata. Let p_i be a population percentage for an

item from the teacher questionnaire in stratum i . Suppose it is 20 percent for each stratum i .² Let w_{ijt} be the final sampling weight for teacher t in school j in stratum i . Let \hat{p}_i be the simple weighted sample percentage of the $m_i \bar{t}_i$ sampled teachers in stratum i within the school domain, using the w_{ijt} as weights.

We approximate a variance for \hat{p}_i as $v(\hat{p}_i) = \frac{p_i(1-p_i)}{m_i \bar{t}_i} * \{1 + \rho(\bar{t}_i - 1)\} * 1.3$. The first factor is the simple binomial variance for an unweighted sample percentage with sample size $m_i \bar{t}_i$. The second factor $\{1 + \rho(\bar{t}_i - 1)\}$ is the clustering design effect from taking teachers within schools. We assume that ρ is equal to 25 percent. The final factor 1.3 is an extra variance inflation factor to cover variance inflation from nonresponse adjustment for teachers, schools, and extra weighting factors from teacher sample sizes not being exactly equal to the optimal value for the school. Note we have left out a finite population correction, as these should be negligible at the teacher level (we are drawing roughly 25,000 teachers from a population of roughly 3,000,000).

The second, final step in calculating the variance is to combine the individual within-stratum variances up to the school domain level. Let $CW_i = \frac{T_i}{T}$ be the frame proportion of teachers in the school domain in stratum i . This is the appropriate stratum weight for teacher-based estimates: estimates where each teacher counts as 1 in the population. Write the target population value as $P = \sum_{i=1}^I CW_i * p_i$. Write the estimator $\hat{P} = \sum_{i=1}^I CW_i * \hat{p}_i$. We estimate the variance of \hat{P} for the school domain as $v(\hat{P}) = \sum_{i=1}^I CW_i^2 * v(\hat{p}_i)$.

Table C-2 includes teacher means as they were computed for the final design: Oversampling Plan IIA. This also included a further change: the teacher means for middle and high schools were set to be 5.375/5 times higher than those for primary and combined schools. In this scheme then the schools in middle and high schools receive teacher sample sizes proportionate to $5.375 * \sum_{j=1}^{J_i} O_i * FTE_{ij}$, and the primary and combined schools receive teacher sample sizes proportionate to $5.0 * \sum_{j=1}^{J_i} O_i * FTE_{ij}$. The overall teacher sample size here is 27,450.

² Note that this is a simple case. A more realistic case allows these p_i 's to vary across strata (say, with half the strata between 70 percent and 90 percent).

Table C-2. Mean teacher sample sizes by strata for the final sample design.

Charter status	School Span	Urbanicity	Poverty	Tchr Mean Ovsmpg Plan IIA
Charter	Primary	City	Hgh Pov	4.15
Charter	Primary	City	LM Pov	4.01
Charter	Primary	Suburb	Hgh Pov	4.13
Charter	Primary	Suburb	LM Pov	4.32
Charter	Primary	Town	All	3.37
Charter	Primary	Rural	All	3.70
Charter	Middle	STR	All	3.81
Charter	Middle	City	Hgh Pov	3.81
Charter	Middle	City	LM Pov	4.13
Charter	High	TR	All	3.13
Charter	High	City	Hgh Pov	4.22
Charter	High	City	LM Pov	4.00
Charter	High	Suburb	All	4.22
Charter	Other	City	Hgh Pov	5.65
Charter	Other	City	LM Pov	5.05
Charter	Other	Suburb	All	5.65
Charter	Other	Town	All	4.21
Charter	Other	Rural	All	4.01
Nonchrtr	Primary	City	Hgh Pov	4.86
Nonchrtr	Primary	City	LM Pov	4.70
Nonchrtr	Primary	Suburb	Hgh Pov	4.91
Nonchrtr	Primary	Suburb	LM Pov	4.82
Nonchrtr	Primary	Town	Hgh Pov	4.48
Nonchrtr	Primary	Town	LM Pov	4.47
Nonchrtr	Primary	Rural	Hgh Pov	4.13
Nonchrtr	Primary	Rural	LM Pov	4.08
Nonchrtr	Middle	City	Hgh Pov	5.81
Nonchrtr	Middle	City	LM Pov	6.23
Nonchrtr	Middle	Suburb	Hgh Pov	6.11
Nonchrtr	Middle	Suburb	LM Pov	6.33
Nonchrtr	Middle	Town	Hgh Pov	5.04
Nonchrtr	Middle	Town	LM Pov	5.08
Nonchrtr	Middle	Rural	Hgh Pov	4.54
Nonchrtr	Middle	Rural	LM Pov	4.86
Nonchrtr	High	City	Hgh Pov	6.58
Nonchrtr	High	City	LM Pov	7.77
Nonchrtr	High	Suburb	Hgh Pov	6.96
Nonchrtr	High	Suburb	LM Pov	8.00
Nonchrtr	High	Town	Hgh Pov	5.20
Nonchrtr	High	Town	LM Pov	5.84
Nonchrtr	High	Rural	Hgh Pov	4.46
Nonchrtr	High	Rural	LM Pov	5.27
Nonchrtr	Other	City	Hgh Pov	4.61
Nonchrtr	Other	City	LM Pov	4.57
Nonchrtr	Other	Suburb	Hgh Pov	4.10
Nonchrtr	Other	Suburb	LM Pov	4.75
Nonchrtr	Other	Town	Hgh Pov	3.12
Nonchrtr	Other	Town	LM Pov	3.83
Nonchrtr	Other	Rural	Hgh Pov	3.68
Nonchrtr	Other	Rural	LM Pov	4.35



Detailed Formulas for Expected Teacher Variances— Teacher Domains

The primary calculations for teacher domains are only done for the all-school domain. The only exception to this is the ‘core domains’, which are the four subjects mathematics, language arts, science, and social sciences nested within the ‘middle/high’ school domain (consisting of middle and high schools together).

Let \bar{t}_i be the mean number of teachers in stratum i for the particular sample design following the development in Appendix C. Let p_{iuv} be the proportion of teachers in domain $v = 1, \dots, V_u$, for the three domain classes $u=1,2,3$ ($u=1$ for race/ethnicity, $u=2$ for teacher subject, $u=3$ for experience; V_1 equals 3, V_2 equals 8, V_3 equals 4). For example, p_{732} represents the proportion of teachers in stratum 7 who have between 4 and 9 years of experience. We estimated a ‘raw’ proportion \hat{p}_{iuv} based on the SASS 2011-12 perturbed teacher DOC file. These are the weighted proportions by stratum and domain of teachers from SASS 2011-12. There is considerable sampling error in these estimates, so we smoothed them using an empirical Bayes approach. The results of this procedure are smoothed estimates \tilde{p}_{iuv} . Note that the estimates add to 1 for each stratum i and each domain class u : $\sum_{v=1}^{V_u} \tilde{p}_{iuv} = 1$.

Estimates of interest at the teacher level count each teacher as 1 in the population. We assume that the teacher sample sizes t_{ij} within each school are proportional to $\sqrt{FTE_{ij}}$ within the school¹, so that the overall teacher probabilities of selection are close to equal within each school stratum i . Write as \bar{t}_{iuv} the mean teacher sample size for each school within stratum i for teacher domain uv . We assume $\bar{t}_{iuv} = \bar{t}_i * \tilde{p}_{iuv}$. Suppose T_i is the total number of teachers in stratum i , and suppose T_{iu} is the total number of teachers in stratum i , domain v in domain class u . We assume then that $T_{iuv} = T_i * \tilde{p}_{iuv}$.

The variance is calculated in two steps. The first step is to calculate the variance within each stratum, and then sum the variances across strata. Let p_i be a population percentage for an item

¹ This is not quite true, as we usually need to put a maximum burden per school, and also the teacher sample sizes have to be integer values.

from the teacher questionnaire in stratum i . Suppose it is 20 percent for each stratum i ². Let w_{ijt} be the final sampling weight of teacher t in school j in stratum i . Let \hat{p}_{iuv} be the simple weighted sample percentage of the $m_i * \bar{t}_{iuv}$ sampled teachers in stratum i and domain uv using the w_{ijt} as weights.

We approximate a variance for \hat{p}_{iuv} as $v(\hat{p}_{iuv}) = \frac{p_i(1-p_i)}{m_i \bar{t}_{iuv}} * \{1 + \rho(\bar{t}_{iuv} - 1)\} * 1.3$. We assume the second factor $\{1 + \rho(\bar{t}_{iuv} - 1)\}$ is 1 if \bar{t}_{iuv} is less than 1.

The second step in calculating the variance is to combine the individual within-stratum variances. Let $CW_{iuv} = \frac{T_{iuv}}{T_i}$ be the frame proportion of teachers in stratum i and domain uv . This is the appropriate stratum weight for teacher-based estimates: estimates where each teacher counts as 1 in the population. Write the target population value as $P_{uv} = \sum_{i=1}^I CW_{iuv} * p_{iuv}$. Write the estimator $\hat{P}_{uv} = \sum_{i=1}^I CW_{iuv} * \hat{p}_{iuv}$. We estimate the variance of \hat{P} as $v(\hat{P}_{uv}) = \sum_{i=1}^I CW_{iuv}^2 * v(\hat{p}_{iuv})$.

² Note that this is a simple case. A more realistic case allows these p_i 's to vary across strata (say, with half the strata between 70 percent and 90 percent).

E

Analysis of School Completion Rates in SASS 2011-12

Table E-1 below presents unweighted and weighted counts from the SASS 2011-12 principals sample. The weighted counts utilize the school base weight (the sum of the weighted counts are an estimate of the total number of schools). The unweighted and weighted percentages are not much different: about 25.7 percent nonrespondents and 6.1 percent ineligible.

Table E-1. SASS 2011–12 principal response and eligibility rates

2011-12 SASS Principal Outcomes	Survey Count	Survey Unwgt'd pct	Weighted Survey Count	Survey Wgt'd pct
Completes	7,512	68.29 percent	65,024	68.16 percent
Nonrespondents	2,822	25.65 percent	24,577	25.76 percent
Ineligible	666	6.05 percent	5,799	6.08 percent
Total sample	11,000	100.00 percent	95,400	100.00 percent

We will combine nonrespondents and ineligibles, as the sample sizes need to be adjusted upwards simultaneously for both nonresponse and ineligibility. The completion rate is the completes divided by completes, nonrespondents, and ineligibles¹.

Table E-2 provides unweighted and weighted completion rates from SASS 2011-12. Also included are the standard errors for the weighted response rates, using the base school replicate weights for computing the standard errors. 95 percent confidence intervals are provided based on using ± 1.96 times the standard error. These standard errors can be seen as measuring the degree of difference one would expect if one drew other samples from the same frame. In measuring the uncertainty as to future response rates, the standard errors are likely underestimates, as there are other reasons we can expect variability (differing populations, conditions, field collection methods).

¹ Note that this is not a response rate, as response rates normally exclude ineligibles.

Table E-2. SASS 2011–12 principal response and eligibility rates major domains

Domain	SASS 2012 Sample	SASS 2012 Completes	SASS 2012 NR and Inelig	Un- wgted Comp Rate	Wgted Comp Rate	Std Err Wgted Comp Rate	Lower Bound CI	Upper Bound CI
All	11,000	7,512	3,488	68.3%	68.2%	0.9%	66.4%	69.9%
Charter	750	467	283	62.3%	59.6%	5.0%	49.8%	69.5%
Noncharter	10,250	7,045	3,205	68.7%	68.7%	0.7%	67.4%	70.0%
Primary	3,103	2,169	934	69.9%	69.4%	1.1%	67.3%	71.4%
Middle	2,627	1,901	726	72.4%	71.2%	1.4%	68.5%	73.9%
High	3,985	2,654	1,331	66.6%	67.2%	1.1%	65.0%	69.4%
Combined	1,285	788	497	61.3%	56.5%	3.5%	49.6%	63.3%
City	2,868	1,558	1,310	54.3%	54.5%	1.4%	51.7%	57.3%
Suburban	2,936	1,896	1,040	64.6%	65.3%	1.2%	63.0%	67.7%
Town	1,661	1,265	396	76.2%	77.2%	1.8%	73.6%	80.7%
Rural	3,535	2,793	742	79.0%	78.2%	1.3%	75.6%	80.9%
High poverty	1,906	1,129	777	59.2%	58.6%	1.5%	55.7%	61.6%
Low/med poverty	9,094	6,383	2,711	70.2%	70.8%	1.0%	68.9%	72.8%

Table E-3 provides the results from a weighted logistic regression analysis with completion (or not) as the dependent variable, and predictors the major school domains included as main effects. The table provides the estimated odds ratio comparing one level of each main effect with a reference level for each major domain (noncharter, combined schools, rural schools, low-medium poverty schools). The odds are the probability of completion divided by 1 minus that probability. The odds ratio is the ratio of the odds for one level to the other. For example, if the probability of completion is one-half for Level 1 and is three-quarters for Level 2, then the odds ratio between Level 1 and Level 2 is $1/3 \{ (1/2)/(1/2) \text{ divided by } (3/4)/(1/4) \}$. The confidence interval is a 95 percent confidence interval based on the replicate weights. Adjusting for the other domains, charter schools do not have differing completion probabilities from noncharters. The estimated odds ratio is almost 1. Primary and middle schools have similar completion rates, and are different from high and combined (high and combined have lower completion rates, with combined the lowest of all). Town and rural are indistinguishable, but differ from city and suburban (city has the lowest completion rates). High poverty has lower completion rates than low/medium poverty, adjusting for the other major domains.

Table E-3. SASS 2011–12 principal response and eligibility rates logistic regression odds ratios estimates

Comparison	Estimated Odds Ratio	Lower Bound 95 percent CI Odds Ratio	Upper Bound 95 percent CI Odds Ratio
Charter vs noncharter	1.01	0.72	1.41
Primary vs combined	2.05	1.34	3.13
Middle vs combined	2.13	1.34	3.37
High vs combined	1.60	1.08	2.36
City vs rural	0.35	0.29	0.42
Suburban vs rural	0.49	0.41	0.60
Town vs rural	0.92	0.71	1.21
High poverty vs low/med pov	0.75	0.64	0.87

Based on these results, we dropped charter vs. noncharter from the list of variables to distinguish school level response rates (as conditional on the other characteristics, the estimated odds ratio is almost exactly 1). We also collapsed primary with middle schools (as the estimated odds ratios are very close for these two groups), and collapsed town with rural schools.

Table E-4 presents unweighted and weighted response rates for cells determined by primary/middle, high, and combined schools, city, suburban, and town/rural schools, and high and low/medium poverty schools. Included also are standard errors for the weighted response rates, as well as 95 percent confidence intervals.

Table E-4. SASS 2011–12 principal response and eligibility rates response cells

School Level	Urbanicity	High/Low Pov	SASS 2012 Sample	SASS 2012 Comp	SASS 2012 NR and Inellg	Un-wgtd Comp Rate	Wgtd Comp Rate	Std Err Wgtd Comp Rate	Lower Bound CI	Upper Bound CI
Prim/Mid	City	High	646	327	319	50.6%	51.6%	1.9%	47.9%	55.4%
Prim/Mid	City	Low/Md	860	536	324	62.3%	63.5%	3.5%	56.7%	70.3%
Prim/Mid	Suburb	High	230	141	89	61.3%	57.8%	4.2%	49.5%	66.1%
Prim/Mid	Suburb	Low/Md	1,430	981	449	68.6%	68.2%	1.4%	65.5%	71.0%
Prim/Mid	Tow/Rur	High	278	230	48	82.7%	82.6%	2.8%	77.0%	88.1%
Prim/Mid	Tow/Rur	Low/Md	2,286	1,855	431	81.1%	79.9%	1.4%	77.2%	82.5%
High	City	High	274	117	157	42.7%	37.6%	3.1%	31.5%	43.6%
High	City	Low/Md	772	418	354	54.1%	49.8%	2.4%	45.1%	54.5%
High	Suburb	High	79	49	30	62.0%	66.6%	5.7%	55.5%	77.7%
High	Suburb	Low/Md	969	615	354	63.5%	64.9%	1.9%	61.2%	68.7%
High	Tow/Rur	High	152	109	43	71.7%	72.2%	4.3%	63.9%	80.6%
High	Tow/Rur	Low/Md	1,739	1,346	393	77.4%	77.9%	1.6%	74.7%	81.1%
Comb	City	High	101	57	44	56.4%	49.3%	7.2%	35.2%	63.4%
Comb	City	Low/Md	215	103	112	47.9%	45.1%	12.2%	21.2%	69.0%
Comb	Suburb	High	41	23	18	56.1%	58.5%	9.0%	40.9%	76.1%
Comb	Suburb	Low/Md	187	87	100	46.5%	44.8%	8.7%	27.7%	61.9%
Comb	Tow/Rur	High	105	76	29	72.4%	56.9%	8.2%	40.8%	73.0%
Comb	Tow/Rur	Low/Md	636	442	194	69.5%	65.3%	5.5%	54.6%	76.1%
Total	Total	Total	11,000	7,512	3,488	68.3%				

The standard errors for the combined schools are very large. Further collapsing was done by poverty status. The recommended inflation factors are the reciprocals of the weighted response rates for the final cell sets. These are given in Table E-5.

Table E-5. SASS 2011-12 principal response and eligibility rates response adjustment cells

School Level	Urbanicity	High/Low Poverty	Weighted completion rate	Inflation factor
Primary/Middle	City	High	51.62 percent	1.94
Primary/Middle	City	Low/Medium	63.51 percent	1.57
Primary/Middle	Suburban	High	57.77 percent	1.73
Primary/Middle	Suburban	Low/Medium	68.24 percent	1.47
Primary/Middle	Town/Rural	High	82.55 percent	1.21
Primary/Middle	Town/Rural	Low/Medium	79.86 percent	1.25
High	City	High	37.56 percent	2.66
High	City	Low/Medium	49.82 percent	2.01
High	Suburban	High	66.60 percent	1.50
High	Suburban	Low/Medium	64.95 percent	1.54
High	Town/Rural	High	72.25 percent	1.38
High	Town/Rural	Low/Medium	77.88 percent	1.28
Combined	City	All	46.47 percent	2.15
Combined	Suburban	All	47.75 percent	2.09
Combined	Town/Rural	All	63.92 percent	1.56
Total	Total	Total	68.29 percent	1.46

F

Analysis of Teacher Completion Rates in SASS 2011-12

Table F-1 below presents unweighted and weighted counts from the SASS 2011-12 teachers sample. These are teacher-specific rates within responding schools. The weighted counts utilize the teacher base weight (the sum of the weighted counts for a domain are an estimate of the total number of eligible teachers in that domain). The unweighted and weighted percentages are not much different: about 22 percent nonrespondents and about 4 percent ineligible.

Table F-1. SASS 2011–12 teacher response and eligibility rates

2011–12 SASS Teacher Outcomes	Survey Count	Survey Unwgt'd pct	Weighted Survey Count	Survey Wgt'd pct
Completes	37,497	73.43 percent	1,837,847	74.38 percent
Nonrespondents	11,332	22.19 percent	528,644	21.40 percent
Ineligible	2,233	4.37 percent	104,312	4.22 percent
Total sample	51,062	100.00 percent	2,470,803	100.00 percent

As with schools, we will combine nonrespondents and ineligible, as the sample sizes need to be adjusted upwards simultaneously for both nonresponse and ineligibility. The completion rate is the completes divided by completes, nonrespondents, and ineligible¹.

Table F-2 provides unweighted and weighted teacher completion rates from SASS 2011-12, conditional on school cooperation. Also included are the standard errors for the weighted response rates, using the base teacher replicate weights for computing the standard errors. 95 percent confidence intervals are provided based on using the rate ± 1.96 times the standard error as the lower and upper bounds.

¹ Note that this is not a response rate, as response rates normally exclude ineligible.

Table F-2. SASS 2011–12 teacher response and eligibility rates major domains

Domain	SASS 2012 Sample	SASS 2012 Completes	SASS 2012 NR and Inelig	Un- wgt'd Comp Rate	Wgt'd Comp Rate	Std Err Wgt'd Comp Rate	Lower Bound CI	Upper Bound CI
All	51,062	37,497	13,565	73.4%	74.4%	0.5%	73.4%	75.4%
Charter	3,829	2,497	1,332	65.2%	67.3%	3.6%	60.1%	74.4%
Noncharter	47,233	35,000	12,233	74.1%	74.6%	0.4%	73.8%	75.4%
Primary	8,806	6,803	2,003	77.3%	76.6%	0.7%	75.3%	78.0%
Middle	13,959	10,545	3,414	75.5%	74.3%	1.0%	72.3%	76.3%
High	23,070	16,389	6,681	71.0%	70.9%	0.6%	69.7%	72.0%
Combined	5,227	3,760	1,467	71.9%	73.6%	3.1%	67.5%	79.7%
City	12,010	8,135	3,875	67.7%	68.6%	1.2%	66.3%	70.9%
Suburban	14,304	10,291	4,013	71.9%	72.9%	0.7%	71.5%	74.4%
Town	8,024	6,176	1,848	77.0%	79.4%	1.0%	77.5%	81.4%
Rural	16,724	12,895	3,829	77.1%	78.3%	0.8%	76.7%	79.9%
High poverty	7,099	4,811	2,288	67.8%	69.0%	1.3%	66.5%	71.6%
Low/med poverty	43,963	32,686	11,277	74.3%	75.6%	0.5%	74.6%	76.6%

Table F-3 provides the results from a weighted logistic regression analysis with teacher completion (or not) as the dependent variable, and predictors the major school domains included as main effects, similar to Table E-3. The table provides the estimated odds ratio comparing one level of each main effect with a reference level for each major domain (noncharter, combined schools, rural schools, low-medium poverty schools).

Table F-3. SASS 2011–12 teacher response and eligibility rates logistic regression odds ratios estimates

Comparison	Estimated Odds Ratio	Lower Bound 95 percent CI Odds Ratio	Upper Bound 95 percent CI Odds Ratio
Charter vs noncharter	0.839	0.645	1.093
Primary vs combined	1.233	0.925	1.644
Middle vs combined	1.054	0.758	1.465
High vs combined	0.851	0.653	1.11
City vs rural	0.651	0.58	0.731
Suburban vs rural	0.742	0.651	0.845
Town vs rural	1.07	0.929	1.233
High poverty vs low/med pov	0.758	0.673	0.854

Based on these results, we collapsed middle with combined schools, and collapsed town and rural schools. We also collapsed charter schools with noncharter schools.

Table F-4 presents unweighted and weighted completion rates for the collapsed cells determined by primary, middle/combined, and high schools, city, suburban, and town/rural schools, and high and

low/medium poverty schools. Included also are standard errors for the weighted response rates, as well as 95 percent confidence intervals.

Table F-4. SASS 2011–12 teacher response and eligibility rates teacher cells

School Level	Urbanicity	High/Low Pov	SASS 2012 Teacher Sample	SASS 2012 Teacher Comp	SASS 2012 Teacher NR and Inelig	Un-wgtd Teacher Comp Rate	Wgtd Teacher Comp Rate	Std Err Wgtd Comp Rate	Lower Bound CI	Upper Bound CI
Primary	City	High	996	669	327	67.2%	65.6%	2.5%	60.7%	70.5%
Primary	City	Low/Md	1,179	886	293	75.1%	75.8%	1.8%	72.2%	79.4%
Primary	Suburb	High	361	255	106	70.6%	70.8%	2.8%	65.3%	76.2%
Primary	Suburb	Low/Md	1,999	1,492	507	74.6%	74.5%	1.5%	71.5%	77.4%
Primary	Tow/Rur	High	467	376	91	80.5%	81.8%	2.7%	76.5%	87.0%
Primary	Tow/Rur	Low/Md	3,804	3,125	679	82.2%	82.8%	1.2%	80.4%	85.1%
Mid/Comb	City	High	1,302	885	417	68.0%	66.6%	5.9%	55.1%	78.1%
Mid/Comb	City	Low/Md	2,854	2,029	825	71.1%	71.2%	2.4%	66.6%	75.9%
Mid/Comb	Suburb	High	642	449	193	69.9%	69.5%	3.0%	63.6%	75.4%
Mid/Comb	Suburb	Low/Md	4,702	3,468	1,234	73.8%	73.4%	1.1%	71.2%	75.5%
Mid/Comb	Tow/Rur	High	1,038	763	275	73.5%	73.9%	2.1%	69.9%	78.0%
Mid/Comb	Tow/Rur	Low/Md	8,648	6,711	1,937	77.6%	77.8%	1.4%	75.0%	80.7%
High	City	High	1,247	714	533	57.3%	55.9%	2.7%	50.6%	61.2%
High	City	Low/Md	4,432	2,952	1,480	66.6%	66.3%	1.4%	63.4%	69.1%
High	Suburb	High	353	221	132	62.6%	69.4%	5.1%	59.3%	79.5%
High	Suburb	Low/Md	6,247	4,406	1,841	70.5%	71.6%	1.2%	69.3%	73.9%
High	Tow/Rur	High	693	479	214	69.1%	69.2%	3.3%	62.9%	75.6%
High	Tow/Rur	Low/Md	10,098	7,617	2,481	75.4%	74.0%	0.9%	72.3%	75.7%
Total	Total	Total	51,062	37,497	13,565	73.4%	74.4%	0.5%	73.4%	75.4%

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Appendix F. Report on Results of Special Contact Districts

This appendix contains a report prepared by the U.S. Census Bureau. Its contents are listed below.

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Background

Public school district staff can serve as gatekeepers to the schools they operate. In recent years an increasing number of districts have developed formal review and approval procedures before nonmandatory data collections can be conducted with their schools. These processes often operate similar to a model of Institutional Review Boards (IRBs), which review research applications for potential research projects. The National Center for Education Statistics (NCES) does not systematically search for such school district policies. Over the years, though, various surveys sponsored by NCES have identified a common set of school districts with known policies for handling research requests through these approval processes. Securing the approval of these districts is essential to the success of the National Teacher and Principal Survey (NTPS). During past cycles of the Schools and Staffing Survey (SASS, the predecessor to NTPS), many districts indicated that formal approval from the district was required before they would allow schools to participate in SASS. Often, the approval process required several months to complete, making it difficult to obtain approval during the SASS data collection period. In the 2003–04 and 2007–08 administrations of SASS, NCES and the Education Statistics Services Institute attempted to identify and contact districts with a formal approval process well ahead of data collection in order to secure this approval. For the 2011–12 administration of SASS and the 2015–16 administration of NTPS, the U.S. Census Bureau (Census Bureau) was responsible for researching or contacting the districts, or conducting both activities, to obtain requirements for submission of an external research request; compiling the research request packet; submitting the research request packet to the appropriate personnel/department; and following up as necessary.

Prior to the 2015–16 NTPS data collection, the Census Bureau identified 1,620 sampled schools within 244 school districts that required approval to conduct surveys with schools in their district. These were identified based on historic knowledge of district requirements from past administrations of SASS and other NCES-sponsored surveys. The Census Bureau referred to these districts as “special contact districts.” Due to the high number of special contact districts along with limited staff resources and time, Census Bureau staff first submitted research packets to all special contact districts with three or more sampled schools. As resources and time permitted, some districts with one or two sampled schools were contacted. As a result, the Census Bureau sent research request packets to 151 districts prior to the initial mailout. Fourteen additional special contact districts were identified after the initial mailout, and these districts were sent research packets. The Census Bureau applied to a total of 162 districts that oversaw a total of 1,525 schools during the 2015–16 NTPS.

Methods

Census Bureau staff began researching or contacting districts, or conducting both activities, in April 2015. The purpose of the research or initial contact was to determine what requirements needed to be satisfied before the district would grant approval for NTPS and to identify a contact person at the district. Application packages generally included a cover letter, informational (draft) copies of the NTPS questionnaires, and a research application or research proposal or both. These applications often requested background on the study, information on the sampling plan, survey questionnaires, school resources required, and a plan for protecting the confidentiality of data. Census Bureau staff prepared research applications or proposals according to the districts’ requirements and submitted them directly to the district. Other required

forms, such as the project officer's resume, a consent form, and an IRB Exemption form, were included for some districts, as needed.

Census Bureau staff developed a tracking database that housed all the details of the special contact districts, including a description of research requirements, contact names, and the initial and final outcome of contact with the district. The Census Bureau provided regular updates on the progress of the approval process to NCES.

Findings

At the time of the initial mailout for the 2015–16 NTPS, 32 districts had approved their participation in NTPS and 25 districts had denied participation. Schools in districts that denied participation were not contacted during the initial mailout or anytime thereafter. Survey packages¹ were mailed to schools in districts where a decision was pending (i.e., where the district had neither approved nor denied participation in NTPS).

The Census Bureau ceased following up with the special contact districts regarding the applications in December 2015. At the end of follow-up efforts, 46 districts approved their schools' participation in NTPS, approval in 81 districts was pending, and 35 districts denied participation.

Of the special contact districts that approved participation in NTPS, 18 had “special handling procedures” related to the package contents or the appropriate recipient. These special procedures included, but were not limited to, sending the district's letter granting permission when sending materials to the school; altering the text of the letters; having principals formally approve survey participation in their schools by signing a Principal Permission Form; and/or having all sampled staff **that wished to participate** sign a Participant Informed Consent Form before taking the study.

The initial unweighted response rate of schools in the special contact districts was lower than the overall public school response rate for all school-level questionnaires. The response rate comparison is displayed below in table F-1. These response rates differ from the unweighted final response rates, which were determined after the data were edited and completeness checks were performed.

¹The initial package of NTPS questionnaires (including the Teacher Listing Form, Principal Questionnaire, and School Questionnaire) was mailed to schools in September 2015.

Table F-1. Initial unweighted response rates (in percentages), by special district status and questionnaire: 2015–16

Questionnaire	Response rate	
	Schools in special contact districts	All schools
Teacher Listing Form	69.7	83.0
School Questionnaire	55.2	71.9
Principal Questionnaire	54.8	71.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School Control Database,” 2015–16; *Documentation for the 2015–16 National Teacher and Principal Survey*, National Teacher and Principal Survey (NTPS), 2015–16 U.S. Department of Education, National Center for Education Statistics.

Recommendations

The special contact methodology was moderately successful at gaining cooperation from districts that required formal permission to conduct surveys within their schools. Future NTPS administrations should continue to contact districts that require formal permission to conduct surveys with their schools. The approval process should begin as early in the year as possible so that the status of the majority of the special contact districts is determined prior to the initial mailout. A database of these districts, including their requirements, contact person(s), and approval history, should be maintained over time.

As districts approve research applications, they may alert the Census Bureau that they require that special procedures be implemented when contacting their schools via mail, telephone calls, or personal visits. While the Census Bureau should strive to accommodate these requests, care should be taken to limit the extent of additional resources allocated to these schools. For example, the goal should be, whenever possible, to limit the extent to which mail packages need to be modified, excluding the initial package sent to schools. Modifications to the initial package are relatively easy to accommodate because there is enough time to prepare them in advance. Modifications to subsequent school and teacher packages, while possible, are more problematic because of the increased time to prepare these packages (particularly for teacher packages) and decreased turn-around time for respondents to complete the enclosed surveys.

Appendix G. 2015–16 NTPS Unit Nonresponse Bias Analysis

Table G-1. Effect of weighting adjustment on school bias estimates, before weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Charter status							
Noncharter	93.35	93.28	-0.06	0.13	-0.4753	0.6351	0.00
Charter	6.65	6.72	0.06	0.13	0.4753	0.6351	0.01
School enrollment							
Less than 200	15.42	16.73	1.31	0.33	3.9150	0.0001	0.08
200 to less than 500	38.05	38.86	0.80	0.40	1.9851	0.0485	0.02
500 to less than 750	25.95	25.70	-0.26	0.33	-0.7787	0.4371	-0.01
750 to less than 1,000	10.39	9.69	-0.69	0.21	-3.2410	0.0014	-0.07
1,000 or more	10.19	9.02	-1.17	0.19	-6.2232	0.0000	-0.13
Percent with race other than White							
Less than 5 percent	7.06	7.95	0.88	0.20	4.4944	0.0000	0.11
5 to less than 10 percent	9.71	10.69	0.98	0.18	5.3110	0.0000	0.09
10 to less than 20 percent	13.10	13.71	0.61	0.26	2.3661	0.0189	0.04
20 to less than 30 percent	11.00	11.28	0.28	0.21	1.3102	0.1916	0.02
30 to less than 50 percent	16.64	16.73	0.09	0.28	0.3302	0.7416	0.01
50 percent or more	42.49	39.65	-2.84	0.37	-7.6797	0.0000	-0.07
Percent free lunch eligible							
Less than 35 percent	28.70	27.50	-1.19	0.39	-3.0286	0.0028	-0.04
35 to less than 50 percent	16.50	17.25	0.75	0.26	2.9004	0.0041	0.04
50 to less than 75 percent	28.59	29.96	1.37	0.35	3.9122	0.0001	0.05
75 percent or more	26.21	25.28	-0.92	0.38	-2.4286	0.0160	-0.04
Locale							
City	27.56	24.78	-2.78	0.32	-8.5544	0.0000	-0.11
Suburb	32.18	30.70	-1.48	0.34	-4.3834	0.0000	-0.05
Town	13.52	14.80	1.28	0.24	5.3408	0.0000	0.09
Rural	26.74	29.72	2.98	0.34	8.8207	0.0000	0.10

See notes at end of table.

Table G-1. Effect of weighting adjustment on school bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Pupil-teacher ratio							
Less than 10	7.19	7.00	-0.19	0.26	-0.7308	0.4658	-0.03
10 to less than 15	35.38	35.14	-0.24	0.35	-0.6812	0.4965	-0.01
15 to less than 20	38.40	38.84	0.43	0.37	1.1693	0.2437	0.01
20 or more	19.03	19.02	0.00	0.30	-0.0116	0.9907	0.00
Grade level							
Primary	55.39	55.47	0.08	0.38	0.2204	0.8258	0.00
Middle	15.52	15.47	-0.05	0.24	-0.2235	0.8234	0.00
High school	21.52	21.04	-0.48	0.35	-1.3870	0.1670	-0.02
Combined	7.56	8.02	0.45	0.15	3.0145	0.0029	0.06
Region							
Northeast	15.94	14.73	-1.21	0.27	-4.5169	0.0000	-0.08
Midwest	24.22	26.02	1.80	0.30	5.9868	0.0000	0.07
South	35.70	35.06	-0.65	0.34	-1.9180	0.0565	-0.02
West	24.13	24.19	0.06	0.34	0.1745	0.8617	0.00
Number of teachers							
Less than 10	9.70	10.09	0.39	0.32	1.2202	0.2238	0.04
10 to less than 25	30.58	32.67	2.10	0.34	6.1771	0.0000	0.06
25 to less than 50	42.91	42.25	-0.66	0.39	-1.6886	0.0928	-0.02
50 to less than 75	10.63	9.72	-0.91	0.20	-4.5601	0.0000	-0.09
75 or more	6.18	5.27	-0.92	0.14	-6.6967	0.0000	-0.17
Title I status							
Title I program	56.25	56.84	0.59	0.42	1.4061	0.1612	0.01
Title I noneligible	27.39	26.17	-1.22	0.38	-3.1981	0.0016	-0.05
Title I eligible but no Title I program	16.36	16.99	0.63	0.30	2.1235	0.0349	0.04

See notes at end of table.

Table G-1. Effect of weighting adjustment on school bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
State							
Alabama	1.78	1.97	0.19	0.11	1.7852	0.0757	0.10
Alaska	0.63	0.58	-0.04	0.03	-1.2685	0.2061	-0.08
Arizona	2.32	2.50	0.18	0.12	1.4333	0.1533	0.07
Arkansas	0.95	1.16	0.21	0.05	3.8720	0.0001	0.18
California	11.19	11.03	-0.16	0.28	-0.5833	0.5603	-0.01
Colorado	1.58	1.19	-0.39	0.11	-3.7100	0.0003	-0.33
Connecticut	1.23	1.13	-0.10	0.09	-1.1871	0.2366	-0.09
Delaware	0.25	0.26	0.01	0.03	0.2348	0.8146	0.03
District of Columbia	0.20	0.14	-0.06	0.03	-1.9399	0.0538	-0.45
Florida	4.09	3.92	-0.17	0.14	-1.2131	0.2265	-0.04
Georgia	2.51	2.47	-0.04	0.10	-0.3967	0.6920	-0.02
Hawaii	0.32	0.41	0.10	0.02	4.6631	0.0000	0.23
Idaho	0.65	0.72	0.07	0.04	1.6748	0.0955	0.09
Illinois	4.26	4.29	0.03	0.14	0.1747	0.8615	0.01
Indiana	2.06	2.16	0.10	0.08	1.2016	0.2309	0.05
Iowa	1.31	1.55	0.25	0.07	3.4959	0.0006	0.16
Kansas	1.44	1.69	0.26	0.08	3.2614	0.0013	0.15
Kentucky	1.64	1.82	0.18	0.08	2.1423	0.0334	0.10
Louisiana	1.51	1.55	0.04	0.09	0.4288	0.6685	0.02
Maine	0.58	0.63	0.05	0.05	0.9908	0.3230	0.08
Maryland	1.63	1.22	-0.41	0.10	-4.0764	0.0001	-0.33
Massachusetts	1.88	1.52	-0.36	0.11	-3.3428	0.0010	-0.23
Michigan	3.47	3.71	0.24	0.13	1.9322	0.0548	0.07
Minnesota	1.75	1.92	0.17	0.08	2.1156	0.0356	0.09
Mississippi	1.25	1.45	0.20	0.06	3.0454	0.0026	0.14
Missouri	2.26	2.30	0.04	0.11	0.3325	0.7399	0.02
Montana	0.51	0.61	0.10	0.05	1.9606	0.0513	0.16

See notes at end of table.

Table G-1. Effect of weighting adjustment on school bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Nebraska	0.96	0.91	-0.05	0.06	-0.7265	0.4684	-0.05
Nevada	0.72	0.60	-0.12	0.09	-1.2641	0.2077	-0.20
New Hampshire	0.48	0.61	0.13	0.03	4.2392	0.0000	0.22
New Jersey	2.67	2.36	-0.31	0.12	-2.4972	0.0133	-0.13
New Mexico	1.07	1.25	0.18	0.07	2.6894	0.0078	0.14
New York	4.95	4.22	-0.73	0.17	-4.2277	0.0000	-0.17
North Carolina	2.97	2.89	-0.08	0.11	-0.7700	0.4422	-0.03
North Dakota	0.47	0.51	0.03	0.06	0.5253	0.5999	0.07
Ohio	3.51	3.86	0.35	0.13	2.8002	0.0056	0.09
Oklahoma	1.56	1.84	0.28	0.07	3.7392	0.0002	0.15
Oregon	1.44	1.41	-0.03	0.10	-0.2906	0.7717	-0.02
Pennsylvania	3.35	3.46	0.11	0.11	0.9559	0.3403	0.03
Rhode Island	0.33	0.33	0.00	0.04	-0.0695	0.9447	-0.01
South Carolina	1.27	1.39	0.12	0.08	1.5159	0.1311	0.09
South Dakota	0.59	0.64	0.05	0.06	0.8646	0.3883	0.09
Tennessee	1.80	2.09	0.29	0.07	4.0317	0.0001	0.14
Texas	9.28	8.01	-1.27	0.24	-5.3035	0.0000	-0.16
Utah	1.01	1.11	0.10	0.06	1.5998	0.1112	0.09
Vermont	0.46	0.47	0.00	0.05	0.0622	0.9505	0.01
Virginia	2.18	2.06	-0.12	0.10	-1.1461	0.2531	-0.06
Washington	2.28	2.34	0.06	0.11	0.5337	0.5941	0.03
West Virginia	0.81	0.80	-0.01	0.08	-0.0957	0.9239	-0.01
Wisconsin	2.16	2.48	0.33	0.09	3.6486	0.0003	0.13
Wyoming	0.40	0.43	0.03	0.05	0.5974	0.5509	0.07

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-2. Effect of weighting adjustment on school bias estimates, after weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Charter status							
Noncharter	93.35	93.28	-0.06	0.11	-0.5714	0.5684	0.00
Charter	6.65	6.72	0.06	0.11	0.5714	0.5684	0.01
School enrollment							
Less than 200	15.42	16.14	0.72	0.30	2.3841	0.0181	0.04
200 to less than 500	38.05	38.06	0.00	0.41	0.0098	0.9922	0.00
500 to less than 750	25.95	25.89	-0.06	0.33	-0.1893	0.8500	0.00
750 to less than 1,000	10.39	10.26	-0.13	0.21	-0.5979	0.5506	-0.01
1,000 or more	10.19	9.65	-0.54	0.24	-2.2098	0.0283	-0.06
Percent with race other than White							
Less than 5 percent	7.06	7.22	0.16	0.19	0.8375	0.4033	0.02
5 to less than 10 percent	9.71	9.76	0.06	0.17	0.3294	0.7422	0.01
10 to less than 20 percent	13.10	13.22	0.12	0.23	0.5152	0.6070	0.01
20 to less than 30 percent	11.00	11.01	0.00	0.22	0.0099	0.9921	0.00
30 to less than 50 percent	16.64	16.51	-0.13	0.26	-0.4847	0.6284	-0.01
50 percent or more	42.49	42.28	-0.21	0.35	-0.5865	0.5582	0.00
Percent free lunch eligible							
Less than 35 percent	28.70	27.85	-0.85	0.40	-2.1214	0.0351	-0.03
35 to less than 50 percent	16.50	16.75	0.25	0.27	0.9093	0.3643	0.01
50 to less than 75 percent	28.59	29.23	0.63	0.36	1.7559	0.0806	0.02
75 percent or more	26.21	26.17	-0.04	0.48	-0.0734	0.9416	0.00
Locale							
City	27.56	27.41	-0.15	0.40	-0.3776	0.7061	-0.01
Suburb	32.18	32.27	0.08	0.48	0.1749	0.8613	0.00
Town	13.52	13.47	-0.04	0.26	-0.1729	0.8629	0.00
Rural	26.74	26.85	0.11	0.37	0.2959	0.7676	0.00

See notes at end of table.

Table G-2. Effect of weighting adjustment on school bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Pupil-teacher ratio							
Less than 10	7.19	6.99	-0.20	0.25	-0.7967	0.4266	-0.03
10 to less than 15	35.38	34.78	-0.61	0.35	-1.7489	0.0818	-0.02
15 to less than 20	38.40	39.11	0.71	0.38	1.8498	0.0658	0.02
20 or more	19.03	19.12	0.09	0.27	0.3371	0.7364	0.00
Grade level							
Primary	55.39	55.76	0.37	0.60	0.6064	0.5450	0.01
Middle	15.52	15.61	0.09	0.40	0.2175	0.8280	0.01
High school	21.52	20.97	-0.56	0.44	-1.2693	0.2058	-0.03
Combined	7.56	7.66	0.10	0.20	0.5056	0.6137	0.01
Region							
Northeast	15.94	15.75	-0.19	0.23	-0.8413	0.4012	-0.01
Midwest	24.22	24.29	0.06	0.13	0.4793	0.6322	0.00
South	35.70	35.70	-0.01	0.27	-0.0273	0.9783	0.00
West	24.13	24.27	0.14	0.21	0.6517	0.5153	0.01
Number of teachers							
Less than 10	9.70	9.79	0.09	0.28	0.3317	0.7405	0.01
10 to less than 25	30.58	31.74	1.16	0.33	3.4641	0.0007	0.04
25 to less than 50	42.91	42.31	-0.60	0.40	-1.5192	0.1303	-0.01
50 to less than 75	10.63	10.41	-0.22	0.20	-1.0872	0.2782	-0.02
75 or more	6.18	5.75	-0.43	0.19	-2.2939	0.0228	-0.07
Title I status							
Title I program	56.25	56.29	0.04	0.40	0.1071	0.9148	0.00
Title I noneligible	27.39	26.97	-0.42	0.35	-1.2093	0.2280	-0.02
Title I eligible but no Title I program	16.36	16.74	0.38	0.25	1.5279	0.1281	0.02

See notes at end of table.

Table G-2. Effect of weighting adjustment on school bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
State							
Alabama	1.78	1.98	0.20	0.11	1.8010	0.0732	0.10
Alaska	0.63	0.55	-0.08	0.04	-2.2488	0.0256	-0.15
Arizona	2.32	2.55	0.22	0.13	1.7361	0.0841	0.09
Arkansas	0.95	1.11	0.16	0.05	3.0718	0.0024	0.15
California	11.19	11.20	0.00	0.24	0.0106	0.9916	0.00
Colorado	1.58	1.19	-0.39	0.11	-3.7324	0.0002	-0.33
Connecticut	1.23	1.29	0.05	0.10	0.5485	0.5839	0.04
Delaware	0.25	0.27	0.03	0.04	0.6804	0.4970	0.10
District of Columbia	0.20	0.15	-0.05	0.04	-1.5385	0.1255	-0.37
Florida	4.09	4.20	0.11	0.14	0.7731	0.4404	0.03
Georgia	2.51	2.56	0.04	0.11	0.4152	0.6784	0.02
Hawaii	0.32	0.42	0.10	0.02	4.2148	0.0000	0.24
Idaho	0.65	0.70	0.05	0.04	1.1400	0.2557	0.07
Illinois	4.26	4.16	-0.10	0.14	-0.7441	0.4577	-0.02
Indiana	2.06	2.01	-0.04	0.09	-0.4841	0.6289	-0.02
Iowa	1.31	1.40	0.10	0.06	1.5558	0.1213	0.07
Kansas	1.44	1.57	0.13	0.07	1.7460	0.0823	0.08
Kentucky	1.64	1.75	0.11	0.09	1.1640	0.2458	0.06
Louisiana	1.51	1.58	0.06	0.09	0.7111	0.4778	0.04
Maine	0.58	0.61	0.02	0.05	0.4486	0.6542	0.04
Maryland	1.63	1.34	-0.30	0.11	-2.6142	0.0096	-0.22
Massachusetts	1.88	1.67	-0.20	0.11	-1.8236	0.0697	-0.12
Michigan	3.47	3.51	0.04	0.12	0.3080	0.7584	0.01
Minnesota	1.75	1.76	0.01	0.07	0.1043	0.9170	0.00
Mississippi	1.25	1.40	0.15	0.06	2.2329	0.0267	0.10
Missouri	2.26	2.10	-0.15	0.10	-1.5189	0.1304	-0.07

See notes at end of table.

Table G-2. Effect of weighting adjustment on school bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias (percent)
Montana	0.51	0.57	0.06	0.04	1.4145	0.1588	0.11
Nebraska	0.96	0.83	-0.13	0.06	-2.2804	0.0236	-0.16
Nevada	0.72	0.61	-0.11	0.10	-1.1543	0.2497	-0.18
New Hampshire	0.48	0.60	0.13	0.03	4.0168	0.0001	0.21
New Jersey	2.67	2.67	0.01	0.13	0.0489	0.9611	0.00
New Mexico	1.07	1.22	0.15	0.06	2.4868	0.0137	0.13
New York	4.95	4.52	-0.44	0.17	-2.6374	0.0090	-0.10
North Carolina	2.97	2.88	-0.09	0.11	-0.7957	0.4272	-0.03
North Dakota	0.47	0.45	-0.03	0.06	-0.4864	0.6272	-0.06
Ohio	3.51	3.62	0.11	0.11	0.9521	0.3422	0.03
Oklahoma	1.56	1.73	0.17	0.07	2.3939	0.0176	0.10
Oregon	1.44	1.40	-0.04	0.10	-0.3951	0.6932	-0.03
Pennsylvania	3.35	3.60	0.24	0.12	2.0669	0.0400	0.07
Rhode Island	0.33	0.35	0.02	0.04	0.4729	0.6368	0.06
South Carolina	1.27	1.42	0.15	0.09	1.7059	0.0896	0.10
South Dakota	0.59	0.57	-0.02	0.05	-0.3681	0.7132	-0.04
Tennessee	1.80	2.05	0.25	0.07	3.4776	0.0006	0.12
Texas	9.28	8.34	-0.94	0.23	-4.0637	0.0001	-0.11
Utah	1.01	1.10	0.08	0.07	1.2218	0.2232	0.08
Vermont	0.46	0.43	-0.03	0.05	-0.6317	0.5283	-0.07
Virginia	2.18	2.19	0.01	0.11	0.0494	0.9606	0.00
Washington	2.28	2.36	0.08	0.11	0.7127	0.4768	0.03
West Virginia	0.81	0.75	-0.06	0.07	-0.8186	0.4140	-0.07
Wisconsin	2.16	2.32	0.16	0.09	1.8309	0.0686	0.07
Wyoming	0.40	0.41	0.01	0.05	0.1851	0.8533	0.02

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-3. Effect of weighting adjustment on principal bias estimates, before weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	93.35	93.33	-0.01	0.13	-0.0876	0.9303	0.00
Charter	6.65	6.67	0.01	0.13	0.0876	0.9303	0.00
School enrollment							
Less than 200	15.42	16.79	1.37	0.33	4.1596	0.0000	0.08
200 to less than 500	38.05	38.72	0.67	0.41	1.6363	0.1033	0.02
500 to less than 750	25.94	25.52	-0.42	0.34	-1.2231	0.2227	-0.02
750 to less than 1000	10.39	9.73	-0.66	0.21	-3.1165	0.0021	-0.07
1000 or more	10.19	9.24	-0.95	0.20	-4.7853	0.0000	-0.10
Percent non-White							
Less than 5 percent	7.07	8.09	1.03	0.19	5.4931	0.0000	0.13
5 to less than 10 percent	9.71	10.85	1.14	0.19	5.9097	0.0000	0.10
10 to less than 20 percent	13.10	13.71	0.61	0.26	2.3101	0.0219	0.04
20 to less than 30 percent	11.01	11.42	0.41	0.21	1.9372	0.0541	0.04
30 to less than 50 percent	16.64	16.70	0.06	0.27	0.2272	0.8205	0.00
50 percent or more	42.47	39.22	-3.25	0.36	-8.9991	0.0000	-0.08
Percent free lunch eligible							
Less than 35 percent	28.71	27.70	-1.01	0.38	-2.6309	0.0092	-0.04
35 to less than 50 percent	16.50	17.28	0.78	0.26	3.0151	0.0029	0.05
50 to less than 75 percent	28.58	29.98	1.39	0.34	4.0702	0.0001	0.05
75 percent or more	26.20	25.04	-1.17	0.37	-3.1271	0.0020	-0.05
Locale							
City	27.55	24.56	-2.99	0.33	-9.1964	0.0000	-0.12
Suburb	32.20	30.45	-1.75	0.35	-5.0223	0.0000	-0.06
Town	13.52	15.20	1.68	0.24	7.0706	0.0000	0.11
Rural	26.74	29.80	3.06	0.33	9.2053	0.0000	0.10

See notes at end of table.

Table G-3. Effect of weighting adjustment on principal bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Pupil-teacher ratio							
Less than 10	7.19	7.07	-0.12	0.26	-0.4601	0.6459	-0.02
10 to less than 15	35.38	35.14	-0.24	0.35	-0.6854	0.4939	-0.01
15 to less than 20	38.42	39.09	0.68	0.36	1.8892	0.0603	0.02
20 or more	19.01	18.70	-0.32	0.32	-1.0061	0.3156	-0.02
Grade level							
Primary	55.37	55.04	-0.33	0.39	-0.8481	0.3974	-0.01
Middle	15.53	15.54	0.01	0.26	0.0403	0.9679	0.00
High School	21.53	21.40	-0.13	0.35	-0.3818	0.7030	-0.01
Combined	7.56	8.02	0.46	0.15	3.0032	0.0030	0.06
Region							
Northeast	15.95	14.58	-1.36	0.27	-5.1056	0.0000	-0.09
Midwest	24.23	26.10	1.87	0.30	6.2554	0.0000	0.07
South	35.70	35.32	-0.38	0.33	-1.1529	0.2503	-0.01
West	24.12	24.00	-0.12	0.34	-0.3668	0.7142	-0.01
Number of teachers							
Less than 10	9.70	10.06	0.36	0.30	1.1784	0.2400	0.04
10 to less than 25	30.57	32.80	2.23	0.35	6.3075	0.0000	0.07
25 to less than 50	42.91	41.93	-0.98	0.39	-2.5003	0.0132	-0.02
50 to less than 75	10.63	9.75	-0.88	0.21	-4.1876	0.0000	-0.09
75 or more	6.18	5.46	-0.73	0.14	-5.1407	0.0000	-0.13
Title I status							
Title I program	56.23	56.83	0.60	0.42	1.4087	0.1605	0.01
Title I noneligible	27.40	26.23	-1.17	0.39	-3.0366	0.0027	-0.04
Title I eligible but no Title I program	16.36	16.94	0.58	0.31	1.8801	0.0616	0.03

See notes at end of table.

Table G-3. Effect of weighting adjustment on principal bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
State							
Alabama	1.78	1.99	0.21	0.11	1.9052	0.0582	0.10
Alaska	0.63	0.59	-0.04	0.04	-1.0741	0.2841	-0.06
Arizona	2.32	2.50	0.17	0.12	1.3890	0.1664	0.07
Arkansas	0.95	1.14	0.19	0.06	3.2888	0.0012	0.16
California	11.18	10.89	-0.29	0.29	-0.9982	0.3194	-0.03
Colorado	1.58	1.18	-0.40	0.11	-3.6983	0.0003	-0.34
Connecticut	1.23	1.12	-0.11	0.09	-1.3026	0.1942	-0.10
Delaware	0.25	0.29	0.04	0.03	1.4484	0.1491	0.14
District of Columbia	0.20	0.12	-0.09	0.03	-2.7620	0.0063	-0.74
Florida	4.09	3.95	-0.14	0.14	-0.9859	0.3254	-0.04
Georgia	2.51	2.47	-0.04	0.10	-0.4346	0.6643	-0.02
Hawaii	0.32	0.42	0.10	0.02	4.8252	0.0000	0.24
Idaho	0.65	0.74	0.10	0.04	2.6453	0.0088	0.13
Illinois	4.27	4.33	0.06	0.14	0.4184	0.6761	0.01
Indiana	2.06	2.13	0.07	0.08	0.8136	0.4169	0.03
Iowa	1.31	1.56	0.25	0.07	3.6873	0.0003	0.16
Kansas	1.44	1.69	0.26	0.08	3.2009	0.0016	0.15
Kentucky	1.64	1.84	0.20	0.08	2.3423	0.0201	0.11
Louisiana	1.51	1.51	-0.01	0.09	-0.0749	0.9403	0.00
Maine	0.58	0.64	0.06	0.05	1.1107	0.2680	0.09
Maryland	1.63	1.21	-0.42	0.10	-4.0732	0.0001	-0.35
Massachusetts	1.88	1.61	-0.27	0.10	-2.5748	0.0108	-0.17
Michigan	3.47	3.70	0.23	0.14	1.6439	0.1018	0.06
Minnesota	1.75	1.88	0.13	0.08	1.6038	0.1103	0.07
Mississippi	1.25	1.48	0.23	0.07	3.3832	0.0009	0.15
Missouri	2.26	2.30	0.04	0.12	0.3615	0.7181	0.02
Montana	0.51	0.57	0.06	0.05	1.2080	0.2285	0.11
Nebraska	0.96	0.92	-0.04	0.07	-0.5703	0.5691	-0.04

See notes at end of table.

Table G-3. Effect of weighting adjustment on principal bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Nevada	0.72	0.54	-0.19	0.06	-2.9206	0.0039	-0.35
New Hampshire	0.48	0.62	0.14	0.03	4.3907	0.0000	0.23
New Jersey	2.67	2.32	-0.35	0.13	-2.7825	0.0059	-0.15
New Mexico	1.07	1.20	0.13	0.08	1.6908	0.0924	0.11
New York	4.96	4.01	-0.95	0.18	-5.2753	0.0000	-0.24
North Carolina	2.95	2.93	-0.02	0.11	-0.2079	0.8355	-0.01
North Dakota	0.47	0.53	0.06	0.06	0.9482	0.3442	0.11
Ohio	3.51	3.88	0.37	0.13	2.9215	0.0039	0.10
Oklahoma	1.56	1.83	0.27	0.07	3.6265	0.0004	0.15
Oregon	1.44	1.43	-0.01	0.10	-0.1427	0.8867	-0.01
Pennsylvania	3.36	3.48	0.12	0.11	1.1133	0.2669	0.04
Rhode Island	0.33	0.31	-0.02	0.04	-0.4957	0.6206	-0.07
South Carolina	1.27	1.43	0.16	0.07	2.2503	0.0255	0.11
South Dakota	0.59	0.67	0.08	0.06	1.3576	0.1761	0.12
Tennessee	1.81	2.08	0.27	0.08	3.3748	0.0009	0.13
Texas	9.29	8.10	-1.18	0.24	-4.8579	0.0000	-0.15
Utah	1.01	1.14	0.13	0.06	2.2061	0.0285	0.11
Vermont	0.46	0.48	0.01	0.05	0.2816	0.7786	0.03
Virginia	2.18	2.06	-0.12	0.10	-1.1365	0.2571	-0.06
Washington	2.28	2.35	0.07	0.11	0.6595	0.5103	0.03
West Virginia	0.81	0.89	0.08	0.06	1.2683	0.2062	0.09
Wisconsin	2.16	2.51	0.35	0.09	3.8681	0.0001	0.14
Wyoming	0.40	0.44	0.04	0.05	0.6744	0.5008	0.08

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-4. Effect of weighting adjustment on principal bias estimates, after weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	93.35	92.80	-0.55	0.17	-3.2635	0.0013	-0.01
Charter	6.65	7.20	0.55	0.17	3.2635	0.0013	0.08
School enrollment							
Less than 200	15.42	16.12	0.70	0.34	2.0776	0.0390	0.04
200 to less than 500	38.05	38.26	0.21	0.43	0.4907	0.6242	0.01
500 to less than 750	25.94	25.88	-0.07	0.36	-0.1802	0.8572	0.00
750 to less than 1000	10.39	10.10	-0.30	0.23	-1.2759	0.2035	-0.03
1000 or more	10.19	9.65	-0.55	0.25	-2.1907	0.0296	-0.06
Percent non-White							
Less than 5 percent	7.07	7.24	0.18	0.18	0.9836	0.3265	0.02
5 to less than 10 percent	9.71	9.83	0.12	0.18	0.6383	0.5240	0.01
10 to less than 20 percent	13.10	13.20	0.10	0.24	0.4096	0.6825	0.01
20 to less than 30 percent	11.01	11.06	0.05	0.22	0.2305	0.8179	0.00
30 to less than 50 percent	16.64	16.33	-0.32	0.25	-1.2571	0.2102	-0.02
50 percent or more	42.47	42.34	-0.13	0.35	-0.3609	0.7185	0.00
Percent free lunch eligible							
Less than 35 percent	28.71	27.90	-0.81	0.38	-2.1291	0.0345	-0.03
35 to less than 50 percent	16.50	16.74	0.24	0.28	0.8645	0.3884	0.01
50 to less than 75 percent	28.58	29.19	0.61	0.34	1.8082	0.0721	0.02
75 percent or more	26.20	26.16	-0.04	0.48	-0.0839	0.9332	0.00
Locale							
City	27.55	27.40	-0.14	0.40	-0.3600	0.7192	-0.01
Suburb	32.20	32.28	0.08	0.48	0.1707	0.8646	0.00
Town	13.52	13.70	0.18	0.25	0.7100	0.4785	0.01
Rural	26.74	26.62	-0.12	0.37	-0.3175	0.7512	0.00

See notes at end of table.

Table G-4. Effect of weighting adjustment on principal bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Pupil-teacher ratio							
Less than 10	7.19	6.89	-0.30	0.26	-1.1418	0.2549	-0.04
10 to less than 15	35.38	34.84	-0.54	0.35	-1.5656	0.1190	-0.02
15 to less than 20	38.42	39.34	0.92	0.38	2.4448	0.0154	0.02
20 or more	19.01	18.93	-0.08	0.28	-0.2884	0.7733	0.00
Grade level							
Primary	55.37	55.73	0.35	0.61	0.5790	0.5632	0.01
Middle	15.53	15.62	0.09	0.40	0.2189	0.8270	0.01
High School	21.53	21.05	-0.48	0.44	-1.1011	0.2722	-0.02
Combined	7.56	7.61	0.04	0.20	0.2049	0.8379	0.01
Region							
Northeast	15.95	15.98	0.04	0.24	0.1526	0.8789	0.00
Midwest	24.23	24.26	0.02	0.16	0.1442	0.8855	0.00
South	35.70	35.61	-0.09	0.22	-0.3975	0.6914	0.00
West	24.12	24.15	0.03	0.15	0.1962	0.8447	0.00
Number of teachers							
Less than 10	9.70	9.73	0.02	0.30	0.0775	0.9383	0.00
10 to less than 25	30.57	32.10	1.53	0.35	4.3126	0.0000	0.05
25 to less than 50	42.91	42.22	-0.69	0.42	-1.6350	0.1036	-0.02
50 to less than 75	10.63	10.18	-0.45	0.23	-1.9986	0.0470	-0.04
75 or more	6.18	5.78	-0.40	0.19	-2.1084	0.0362	-0.07
Title I status							
Title I program	56.23	56.59	0.36	0.39	0.9307	0.3531	0.01
Title I noneligible	27.40	26.79	-0.61	0.35	-1.7404	0.0833	-0.02
Title I eligible but no Title I program	16.36	16.61	0.25	0.26	0.9624	0.3370	0.01

See notes at end of table.

Table G-4. Effect of weighting adjustment on principal bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
State							
Alabama	1.78	1.97	0.19	0.11	1.6854	0.0935	0.10
Alaska	0.63	0.55	-0.08	0.04	-2.1855	0.0300	-0.14
Arizona	2.32	2.58	0.25	0.12	2.0282	0.0439	0.10
Arkansas	0.95	1.08	0.13	0.06	2.2436	0.0260	0.12
California	11.18	11.09	-0.08	0.22	-0.3740	0.7088	-0.01
Colorado	1.58	1.20	-0.39	0.11	-3.5721	0.0004	-0.32
Connecticut	1.23	1.33	0.10	0.11	0.8928	0.3730	0.07
Delaware	0.25	0.31	0.06	0.03	1.8400	0.0673	0.20
District of Columbia	0.20	0.13	-0.07	0.03	-2.0164	0.0451	-0.51
Florida	4.09	4.22	0.13	0.14	0.9220	0.3576	0.03
Georgia	2.51	2.54	0.03	0.11	0.2637	0.7923	0.01
Hawaii	0.32	0.43	0.11	0.02	4.5866	0.0000	0.26
Idaho	0.65	0.72	0.07	0.04	1.8390	0.0674	0.10
Illinois	4.27	4.12	-0.14	0.14	-1.0229	0.3076	-0.03
Indiana	2.06	1.96	-0.10	0.08	-1.2661	0.2070	-0.05
Iowa	1.31	1.40	0.09	0.06	1.4542	0.1475	0.06
Kansas	1.44	1.56	0.12	0.07	1.6358	0.1035	0.08
Kentucky	1.64	1.73	0.08	0.08	0.9812	0.3277	0.05
Louisiana	1.51	1.53	0.01	0.09	0.1569	0.8755	0.01
Maine	0.58	0.60	0.02	0.05	0.4047	0.6861	0.04
Maryland	1.63	1.33	-0.31	0.12	-2.6684	0.0082	-0.23
Massachusetts	1.88	1.84	-0.04	0.12	-0.3425	0.7324	-0.02
Michigan	3.47	3.51	0.03	0.13	0.2632	0.7926	0.01
Minnesota	1.75	1.70	-0.05	0.07	-0.6517	0.5153	-0.03
Mississippi	1.25	1.41	0.16	0.07	2.3794	0.0183	0.11
Missouri	2.26	2.10	-0.16	0.11	-1.4594	0.1460	-0.07
Montana	0.51	0.53	0.02	0.05	0.4777	0.6334	0.04

See notes at end of table.

Table G-4. Effect of weighting adjustment on principal bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Nebraska	0.96	0.83	-0.13	0.06	-2.2342	0.0266	-0.16
Nevada	0.72	0.55	-0.17	0.07	-2.6028	0.0099	-0.31
New Hampshire	0.48	0.62	0.14	0.03	4.1908	0.0000	0.23
New Jersey	2.67	2.67	0.00	0.14	0.0053	0.9958	0.00
New Mexico	1.07	1.18	0.12	0.08	1.5571	0.1210	0.10
New York	4.96	4.43	-0.53	0.18	-2.9888	0.0032	-0.12
North Carolina	2.95	2.88	-0.07	0.12	-0.5896	0.5561	-0.02
North Dakota	0.47	0.47	-0.01	0.06	-0.1607	0.8725	-0.02
Ohio	3.51	3.70	0.19	0.12	1.5816	0.1153	0.05
Oklahoma	1.56	1.71	0.15	0.07	1.9901	0.0479	0.09
Oregon	1.44	1.42	-0.03	0.10	-0.2553	0.7987	-0.02
Pennsylvania	3.36	3.70	0.35	0.13	2.7019	0.0075	0.09
Rhode Island	0.33	0.34	0.01	0.04	0.2366	0.8132	0.03
South Carolina	1.27	1.44	0.17	0.08	2.2080	0.0284	0.12
South Dakota	0.59	0.59	0.00	0.05	0.0073	0.9942	0.00
Tennessee	1.81	2.01	0.20	0.08	2.5971	0.0101	0.10
Texas	9.29	8.37	-0.92	0.23	-3.9609	0.0001	-0.11
Utah	1.01	1.13	0.12	0.06	1.7872	0.0754	0.10
Vermont	0.46	0.45	-0.02	0.05	-0.3730	0.7096	-0.04
Virginia	2.18	2.14	-0.05	0.11	-0.4017	0.6884	-0.02
Washington	2.28	2.35	0.07	0.11	0.6228	0.5342	0.03
West Virginia	0.81	0.81	0.00	0.06	0.0627	0.9500	0.00
Wisconsin	2.16	2.33	0.17	0.09	1.9019	0.0586	0.08
Wyoming	0.40	0.42	0.02	0.05	0.3025	0.7626	0.04

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-5. Effect of weighting adjustment on teacher listing form bias estimates, before weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	93.35	93.86	0.52	0.11	4.6718	0.0000	0.01
Charter	6.65	6.14	-0.52	0.11	-4.6718	0.0000	-0.08
School enrollment							
Less than 200	15.42	15.35	-0.07	0.27	-0.2627	0.7930	0.00
200 to less than 500	38.05	38.63	0.58	0.28	2.0797	0.0388	0.02
500 to less than 750	25.95	26.15	0.20	0.22	0.8830	0.3783	0.01
750 to less than 1000	10.39	10.01	-0.38	0.15	-2.4640	0.0146	-0.04
1000 or more	10.19	9.85	-0.34	0.13	-2.5863	0.0104	-0.03
Percent non-White							
Less than 5 percent	7.06	7.49	0.42	0.14	3.1337	0.0020	0.06
5 to less than 10 percent	9.71	10.22	0.52	0.13	3.8502	0.0002	0.05
10 to less than 20 percent	13.10	13.33	0.24	0.18	1.3420	0.1811	0.02
20 to less than 30 percent	11.00	10.85	-0.15	0.16	-0.9533	0.3416	-0.01
30 to less than 50 percent	16.64	16.57	-0.07	0.22	-0.3159	0.7524	0.00
50 percent or more	42.49	41.54	-0.95	0.25	-3.7753	0.0002	-0.02
Percent free lunch eligible							
Less than 35 percent	28.70	27.28	-1.42	0.26	-5.4770	0.0000	-0.05
35 to less than 50 percent	16.50	17.00	0.50	0.19	2.6054	0.0099	0.03
50 to less than 75 percent	28.59	29.63	1.04	0.23	4.4865	0.0000	0.04
75 percent or more	26.21	26.09	-0.12	0.24	-0.5026	0.6158	0.00
Locale							
City	27.56	26.31	-1.25	0.22	-5.7046	0.0000	-0.05
Suburb	32.18	31.06	-1.12	0.22	-5.1136	0.0000	-0.04
Town	13.52	14.33	0.82	0.15	5.3141	0.0000	0.06
Rural	26.74	28.30	1.55	0.21	7.4108	0.0000	0.05

See notes at end of table.

**Table G-5. Effect of weighting adjustment on teacher listing form bias estimates, before weighting adjustment: 2015–16 NTPS—
Continued**

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Pupil-teacher ratio							
Less than 10	7.19	6.72	-0.47	0.21	-2.2138	0.0280	-0.07
10 to less than 15	35.38	35.36	-0.02	0.24	-0.0935	0.9256	0.00
15 to less than 20	38.40	39.04	0.63	0.26	2.4459	0.0153	0.02
20 or more	19.03	18.89	-0.14	0.20	-0.6875	0.4926	-0.01
Grade level							
Primary	55.39	55.55	0.16	0.29	0.5365	0.5922	0.00
Middle	15.52	15.70	0.18	0.19	0.9443	0.3462	0.01
High School	21.52	21.44	-0.08	0.26	-0.3203	0.7491	0.00
Combined	7.56	7.31	-0.25	0.13	-1.9662	0.0507	-0.03
Region							
Northeast	15.94	15.17	-0.77	0.19	-4.0664	0.0001	-0.05
Midwest	24.22	25.09	0.87	0.21	4.1171	0.0001	0.03
South	35.70	35.58	-0.12	0.22	-0.5532	0.5807	0.00
West	24.13	24.16	0.02	0.21	0.1140	0.9094	0.00
Number of teachers							
Less than 10	9.70	9.25	-0.45	0.27	-1.6898	0.0926	-0.05
10 to less than 25	30.58	31.61	1.03	0.23	4.4038	0.0000	0.03
25 to less than 50	42.91	42.93	0.02	0.26	0.0660	0.9475	0.00
50 to less than 75	10.63	10.33	-0.30	0.15	-1.9752	0.0496	-0.03
75 or more	6.18	5.88	-0.30	0.09	-3.1342	0.0020	-0.05
Title I status							
Title I program	56.25	57.54	1.29	0.26	4.9368	0.0000	0.02
Title I noneligible	27.39	25.60	-1.79	0.28	-6.4558	0.0000	-0.07
Title I eligible but no Title I program	16.36	16.86	0.50	0.18	2.7086	0.0073	0.03

See notes at end of table.

**Table G-5. Effect of weighting adjustment on teacher listing form bias estimates, before weighting adjustment: 2015–16 NTPS—
Continued**

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
State							
Alabama	1.78	1.88	0.10	0.09	1.1499	0.2515	0.05
Alaska	0.63	0.59	-0.04	0.02	-1.7086	0.0891	-0.06
Arizona	2.32	2.38	0.05	0.09	0.5909	0.5553	0.02
Arkansas	0.95	1.05	0.09	0.04	2.6488	0.0087	0.09
California	11.19	11.42	0.22	0.18	1.2461	0.2142	0.02
Colorado	1.58	1.34	-0.25	0.08	-2.9550	0.0035	-0.18
Connecticut	1.23	1.16	-0.07	0.07	-1.1097	0.2685	-0.06
Delaware	0.25	0.27	0.02	0.02	1.0704	0.2857	0.07
District of Columbia	0.20	0.20	0.00	0.01	-0.2426	0.8085	-0.01
Florida	4.09	3.90	-0.19	0.09	-2.0087	0.0459	-0.05
Georgia	2.51	2.49	-0.02	0.07	-0.2962	0.7674	-0.01
Hawaii	0.32	0.36	0.04	0.01	2.7742	0.0061	0.11
Idaho	0.65	0.59	-0.06	0.04	-1.4899	0.1378	-0.10
Illinois	4.26	4.62	0.36	0.08	4.2054	0.0000	0.08
Indiana	2.06	2.09	0.03	0.06	0.5440	0.5871	0.01
Iowa	1.31	1.38	0.07	0.05	1.5091	0.1328	0.05
Kansas	1.44	1.62	0.18	0.04	4.4892	0.0000	0.11
Kentucky	1.64	1.74	0.09	0.06	1.5263	0.1285	0.05
Louisiana	1.51	1.52	0.01	0.06	0.1135	0.9097	0.00
Maine	0.58	0.56	-0.02	0.04	-0.5905	0.5555	-0.04
Maryland	1.63	1.40	-0.23	0.08	-2.9495	0.0036	-0.17
Massachusetts	1.88	1.81	-0.06	0.08	-0.8122	0.4176	-0.03
Michigan	3.47	3.50	0.03	0.11	0.2549	0.7990	0.01
Minnesota	1.75	1.75	0.00	0.06	-0.0170	0.9864	0.00
Mississippi	1.25	1.33	0.07	0.05	1.5102	0.1326	0.06
Missouri	2.26	2.21	-0.05	0.08	-0.6845	0.4944	-0.02

See notes at end of table.

**Table G-5. Effect of weighting adjustment on teacher listing form bias estimates, before weighting adjustment: 2015–16 NTPS—
Continued**

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Montana	0.51	0.46	-0.05	0.05	-1.0680	0.2868	-0.12
Nebraska	0.96	0.88	-0.08	0.05	-1.6365	0.1033	-0.09
Nevada	0.72	0.62	-0.10	0.05	-2.0954	0.0374	-0.17
New Hampshire	0.48	0.55	0.07	0.02	4.0159	0.0001	0.13
New Jersey	2.67	2.53	-0.14	0.09	-1.5707	0.1178	-0.06
New Mexico	1.07	1.14	0.08	0.05	1.5517	0.1223	0.07
New York	4.95	4.51	-0.44	0.13	-3.4588	0.0007	-0.10
North Carolina	2.97	2.96	-0.01	0.07	-0.1146	0.9088	0.00
North Dakota	0.47	0.47	-0.01	0.06	-0.0994	0.9210	-0.01
Ohio	3.51	3.72	0.22	0.07	2.9395	0.0037	0.06
Oklahoma	1.56	1.60	0.04	0.06	0.6710	0.5030	0.02
Oregon	1.44	1.39	-0.06	0.07	-0.8451	0.3991	-0.04
Pennsylvania	3.35	3.27	-0.09	0.08	-1.0575	0.2916	-0.03
Rhode Island	0.33	0.31	-0.02	0.03	-0.6242	0.5332	-0.07
South Carolina	1.27	1.34	0.07	0.06	1.2482	0.2134	0.05
South Dakota	0.59	0.62	0.03	0.04	0.9133	0.3622	0.05
Tennessee	1.80	1.95	0.15	0.05	3.1594	0.0018	0.07
Texas	9.28	9.06	-0.22	0.16	-1.4010	0.1628	-0.02
Utah	1.01	1.04	0.03	0.04	0.8600	0.3908	0.03
Vermont	0.46	0.47	0.00	0.03	0.1601	0.8729	0.01
Virginia	2.18	2.04	-0.14	0.06	-2.3280	0.0209	-0.07
Washington	2.28	2.39	0.11	0.08	1.3895	0.1662	0.05
West Virginia	0.81	0.86	0.05	0.04	1.2928	0.1976	0.06
Wisconsin	2.16	2.24	0.09	0.07	1.2720	0.2048	0.04
Wyoming	0.40	0.45	0.05	0.02	1.9653	0.0508	0.10

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-6. Effect of weighting adjustment on teacher listing form bias estimates, after weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	93.35	93.59	0.24	0.13	1.8662	0.0635	0.00
Charter	6.65	6.41	-0.24	0.13	-1.8662	0.0635	-0.04
School enrollment							
Less than 200	15.42	15.92	0.50	0.33	1.5299	0.1276	0.03
200 to less than 500	38.05	38.20	0.15	0.43	0.3477	0.7284	0.00
500 to less than 750	25.95	26.00	0.05	0.34	0.1311	0.8958	0.00
750 to less than 1000	10.39	10.30	-0.09	0.22	-0.4129	0.6801	-0.01
1000 or more	10.19	9.59	-0.60	0.25	-2.4314	0.0159	-0.06
Percent non-White							
Less than 5 percent	7.06	7.35	0.29	0.19	1.5049	0.1339	0.04
5 to less than 10 percent	9.71	9.88	0.17	0.19	0.9308	0.3531	0.02
10 to less than 20 percent	13.10	13.34	0.25	0.24	1.0114	0.3130	0.02
20 to less than 30 percent	11.00	11.09	0.09	0.22	0.4004	0.6893	0.01
30 to less than 50 percent	16.64	16.46	-0.18	0.28	-0.6477	0.5179	-0.01
50 percent or more	42.49	41.87	-0.62	0.37	-1.6420	0.1022	-0.01
Percent free lunch eligible							
Less than 35 percent	28.70	27.93	-0.77	0.40	-1.9199	0.0563	-0.03
35 to less than 50 percent	16.50	16.83	0.34	0.28	1.1912	0.2350	0.02
50 to less than 75 percent	28.59	29.35	0.75	0.37	2.0263	0.0441	0.03
75 percent or more	26.21	25.89	-0.31	0.50	-0.6356	0.5258	-0.01
Locale							
City	27.56	27.22	-0.34	0.41	-0.8368	0.4037	-0.01
Suburb	32.18	32.31	0.13	0.50	0.2611	0.7943	0.00
Town	13.52	13.49	-0.03	0.26	-0.0946	0.9247	0.00
Rural	26.74	26.98	0.24	0.38	0.6228	0.5341	0.01

See notes at end of table.

Table G-6. Effect of weighting adjustment on teacher listing form bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Pupil-teacher ratio							
Less than 10	7.19	6.81	-0.38	0.26	-1.4193	0.1574	-0.06
10 to less than 15	35.38	34.78	-0.60	0.37	-1.6384	0.1029	-0.02
15 to less than 20	38.40	39.40	1.00	0.41	2.4442	0.0154	0.03
20 or more	19.03	19.00	-0.02	0.30	-0.0786	0.9375	0.00
Grade level							
Primary	55.39	55.94	0.55	0.62	0.8860	0.3767	0.01
Middle	15.52	15.69	0.16	0.41	0.3956	0.6928	0.01
High School	21.52	20.97	-0.55	0.45	-1.2197	0.2240	-0.03
Combined	7.56	7.40	-0.16	0.21	-0.7700	0.4422	-0.02
Region							
Northeast	15.94	15.88	-0.06	0.23	-0.2715	0.7863	0.00
Midwest	24.22	24.39	0.16	0.15	1.0545	0.2929	0.01
South	35.70	35.49	-0.22	0.28	-0.7653	0.4450	-0.01
West	24.13	24.25	0.12	0.23	0.5026	0.6158	0.00
Number of teachers							
Less than 10	9.70	9.56	-0.14	0.31	-0.4710	0.6381	-0.02
10 to less than 25	30.58	31.81	1.23	0.34	3.6139	0.0004	0.04
25 to less than 50	42.91	42.50	-0.41	0.41	-0.9859	0.3254	-0.01
50 to less than 75	10.63	10.36	-0.27	0.21	-1.2597	0.2092	-0.03
75 or more	6.18	5.77	-0.41	0.19	-2.1489	0.0328	-0.07
Title I status							
Title I program	56.25	56.24	0.00	0.42	-0.0105	0.9916	0.00
Title I noneligible	27.39	26.81	-0.58	0.36	-1.5997	0.1113	-0.02
Title I eligible but no Title I program	16.36	16.94	0.59	0.26	2.2820	0.0235	0.03

See notes at end of table.

Table G-6. Effect of weighting adjustment on teacher listing form bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
State							
Alabama	1.78	2.01	0.24	0.12	2.0152	0.0452	0.12
Alaska	0.63	0.56	-0.07	0.04	-1.7760	0.0773	-0.12
Arizona	2.32	2.51	0.19	0.13	1.3921	0.1655	0.07
Arkansas	0.95	1.12	0.17	0.06	2.8517	0.0048	0.15
California	11.19	11.22	0.02	0.25	0.0831	0.9338	0.00
Colorado	1.58	1.22	-0.37	0.11	-3.3978	0.0008	-0.30
Connecticut	1.23	1.30	0.06	0.10	0.6400	0.5229	0.05
Delaware	0.25	0.27	0.03	0.04	0.6411	0.5222	0.10
District of Columbia	0.20	0.14	-0.06	0.04	-1.5906	0.1133	-0.40
Florida	4.09	4.07	-0.02	0.15	-0.1200	0.9046	0.00
Georgia	2.51	2.57	0.06	0.11	0.5591	0.5767	0.02
Hawaii	0.32	0.41	0.09	0.03	3.0457	0.0026	0.22
Idaho	0.65	0.69	0.04	0.05	0.8087	0.4196	0.06
Illinois	4.26	4.17	-0.10	0.15	-0.6565	0.5122	-0.02
Indiana	2.06	2.03	-0.03	0.09	-0.3014	0.7634	-0.01
Iowa	1.31	1.40	0.10	0.07	1.4757	0.1416	0.07
Kansas	1.44	1.56	0.12	0.08	1.5256	0.1287	0.08
Kentucky	1.64	1.78	0.14	0.10	1.4320	0.1537	0.08
Louisiana	1.51	1.55	0.04	0.10	0.4170	0.6772	0.03
Maine	0.58	0.62	0.04	0.05	0.7330	0.4644	0.06
Maryland	1.63	1.29	-0.34	0.11	-3.0480	0.0026	-0.27
Massachusetts	1.88	1.69	-0.18	0.11	-1.5961	0.1120	-0.11
Michigan	3.47	3.48	0.01	0.13	0.0569	0.9547	0.00
Minnesota	1.75	1.79	0.05	0.07	0.6160	0.5386	0.03
Mississippi	1.25	1.39	0.14	0.07	1.9871	0.0483	0.10

See notes at end of table.

Table G-6. Effect of weighting adjustment on teacher listing form bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Missouri	2.26	2.10	-0.16	0.11	-1.5547	0.1216	-0.08
Montana	0.51	0.50	-0.01	0.06	-0.1517	0.8796	-0.02
Nebraska	0.96	0.83	-0.13	0.06	-2.0936	0.0376	-0.16
Nevada	0.72	0.63	-0.09	0.10	-0.9583	0.3391	-0.15
New Hampshire	0.48	0.62	0.14	0.03	4.3698	0.0000	0.23
New Jersey	2.67	2.70	0.03	0.14	0.2368	0.8130	0.01
New Mexico	1.07	1.20	0.13	0.08	1.7423	0.0830	0.11
New York	4.95	4.49	-0.46	0.18	-2.6109	0.0097	-0.10
North Carolina	2.97	2.89	-0.08	0.12	-0.6718	0.5025	-0.03
North Dakota	0.47	0.46	-0.02	0.06	-0.2820	0.7782	-0.04
Ohio	3.51	3.63	0.12	0.12	1.0218	0.3081	0.03
Oklahoma	1.56	1.72	0.16	0.08	2.0257	0.0441	0.09
Oregon	1.44	1.42	-0.02	0.11	-0.2220	0.8245	-0.02
Pennsylvania	3.35	3.65	0.30	0.12	2.4319	0.0159	0.08
Rhode Island	0.33	0.35	0.02	0.05	0.3271	0.7439	0.04
South Carolina	1.27	1.41	0.14	0.09	1.5486	0.1231	0.10
South Dakota	0.59	0.57	-0.01	0.06	-0.2160	0.8292	-0.02
Tennessee	1.80	2.02	0.22	0.07	3.0580	0.0025	0.11
Texas	9.28	8.30	-0.99	0.24	-4.0304	0.0001	-0.12
Utah	1.01	1.08	0.07	0.07	1.0269	0.3057	0.06
Vermont	0.46	0.45	-0.02	0.05	-0.3664	0.7145	-0.04
Virginia	2.18	2.17	-0.01	0.11	-0.1059	0.9157	-0.01
Washington	2.28	2.40	0.12	0.12	1.0009	0.3181	0.05
West Virginia	0.81	0.76	-0.05	0.07	-0.6975	0.4863	-0.07
Wisconsin	2.16	2.38	0.22	0.09	2.4375	0.0157	0.09
Wyoming	0.40	0.42	0.02	0.05	0.3938	0.6941	0.05

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-7. Effect of weighting adjustment on teacher bias estimates, before weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	95.34	95.45	0.11	0.08	1.3792	0.1694	0.00
Charter	4.66	4.55	-0.11	0.08	-1.3792	0.1694	-0.02
School enrollment							
Less than 200	5.40	5.78	0.38	0.13	2.9095	0.0040	0.07
200 to less than 500	27.54	28.58	1.04	0.27	3.8617	0.0002	0.04
500 to less than 750	28.10	28.85	0.75	0.26	2.8553	0.0048	0.03
750 to less than 1000	14.78	14.53	-0.25	0.21	-1.1538	0.2500	-0.02
1000 or more	24.18	22.26	-1.92	0.31	-6.2250	0.0000	-0.09
Percent non-White							
Less than 5 percent	5.39	6.36	0.96	0.10	9.3648	0.0000	0.15
5 to less than 10 percent	8.49	9.39	0.90	0.17	5.3843	0.0000	0.10
10 to less than 20 percent	13.31	14.08	0.77	0.19	4.0601	0.0001	0.05
20 to less than 30 percent	11.15	11.75	0.60	0.22	2.8082	0.0055	0.05
30 to less than 50 percent	18.20	18.21	0.01	0.27	0.0296	0.9764	0.00
50 percent or more	43.45	40.20	-3.24	0.31	-10.3132	0.0000	-0.08
Percent free lunch eligible							
Less than 35 percent	32.03	32.49	0.46	0.31	1.4918	0.1373	0.01
35 to less than 50 percent	17.09	17.40	0.31	0.23	1.3473	0.1794	0.02
50 to less than 75 percent	27.43	28.18	0.75	0.31	2.3932	0.0176	0.03
75 percent or more	23.46	21.93	-1.52	0.26	-5.8187	0.0000	-0.07
Locale							
City	29.59	26.88	-2.71	0.29	-9.5102	0.0000	-0.10
Suburb	38.65	37.90	-0.75	0.31	-2.4141	0.0167	-0.02
Town	11.64	12.96	1.32	0.16	8.2654	0.0000	0.10
Rural	20.11	22.26	2.14	0.21	10.0011	0.0000	0.10

See notes at end of table.

Table G-7. Effect of weighting adjustment on teacher bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Pupil-teacher ratio							
Less than 10	4.00	3.99	-0.01	0.13	-0.0925	0.9264	0.00
10 to less than 15	35.23	35.06	-0.17	0.30	-0.5701	0.5693	0.00
15 to less than 20	42.60	43.70	1.10	0.32	3.4549	0.0007	0.03
20 or more	18.18	17.26	-0.92	0.23	-4.0474	0.0001	-0.05
Grade level							
Primary	47.47	48.90	1.43	0.31	4.6573	0.0000	0.03
Middle	17.79	17.65	-0.13	0.22	-0.6176	0.5375	-0.01
High School	29.35	27.81	-1.54	0.31	-4.9671	0.0000	-0.06
Combined	5.39	5.64	0.25	0.10	2.6347	0.0091	0.04
Region							
Northeast	19.08	17.73	-1.35	0.24	-5.6063	0.0000	-0.08
Midwest	21.43	23.79	2.36	0.23	10.0602	0.0000	0.10
South	39.34	39.19	-0.14	0.29	-0.4865	0.6271	0.00
West	20.15	19.29	-0.87	0.24	-3.6725	0.0003	-0.04
Number of teachers							
Less than 10	2.55	2.55	0.00	0.11	0.0085	0.9932	0.00
10 to less than 25	18.49	19.55	1.06	0.20	5.1994	0.0000	0.05
25 to less than 50	44.06	45.39	1.33	0.33	4.0640	0.0001	0.03
50 to less than 75	17.66	16.85	-0.81	0.24	-3.3066	0.0011	-0.05
75 or more	17.24	15.66	-1.58	0.29	-5.4027	0.0000	-0.10
Title I status							
Title I program	53.70	52.96	-0.75	0.33	-2.2929	0.0229	-0.01
Title I noneligible	29.20	29.51	0.31	0.30	1.0459	0.2969	0.01
Title I eligible but no Title I program	17.10	17.53	0.43	0.24	1.8079	0.0721	0.02

See notes at end of table.

Table G-7. Effect of weighting adjustment on teacher bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Teacher Status							
Full-time	64.20	74.63	10.42	0.33	31.1605	0.0000	0.14
Part-time	4.56	5.23	0.67	0.08	8.0662	0.0000	0.13
Not reported	31.23	20.14	-11.09	0.35	-31.8438	0.0000	-0.55
Subject Taught							
Special education	11.16	12.17	1.01	0.10	10.0665	0.0000	0.08
General elementary	30.81	32.15	1.34	0.21	6.2858	0.0000	0.04
Math	7.94	8.41	0.47	0.08	5.6192	0.0000	0.06
Science	6.20	6.29	0.09	0.08	1.1532	0.2502	0.01
English/language arts	11.10	10.38	-0.72	0.11	-6.8402	0.0000	-0.07
Social studies	5.27	5.39	0.13	0.08	1.6023	0.1107	0.02
Vocational/technical	2.89	3.21	0.32	0.05	6.0947	0.0000	0.10
Other	23.24	20.74	-2.50	0.16	-15.2791	0.0000	-0.12
Not reported	1.40	1.26	-0.14	0.06	-2.1519	0.0326	-0.11
State							
Alabama	1.76	1.92	0.16	0.06	2.5535	0.0114	0.08
Alaska	0.23	0.20	-0.04	0.02	-2.0622	0.0405	-0.20
Arizona	2.25	2.36	0.11	0.07	1.6913	0.0923	0.05
Arkansas	1.01	1.16	0.14	0.05	3.0158	0.0029	0.13
California	9.69	8.77	-0.92	0.18	-5.1038	0.0000	-0.11
Colorado	1.20	1.15	-0.06	0.06	-0.8559	0.3931	-0.05
Connecticut	1.50	1.42	-0.08	0.08	-1.1050	0.2705	-0.06
Delaware	0.38	0.31	-0.07	0.03	-2.0586	0.0408	-0.21
District of Columbia	0.15	0.09	-0.06	0.02	-3.1370	0.0020	-0.63
Florida	5.03	4.56	-0.47	0.13	-3.6591	0.0003	-0.10
Georgia	3.25	3.20	-0.05	0.12	-0.4259	0.6706	-0.02

See notes at end of table.

Table G-7. Effect of weighting adjustment on teacher bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Hawaii	0.42	0.52	0.10	0.03	3.5376	0.0005	0.19
Idaho	0.48	0.55	0.07	0.03	2.2489	0.0256	0.13
Illinois	4.27	4.47	0.19	0.13	1.4662	0.1442	0.04
Indiana	1.87	2.03	0.17	0.08	2.0319	0.0435	0.08
Iowa	1.20	1.35	0.15	0.05	2.9696	0.0033	0.11
Kansas	1.29	1.52	0.23	0.07	3.1431	0.0019	0.15
Kentucky	1.41	1.54	0.13	0.07	1.8342	0.0681	0.09
Louisiana	1.45	1.39	-0.06	0.06	-1.0340	0.3024	-0.05
Maine	0.46	0.49	0.03	0.04	0.6432	0.5208	0.06
Maryland	1.95	1.61	-0.34	0.12	-2.8411	0.0050	-0.21
Massachusetts	2.48	1.94	-0.54	0.12	-4.6096	0.0000	-0.28
Michigan	2.51	2.88	0.37	0.07	5.0309	0.0000	0.13
Minnesota	1.71	1.98	0.27	0.06	4.2194	0.0000	0.14
Mississippi	1.10	1.34	0.23	0.05	4.7334	0.0000	0.17
Missouri	1.92	2.07	0.15	0.07	2.2441	0.0259	0.07
Montana	0.31	0.35	0.04	0.02	2.0264	0.0441	0.10
Nebraska	0.61	0.75	0.13	0.04	3.0762	0.0024	0.18
Nevada	0.61	0.20	-0.40	0.03	-12.6612	0.0000	-2.01
New Hampshire	0.48	0.59	0.10	0.04	2.7206	0.0071	0.18
New Jersey	3.69	3.39	-0.29	0.13	-2.2929	0.0229	-0.09
New Mexico	0.80	0.88	0.09	0.04	2.0145	0.0453	0.10
New York	5.96	4.96	-1.00	0.15	-6.5623	0.0000	-0.20
North Carolina	3.11	3.43	0.32	0.09	3.5224	0.0005	0.09
North Dakota	0.33	0.39	0.06	0.02	2.6514	0.0087	0.15
Ohio	3.58	3.90	0.32	0.09	3.4257	0.0007	0.08

See notes at end of table.

Table G-7. Effect of weighting adjustment on teacher bias estimates, before weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Oklahoma	1.21	1.36	0.16	0.05	3.2142	0.0015	0.12
Oregon	1.06	1.04	-0.02	0.05	-0.2859	0.7752	-0.02
Pennsylvania	3.82	4.22	0.41	0.11	3.5967	0.0004	0.10
Rhode Island	0.39	0.39	0.00	0.03	-0.1193	0.9052	-0.01
South Carolina	1.44	1.59	0.15	0.08	1.9437	0.0533	0.10
South Dakota	0.31	0.35	0.04	0.02	2.0324	0.0434	0.11
Tennessee	2.00	2.07	0.07	0.08	0.8593	0.3912	0.03
Texas	10.47	9.61	-0.86	0.23	-3.7534	0.0002	-0.09
Utah	0.99	1.15	0.15	0.05	2.9869	0.0032	0.13
Vermont	0.30	0.33	0.03	0.02	1.5931	0.1127	0.09
Virginia	2.89	3.19	0.31	0.11	2.8140	0.0054	0.10
Washington	1.86	1.87	0.01	0.07	0.0714	0.9432	0.00
West Virginia	0.73	0.81	0.08	0.04	1.9909	0.0478	0.10
Wisconsin	1.83	2.10	0.28	0.06	4.6177	0.0000	0.13
Wyoming	0.25	0.26	0.01	0.02	0.4537	0.6506	0.03

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Table G-8. Effect of weighting adjustment on teacher bias estimates, after weighting adjustment: 2015–16 NTPS

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Charter status							
Noncharter	95.34	95.22	-0.12	0.11	-1.0753	0.2835	0.00
Charter	4.66	4.78	0.12	0.11	1.0753	0.2835	0.02
School enrollment							
Less than 200	5.40	5.52	0.13	0.18	0.7211	0.4717	0.02
200 to less than 500	27.54	27.80	0.26	0.43	0.6173	0.5378	0.01
500 to less than 750	28.10	28.17	0.07	0.43	0.1504	0.8806	0.00
750 to less than 1000	14.78	15.30	0.52	0.29	1.7631	0.0794	0.03
1000 or more	24.18	23.21	-0.98	0.56	-1.7401	0.0834	-0.04
Percent non-White							
Less than 5 percent	5.39	5.73	0.34	0.41	0.8236	0.4112	0.06
5 to less than 10 percent	8.49	8.53	0.04	0.37	0.1058	0.9158	0.00
10 to less than 20 percent	13.31	13.59	0.28	0.49	0.5659	0.5721	0.02
20 to less than 30 percent	11.15	11.38	0.24	0.50	0.4708	0.6383	0.02
30 to less than 50 percent	18.20	17.64	-0.57	0.64	-0.8815	0.3791	-0.03
50 percent or more	43.45	43.13	-0.32	0.78	-0.4150	0.6786	-0.01
Percent free lunch eligible							
Less than 35 percent	32.03	31.24	-0.78	0.59	-1.3306	0.1848	-0.03
35 to less than 50 percent	17.09	16.80	-0.29	0.33	-0.8708	0.3849	-0.02
50 to less than 75 percent	27.43	27.87	0.44	0.49	0.8982	0.3701	0.02
75 percent or more	23.46	24.08	0.63	0.55	1.1346	0.2579	0.03

See notes at end of table.

Table G-8. Effect of weighting adjustment on teacher bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Locale							
City	29.59	29.34	-0.25	0.53	-0.4680	0.6403	-0.01
Suburb	38.65	38.51	-0.14	0.59	0.2433	0.8080	0.00
Town	11.64	11.92	0.28	0.29	0.9797	0.3284	0.02
Rural	20.11	20.23	0.11	0.43	0.2587	0.7962	0.01
Pupil-teacher ratio							
Less than 10	4.00	4.14	0.14	0.18	0.7926	0.4289	0.03
10 to less than 15	35.23	35.44	0.21	0.39	0.5400	0.5898	0.01
15 to less than 20	42.60	42.98	0.38	0.39	0.9714	0.3325	0.01
20 or more	18.18	17.44	-0.73	0.36	-2.0585	0.0408	-0.04
Grade level							
Primary	47.47	48.00	0.53	0.73	0.7203	0.4722	0.01
Middle	17.79	18.13	0.34	0.51	0.6657	0.5063	0.02
High School	29.35	28.32	-1.03	0.73	-1.4037	0.1619	-0.04
Combined	5.39	5.55	0.16	0.20	0.7958	0.4271	0.03
Region:							
Northeast	19.08	19.34	0.26	0.54	0.4806	0.6314	0.01
Midwest	21.43	21.13	-0.29	0.42	-0.6956	0.4875	-0.01
South	39.34	39.62	0.28	0.61	0.4580	0.6475	0.01
West	20.15	19.91	-0.25	0.48	-0.5126	0.6088	-0.01
Number of teachers							
Less than 10	2.55	2.46	-0.09	0.13	-0.6838	0.4949	-0.03
10 to less than 25	18.49	18.78	0.30	0.33	0.8925	0.3732	0.02
25 to less than 50	44.06	44.33	0.26	0.50	0.5225	0.6019	0.01
50 to less than 75	17.66	18.02	0.36	0.42	0.8633	0.3890	0.02
75 or more	17.24	16.41	-0.83	0.52	-1.6104	0.1089	-0.05

See notes at end of table.

Table G-8. Effect of weighting adjustment on teacher bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Title I status							
Title I program	53.70	54.66	0.96	0.75	1.2804	0.2019	0.02
Title I noneligible	29.20	28.19	-1.01	0.74	-1.3697	0.1723	-0.04
Title I eligible but no Title I program	17.10	17.15	0.05	0.61	0.0815	0.9352	0.00
Teacher status							
Full-time	64.20	74.11	9.90	0.35	28.3834	0.0000	0.13
Part-time	4.56	5.01	0.45	0.09	4.8197	0.0000	0.09
Not reported	31.23	20.88	-10.35	0.37	-27.8894	0.0000	-0.50
Subject taught							
Special education	11.16	12.45	1.28	0.12	10.4879	0.0000	0.10
General elementary	30.81	31.50	0.69	0.45	1.5427	0.1245	0.02
Math	7.94	8.09	0.15	0.10	1.4276	0.1550	0.02
Science	6.20	6.15	-0.04	0.11	-0.4167	0.6773	-0.01
English/language arts	11.10	10.89	-0.22	0.12	-1.7595	0.0800	-0.02
Social studies	5.27	5.23	-0.03	0.09	-0.3336	0.7390	-0.01
Vocational/technical	2.89	3.24	0.36	0.08	4.2719	0.0000	0.11
Other	23.24	21.11	-2.14	0.18	-12.1663	0.0000	-0.10
Not reported	1.40	1.34	-0.06	0.07	-0.7763	0.4385	-0.04
State							
Alabama	1.76	1.91	0.14	0.11	1.2713	0.2051	0.07
Alaska	0.23	0.19	-0.05	0.03	-1.9435	0.0534	-0.26
Arizona	2.25	2.68	0.43	0.15	2.8988	0.0042	0.16
Arkansas	1.01	1.12	0.11	0.05	2.3432	0.0201	0.10
California	9.69	9.11	-0.58	0.33	-1.7649	0.0791	-0.06
Colorado	1.20	1.13	-0.07	0.08	-0.8960	0.3713	-0.06

See notes at end of table.

Table G-8. Effect of weighting adjustment on teacher bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
Connecticut	1.50	1.60	0.10	0.11	0.8436	0.3999	0.06
Delaware	0.38	0.33	-0.05	0.04	-1.2819	0.2014	-0.14
District of Columbia	0.15	0.12	-0.02	0.03	-0.8451	0.3991	-0.19
Florida	5.03	5.02	0.00	0.23	-0.0086	0.9932	0.00
Georgia	3.25	3.27	0.02	0.15	0.1235	0.9018	0.01
Hawaii	0.42	0.49	0.06	0.04	1.5519	0.1223	0.13
Idaho	0.48	0.55	0.07	0.04	1.8622	0.0640	0.13
Illinois	4.27	4.03	-0.24	0.15	-1.6631	0.0979	-0.06
Indiana	1.87	1.80	-0.07	0.08	-0.7959	0.4271	-0.04
Iowa	1.20	1.19	-0.01	0.06	-0.1133	0.9099	-0.01
Kansas	1.29	1.39	0.10	0.09	1.1086	0.2689	0.08
Kentucky	1.41	1.46	0.05	0.07	0.6308	0.5289	0.03
Louisiana	1.45	1.41	-0.05	0.08	-0.5850	0.5592	-0.03
Maine	0.46	0.47	0.01	0.04	0.1262	0.8997	0.01
Maryland	1.95	1.63	-0.32	0.13	-2.4565	0.0149	-0.19
Massachusetts	2.48	2.20	-0.28	0.15	-1.8391	0.0674	-0.13
Michigan	2.51	2.49	-0.02	0.09	-0.2267	0.8209	-0.01
Minnesota	1.71	1.75	0.04	0.08	0.5356	0.5929	0.02
Mississippi	1.10	1.36	0.26	0.09	3.0129	0.0029	0.19
Missouri	1.92	1.86	-0.06	0.09	-0.5923	0.5543	-0.03
Montana	0.31	0.34	0.02	0.03	0.8638	0.3887	0.07
Nebraska	0.61	0.67	0.06	0.05	1.1411	0.2552	0.08
Nevada	0.61	0.20	-0.40	0.03	-12.0031	0.0000	-2.01
New Hampshire	0.48	0.61	0.13	0.05	2.7029	0.0075	0.21
New Jersey	3.69	3.77	0.08	0.20	0.3979	0.6912	0.02
New Mexico	0.80	0.90	0.10	0.08	1.2331	0.2190	0.11

See notes at end of table.

Table G-8. Effect of weighting adjustment on teacher bias estimates, after weighting adjustment: 2015–16 NTPS—Continued

Characteristic	Weighted eligible sample proportion	Weighted respondent proportion	Estimated bias	Standard error of bias	<i>t</i> statistic	<i>p</i> value	Relative bias
New York	5.96	5.46	-0.50	0.24	-2.0923	0.0377	-0.09
North Carolina	3.11	3.50	0.40	0.14	2.8312	0.0051	0.11
North Dakota	0.33	0.33	0.00	0.02	0.1541	0.8777	0.01
Ohio	3.58	3.44	-0.14	0.14	-1.0024	0.3174	-0.04
Oklahoma	1.21	1.38	0.18	0.08	2.2362	0.0264	0.13
Oregon	1.06	1.02	-0.03	0.08	-0.4493	0.6537	-0.03
Pennsylvania	3.82	4.50	0.68	0.19	3.6693	0.0003	0.15
Rhode Island	0.39	0.42	0.03	0.04	0.6946	0.4881	0.07
South Carolina	1.44	1.69	0.26	0.10	2.5439	0.0117	0.15
South Dakota	0.31	0.31	-0.01	0.02	-0.2510	0.8021	-0.02
Tennessee	2.00	2.10	0.10	0.11	0.9222	0.3576	0.05
Texas	10.47	9.54	-0.93	0.34	-2.7729	0.0061	-0.10
Utah	0.99	1.14	0.15	0.08	1.8417	0.0670	0.13
Vermont	0.30	0.32	0.02	0.02	0.6550	0.5132	0.05
Virginia	2.89	3.00	0.12	0.16	0.7109	0.4780	0.04
Washington	1.86	1.93	0.06	0.12	0.5416	0.5887	0.03
West Virginia	0.73	0.75	0.02	0.05	0.4697	0.6391	0.03
Wisconsin	1.83	1.86	0.03	0.08	0.4457	0.6563	0.02
Wyoming	0.25	0.24	-0.01	0.02	-0.3582	0.7206	-0.03

NOTE: Highlighted “*p* value” cells signify that the characteristic represented in that row of the table had a statistically significant difference between the weighted respondent proportion and the weighted eligible sample proportion at a significance level of 0.05. This means that the characteristic had bias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School, Public School Principal, and Public School Teacher Data Files,” 2015–16.

Appendix H. Changes Made to Variables During the Computer Edit, by Data File

The tables in this appendix show the number of edit changes made to responses for each of the variables within each data file during the computer edit stage. (See chapter 7 for more details about the computer edits.) The tables are as follows:

Table	Page
H-1. Number of changes and percentage of records affected during the computer edit of the public school principals, including public charter school principals, data file: 2015–16	H-2
H-2. Number of changes and percentage of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16	H-6
H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16	H-12

Table H-1. Number of changes and percentage of records affected during the computer edit of the public school principals, including public charter school principals, data file: 2015–16

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P0100	1-1	19	0.33	17	0.30	0	0.00	2	0.04	5,711
P0101	1-2	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0102	1-3	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0103	1-4	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0104	1-5	348	6.09	343	6.01	5	0.09	0	0.00	5,711
P0105	1-6	2	0.04	2	0.04	0	0.00	0	0.00	5,711
P0106	1-7	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0107	1-8	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0108	1-9	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0109	1-10	199	3.48	199	3.48	0	0.00	0	0.00	5,711
P0110	1-11	192	3.36	192	3.36	0	0.00	0	0.00	5,711
P0111	1-12	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0200	2-1, most important	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0201	2-1, second most important	2	0.04	2	0.04	0	0.00	0	0.00	5,711
P0202	2-1, third most important	4	0.07	4	0.07	0	0.00	0	0.00	5,711
P0203	2-2a	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0204	2-2b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0205	2-2c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0206	2-2d	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0207	2-2e	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0208	2-2f	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0209	2-2g	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0300	3-1a	15	0.26	0	0.00	15	0.26	0	0.00	5,711
P0301	3-1b	11	0.19	0	0.00	11	0.19	0	0.00	5,711
P0302	3-1c	22	0.39	0	0.00	22	0.39	0	0.00	5,711

See notes at end of table.

Table H-1. Number of changes and percentage of records affected during the computer edit of the public school principals, including public charter school principals, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P0303	3-1d	6	0.11	0	0.00	6	0.11	0	0.00	5,711
P0304	3-1e	11	0.19	0	0.00	11	0.19	0	0.00	5,711
P0305	3-1f	14	0.25	0	0.00	14	0.25	0	0.00	5,711
P0306	3-1g	10	0.18	0	0.00	10	0.18	0	0.00	5,711
P0307	3-1h	15	0.26	0	0.00	15	0.26	0	0.00	5,711
P0308	3-1i	10	0.18	0	0.00	10	0.18	0	0.00	5,711
P0309	3-1j	11	0.19	0	0.00	11	0.19	0	0.00	5,711
P0310	3-1k	13	0.23	0	0.00	13	0.23	0	0.00	5,711
P0311	3-1l	7	0.12	0	0.00	7	0.12	0	0.00	5,711
P0312	3-1m	6	0.11	0	0.00	6	0.11	0	0.00	5,711
P0313	3-2a	9	0.16	0	0.00	9	0.16	0	0.00	5,711
P0314	3-2b	14	0.25	0	0.00	14	0.25	0	0.00	5,711
P0315	3-2c	61	1.07	0	0.00	61	1.07	0	0.00	5,711
P0316	3-2d	96	1.68	0	0.00	96	1.68	0	0.00	5,711
P0317	3-2e	27	0.47	0	0.00	27	0.47	0	0.00	5,711
P0318	3-2f	7	0.12	0	0.00	7	0.12	0	0.00	5,711
P0319	3-2g	16	0.28	0	0.00	16	0.28	0	0.00	5,711
P0320	3-2h	20	0.35	0	0.00	20	0.35	0	0.00	5,711
P0321	3-2i	36	0.63	0	0.00	36	0.63	0	0.00	5,711
P0322	3-3a	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0323	3-3b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0324	3-4	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1400	4-1	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1401	4-2a	146	2.56	2	0.04	144	2.52	0	0.00	5,711
P1402	4-2b	147	2.57	3	0.05	144	2.52	0	0.00	5,711
P1403	4-2c	150	2.63	6	0.11	144	2.52	0	0.00	5,711
P1404	4-2d	167	2.92	23	0.40	143	2.50	1	0.02	5,711

See notes at end of table.

Table H-1. Number of changes and percentage of records affected during the computer edit of the public school principals, including public charter school principals, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P1405	4-2e	4,097	71.74	3,882	67.97	137	2.40	78	1.37	5,711
P5405	4-2e, other	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1406	4-3	0	2.91	166	2.91	0	0.00	0	0.00	5,711
P1407	4-4	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1408	4-5a	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1409	4-5b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1410	4-5c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1411	4-5d	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1412	4-5e	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1413	4-5f	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1414	4-6	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1500	5-1	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1501	5-2a	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1502	5-2b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1503	5-2c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1504	5-2d	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1505	5-2e	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1506	5-2f	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1507	5-2g	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1508	5-2h	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1509	5-3a	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1510	5-3b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1511	5-3c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1512	5-3d	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1513	5-3e	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1514	5-4a	0	0.00	0	0.00	0	0.00	0	0.00	5,711

See notes at end of table.

Table H-1. Number of changes and percentage of records affected during the computer edit of the public school principals, including public charter school principals, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	of records affected	Number of changes	of records affected	Number of changes	of records affected	
P1515	5-4b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1516	5-4c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1517	5-4d	269	4.71	269	4.71	0	0.00	0	0.00	5,711
P1518	5-4e	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1519	5-5a	222	3.89	222	3.89	0	0.00	0	0.00	5,711
P1520	5-5b	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1521	5-5c	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0900	6-1	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0901	6-2	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0902	6-3, White	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0903	6-3, Black	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0904	6-3, Asian	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0905	6-3, Pac Islander	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0906	6-3, American Indian	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0907	6-4	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P0908	6-5	0	0.00	0	0.00	0	0.00	0	0.00	5,711

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public Principal Documentation Data File," 2015–16.

Table H-2. Number of changes and percentage of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
S0100	1-1, PK	2,757	47.82	0	0.00	2,757	47.82	0	0.00	5,765	
S0101	1-1, KG	744	12.91	26	0.45	716	12.42	2	0.03	5,765	
S0102	1-1, 1st	725	12.58	0	0.00	725	12.58	0	0.00	5,765	
S0103	1-1, 2nd	728	12.63	0	0.00	728	12.63	0	0.00	5,765	
S0104	1-1, 3rd	727	12.61	0	0.00	727	12.61	0	0.00	5,765	
S0105	1-1, 4th	735	12.75	0	0.00	735	12.75	0	0.00	5,765	
S0106	1-1, 5th	752	13.04	0	0.00	752	13.04	0	0.00	5,765	
S0107	1-1, 6th	959	16.63	0	0.00	959	16.63	0	0.00	5,765	
S0108	1-1, 7th	1,048	18.18	0	0.00	1,048	18.18	0	0.00	5,765	
S0109	1-1, 8th	1,057	18.33	0	0.00	1,057	18.33	0	0.00	5,765	
S0110	1-1, 9th	1,076	18.66	0	0.00	1,076	18.66	0	0.00	5,765	
S0111	1-1, 10th	1,072	18.59	0	0.00	1,072	18.59	0	0.00	5,765	
S0112	1-1, 11th	1,072	18.59	0	0.00	1,072	18.59	0	0.00	5,765	
S0113	1-1, 12th	1,077	18.68	0	0.00	1,077	18.68	0	0.00	5,765	
S0114	1-1, ungraded	2,067	35.85	0	0.00	2,067	35.85	0	0.00	5,765	
S0115	1-2	173	3.00	0	0.00	165	2.86	8	0.14	5,765	
S0116	1-3	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0117	1-4, start	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0118	1-4, end	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0119	1-5	120	2.08	120	2.08	0	0.00	0	0.00	5,765	
S0120	1-6	18	0.31	0	0.00	18	0.31	0	0.00	5,765	
S5120	1-6, write-in	32	0.56	28	0.49	4	0.07	0	0.00	5,765	
S0121	1-7a	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0122	1-7b	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0123	1-7c	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0124	1-8	112	1.94	112	1.94	0	0.00	0	0.00	5,765	
S0125	1-9a	0	0.00	0	0.00	0	0.00	0	0.00	5,765	

See notes at end of table.

Table H-2. Number of changes and percentage of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0126	1-9b	2,757	47.82	0	0.00	2,757	47.82	0	0.00	5,765
S0127	1-10a	11	0.19	0	0.00	11	0.19	0	0.00	5,765
S0128	1-10b	47	0.82	0	0.00	47	0.82	0	0.00	5,765
S0129	1-10c	46	0.80	14	0.24	32	0.56	0	0.00	5,765
S0130	1-11	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0200	2-1a	55	0.95	0	0.00	54	0.94	1	0.02	5,765
S0201	2-1b	345	5.98	322	5.59	23	0.40	0	0.00	5,765
S0202	2-1c	252	4.37	18	0.31	234	4.06	0	0.00	5,765
S0203	2-2a	308	5.34	80	1.39	224	3.89	4	0.07	5,765
S0204	2-2b	900	15.61	32	0.56	862	14.95	6	0.10	5,765
S0205	2-2c	355	6.16	125	2.17	226	3.92	4	0.07	5,765
S0206	2-2d	272	4.72	182	3.16	86	1.49	4	0.07	5,765
S0207	2-2e	320	5.55	254	4.41	62	1.08	4	0.07	5,765
S0208	2-2f	345	5.98	271	4.70	70	1.21	4	0.07	5,765
S0209	2-2g	387	6.71	284	4.93	99	1.72	4	0.07	5,765
S0210	2-3a_FT	47	0.82	5	0.09	30	0.52	12	0.21	5,765
S0211	2-3a_PT	1,948	33.79	1,336	23.17	612	10.62	0	0.00	5,765
S0212	2-3b_FT	74	1.28	44	0.76	30	0.52	0	0.00	5,765
S0213	2-3b_PT	1,603	27.81	1,117	19.38	486	8.43	0	0.00	5,765
S0214	2-3c_FT	313	5.43	99	1.72	200	3.47	14	0.24	5,765
S0215	2-3c_PT	1,386	24.04	1,055	18.30	324	5.62	7	0.12	5,765
S0216	2-3d_FT	290	5.03	81	1.41	207	3.59	2	0.03	5,765
S0217	2-3d_PT	1,640	28.45	1,164	20.19	472	8.19	4	0.07	5,765
S0218	2-3e_FT	247	4.28	61	1.06	185	3.21	1	0.02	5,765
S0219	2-3e_PT	1,618	28.07	1,076	18.66	541	9.38	1	0.02	5,765
S0220	2-3f_1_FT	491	8.52	491	8.52	0	0.00	0	0.00	5,765
S0221	2-3f_1_PT	1,398	24.25	1,398	24.25	0	0.00	0	0.00	5,765
S0222	2-3f_2_FT	555	9.63	555	9.63	0	0.00	0	0.00	5,765

See notes at end of table.

Table H-2. Number of changes and percentage of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0223	2-3f_2_PT	1,084	18.80	1,084	18.80	0	0.00	0	0.00	5,765
S0224	2-3f_3_FT	782	13.56	782	13.56	0	0.00	0	0.00	5,765
S0225	2-3f_3_PT	962	16.69	962	16.69	0	0.00	0	0.00	5,765
S0226	2-3f_4_FT	750	13.01	750	13.01	0	0.00	0	0.00	5,765
S0227	2-3f_4_PT	1,117	19.38	1,117	19.38	0	0.00	0	0.00	5,765
S0228	2-3f_5_FT	1,025	17.78	1,025	17.78	0	0.00	0	0.00	5,765
S0229	2-3f_5_PT	1,387	24.06	1,387	24.06	0	0.00	0	0.00	5,765
S0230	2-3g_1_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0231	2-3g_1_PT	1,357	23.54	1,357	23.54	0	0.00	0	0.00	5,765
S0232	2-3g_2_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0233	2-3g_2_PT	1,129	19.58	1,129	19.58	0	0.00	0	0.00	5,765
S0234	2-3g_3_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0235	2-3g_3_PT	1,474	25.57	1,474	25.57	0	0.00	0	0.00	5,765
S0236	2-3g_4_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0237	2-3g_4_PT	1,048	18.18	1,048	18.18	0	0.00	0	0.00	5,765
S0238	2-3g_5_FT	16	0.28	16	0.28	0	0.00	0	0.00	5,765
S0239	2-3g_5_PT	1,125	19.51	1,125	19.51	0	0.00	0	0.00	5,765
S0240	2-3g_6_FT	16	0.28	16	0.28	0	0.00	0	0.00	5,765
S0241	2-3g_6_PT	977	16.95	977	16.95	0	0.00	0	0.00	5,765
S0242	2-3g_7_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0243	2-3g_7_PT	1,122	19.46	1,122	19.46	0	0.00	0	0.00	5,765
S0244	2-3g_8_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0245	2-3g_8_PT	976	16.93	976	16.93	0	0.00	0	0.00	5,765
S0246	2-3h_FT	13	0.23	0	0.00	13	0.23	0	0.00	5,765
S0247	2-3h_PT	1,659	28.78	1,659	28.78	0	0.00	0	0.00	5,765
S0248	2-3i_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0249	2-3i_PT	1,485	25.76	1,485	25.76	0	0.00	0	0.00	5,765

See notes at end of table.

Table H-2. Number of changes and percentage of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
S0250	2-3j_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0251	2-3j_PT	1,619	28.08	1,619	28.08	0	0.00	0	0.00	5,765	
S0252	2-3k_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0253	2-3k_PT	1,006	17.45	1,006	17.45	0	0.00	0	0.00	5,765	
S0254	2-3l_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0255	2-3l_PT	1,154	20.02	1,154	20.02	0	0.00	0	0.00	5,765	
S0256	2-3m_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0257	2-3m_PT	999	17.33	999	17.33	0	0.00	0	0.00	5,765	
S0258	2-3n_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0259	2-3n_PT	1,047	18.16	1,047	18.16	0	0.00	0	0.00	5,765	
S0260	2-3o_FT	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0261	2-3o_PT	836	14.50	836	14.50	0	0.00	0	0.00	5,765	
S0262	2-3p_FT	9	0.16	0	0.00	9	0.16	0	0.00	5,765	
S0263	2-3p_PT	1,107	19.20	1,107	19.20	0	0.00	0	0.00	5,765	
S0264	2-4a_1	7	0.12	0	0.00	7	0.12	0	0.00	5,765	
S0265	2-4a_2	18	0.31	0	0.00	18	0.31	0	0.00	5,765	
S0266	2-4a_3	31	0.54	0	0.00	31	0.54	0	0.00	5,765	
S0267	2-4b_1	21	0.36	0	0.00	21	0.36	0	0.00	5,765	
S0268	2-4b_2	31	0.54	0	0.00	31	0.54	0	0.00	5,765	
S0269	2-4b_3	39	0.68	0	0.00	39	0.68	0	0.00	5,765	
S0270	2-4b_4	20	0.35	0	0.00	20	0.35	0	0.00	5,765	
S0271	2-5a	693	12.02	693	12.02	0	0.00	0	0.00	5,765	
S0272	2-5b_1	217	3.76	200	3.47	17	0.29	0	0.00	5,765	
S0273	2-5b_2	251	4.35	0	0.00	251	4.35	0	0.00	5,765	
S0274	2-5b_3	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0275	2-5b_4	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0276	2-5b_5	0	0.00	0	0.00	0	0.00	0	0.00	5,765	
S0277	2-5b_6	0	0.00	0	0.00	0	0.00	0	0.00	5,765	

See notes at end of table.

Table H-2. Number of changes and age of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0278	2-5b_7	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0279	2-5b_8	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0280	2-5b_9	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0281	2-5b_10	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0282	2-5b_11	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0283	2-5b_12	193	3.35	170	2.95	23	0.40	0	0.00	5,765
S0284	2-5b_13	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0285	2-6a	6	0.10	6	0.10	0	0.00	0	0.00	5,765
S0286	2-6b	7	0.12	7	0.12	0	0.00	0	0.00	5,765
S0300	3-1	1,292	22.41	0	0.00	1,292	22.41	0	0.00	5,765
S0301	3-2	32	0.56	32	0.56	0	0.00	0	0.00	5,765
S0302	3-3	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0400	4-1a	28	0.49	28	0.49	0	0.00	0	0.00	5,765
S0401	4-1b	183	3.17	143	2.48	40	0.69	0	0.00	5,765
S0402	4-2a	397	6.89	238	4.13	153	2.65	6	0.10	5,765
S0403	4-2b_1	1,301	22.57	326	5.65	930	16.13	45	0.78	5,765
S0404	4-2b_2	1,350	23.42	388	6.73	930	16.13	32	0.56	5,765
S0405	4-2b_3	1,219	21.14	492	8.53	699	12.12	28	0.49	5,765
S0406	4-2b_4	1,133	19.65	445	7.72	659	11.43	29	0.50	5,765
S0407	4-3a	127	2.20	51	0.88	17	0.29	59	1.02	5,765
S0408	4-3b	8	0.14	8	0.14	0	0.00	0	0.00	5,765
S0409	4-4a	123	2.13	45	0.78	78	1.35	0	0.00	5,765
S0410	4-4b, K-12	359	6.23	359	6.23	0	0.00	0	0.00	5,765
S0411	4-4b, PK	2,067	35.85	2,036	35.32	31	0.54	0	0.00	5,765
S0412	4-5	458	7.94	386	6.70	72	1.25	0	0.00	5,765
S0414	4-6, K-12	296	5.13	290	5.03	6	0.10	0	0.00	5,765
S0416	4-6, PK	1,498	25.98	1,406	24.39	84	1.46	8	0.14	5,765

See notes at end of table.

Table H-2. Number of changes and age of records affected during the computer edit of the public schools, including public charter schools, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0417	4-7a	12	0.21	0	0.00	12	0.21	0	0.00	5,765
S0418	4-7b	32	0.56	0	0.00	32	0.56	0	0.00	5,765
S0419	4-7c	66	1.14	0	0.00	66	1.14	0	0.00	5,765
S0420	4-8	33	0.57	33	0.57	0	0.00	0	0.00	5,765
S0500	5-1	330	5.72	163	2.83	167	2.90	0	0.00	5,765
S0501	5-2	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S5501	5-2, other	0	0.00	0	0.00	0	0.00	0	0.00	5,765

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Documentation Data File,” 2015–16.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
T0100	1-1	194	0.61	194	0.61	0	0.00	0	0.00	31,945
T0101	1-2	1,643	5.14	1,643	5.14	0	0.00	0	0.00	31,945
T0102	1-3	1	0.00	1	0.00	0	0.00	0	0.00	31,945
T0103	1-4	649	2.03	387	1.21	3	0.01	259	0.81	31,945
T0104	1-5, month	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0105	1-5, year	227	0.71	227	0.71	0	0.00	0	0.00	31,945
T0106	1-6	182	0.57	182	0.57	0	0.00	0	0.00	31,945
T5106	1-6, specify	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0107	1-7, month	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0108	1-7, year	91	0.28	26	0.08	61	0.19	4	0.01	31,945
T0109	1-8	99	0.31	0	0.00	99	0.31	0	0.00	31,945
T0110	1-9	2,367	7.41	2,367	7.41	0	0.00	0	0.00	31,945
T0200	2-1, PK	11,893	37.23	4	0.01	11,889	37.22	0	0.00	31,945
T0201	2-1, KG	10,140	31.74	10	0.03	10,130	31.71	0	0.00	31,945
T0202	2-1, 1st	10,011	31.34	29	0.09	9,982	31.25	0	0.00	31,945
T0203	2-1, 2nd	10,072	31.53	34	0.11	10,032	31.40	6	0.02	31,945
T0204	2-1, 3rd	10,107	31.64	31	0.10	10,067	31.51	9	0.03	31,945
T0205	2-1, 4th	10,205	31.95	32	0.10	10,163	31.81	10	0.03	31,945
T0206	2-1, 5th	10,238	32.05	43	0.13	10,190	31.90	5	0.02	31,945
T0207	2-1, 6th	10,153	31.78	81	0.25	10,050	31.46	22	0.07	31,945
T0208	2-1, 7th	9,952	31.15	66	0.21	9,855	30.85	31	0.10	31,945
T0209	2-1, 8th	9,890	30.96	78	0.24	9,796	30.67	16	0.05	31,945
T0210	2-1, 9th	8,980	28.11	155	0.49	8,744	27.37	81	0.25	31,945
T0211	2-1, 10th	8,608	26.95	128	0.40	8,394	26.28	86	0.27	31,945
T0212	2-1, 11th	8,485	26.56	69	0.22	8,386	26.25	30	0.09	31,945
T0213	2-1, 12th	8,667	27.13	62	0.19	8,570	26.83	35	0.11	31,945
T0214	2-1, UG	14,793	46.31	656	2.05	14,137	44.25	0	0.00	31,945

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T0215	2-2	6	0.02	0	0.00	6	0.02	0	0.00	31,945	
T0216	2-3	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0217	2-4, code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5217	2-4, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0218	2-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0219	2-6a	92	0.29	92	0.29	0	0.00	0	0.00	31,945	
T0220	2-6b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0221	2-7	60	0.19	0	0.00	60	0.19	0	0.00	31,945	
T0222	2-8	24,642	77.14	24,585	76.96	57	0.18	0	0.00	31,945	
T0223	2-9	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0224	2-10	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0225	2-11a	367	1.15	66	0.21	272	0.85	29	0.09	31,945	
T0226	2-11a(1)	106	0.33	10	0.03	96	0.30	0	0.00	31,945	
T0227	2-11b	253	0.79	211	0.66	42	0.13	0	0.00	31,945	
T0228	2-11c	318	1.00	251	0.79	67	0.21	0	0.00	31,945	
T0229	2-11d	343	1.07	272	0.85	71	0.22	0	0.00	31,945	
T0230	2-12	2,534	7.93	2,523	7.90	0	0.00	11	0.03	31,945	
T0240	2-13a(1)	340	1.06	4	0.01	335	1.05	1	0.00	31,945	
T5240	2-13b(1)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0250	2-13c(1)	954	2.99	5	0.02	948	2.97	1	0.00	31,945	
T0260	2-13d(1)	17	0.05	5	0.02	11	0.03	1	0.00	31,945	
T0241	2-13a(2)	346	1.08	4	0.01	340	1.06	2	0.01	31,945	
T5241	2-13b(2)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0251	2-13c(2)	1,069	3.35	7	0.02	1,061	3.32	1	0.00	31,945	
T0261	2-13d(2)	18	0.06	6	0.02	10	0.03	2	0.01	31,945	
T0242	2-13a(3)	337	1.05	4	0.01	331	1.04	2	0.01	31,945	
T5242	2-13b(3)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T0252	2-13c(3)	1,107	3.47	6	0.02	1,101	3.45	0	0.00	31,945	
T0262	2-13d(3)	13	0.04	4	0.01	7	0.02	2	0.01	31,945	
T0243	2-13a(4)	319	1.00	3	0.01	313	0.98	3	0.01	31,945	
T5243	2-13b(4)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0253	2-13c(4)	1,004	3.14	7	0.02	997	3.12	0	0.00	31,945	
T0263	2-13d(4)	13	0.04	4	0.01	6	0.02	3	0.01	31,945	
T0244	2-13a(5)	307	0.96	1	0.00	304	0.95	2	0.01	31,945	
T5244	2-13b(5)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0254	2-13c(5)	899	2.81	3	0.01	896	2.80	0	0.00	31,945	
T0264	2-13d(5)	9	0.03	1	0.00	6	0.02	2	0.01	31,945	
T0245	2-13a(6)	278	0.87	2	0.01	272	0.85	4	0.01	31,945	
T5245	2-13b(6)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0255	2-13c(6)	611	1.91	6	0.02	605	1.89	0	0.00	31,945	
T0265	2-13d(6)	9	0.03	4	0.01	1	0.00	4	0.01	31,945	
T0246	2-13a(7)	249	0.78	2	0.01	244	0.76	3	0.01	31,945	
T5246	2-13b(7)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0256	2-13c(7)	342	1.07	6	0.02	336	1.05	0	0.00	31,945	
T0266	2-13d(7)	7	0.02	3	0.01	1	0.00	3	0.01	31,945	
T0247	2-13a(8)	236	0.74	2	0.01	233	0.73	1	0.00	31,945	
T5247	2-13b(8)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0257	2-13c(8)	270	0.85	4	0.01	266	0.83	0	0.00	31,945	
T0267	2-13d(8)	6	0.02	3	0.01	2	0.01	1	0.00	31,945	
T0248	2-13a(9)	223	0.70	0	0.00	223	0.70	0	0.00	31,945	
T5248	2-13b(9)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0258	2-13c(9)	240	0.75	0	0.00	240	0.75	0	0.00	31,945	
T0268	2-13d(9)	1	0.00	1	0.00	0	0.00	0	0.00	31,945	
T0249	2-13a(10)	224	0.70	0	0.00	224	0.70	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Table 1. Number of consistency and logic edits by variable									
Variable	Item number	Total number of edit changes	Consistency edits		Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	
T5249	2-13b(10)	0	0.00	0	0.00	0	0.00	0	31,945
T0259	2-13c(10)	241	0.75	0	0.00	241	0.75	0	31,945
T0269	2-13d(10)	1	0.00	1	0.00	0	0.00	0	31,945
T0300	3-1a	99	0.31	83	0.26	16	0.05	0	31,945
T5301	3-1b, name	7	0.02	7	0.02	0	0.00	0	31,945
T5302	3-1b, city	7	0.02	7	0.02	0	0.00	0	31,945
T5303	3-1b, state	7	0.02	7	0.02	0	0.00	0	31,945
T0304	3-1b, outside U.S.	0	0.00	0	0.00	0	0.00	0	31,945
T0305	3-1c	46	0.14	46	0.14	0	0.00	0	31,945
T0306	3-1d	72	0.23	72	0.23	0	0.00	0	31,945
T0307	3-1e, code	23	0.07	23	0.07	0	0.00	0	31,945
T5307	3-1e, label	0	0.00	0	0.00	0	0.00	0	31,945
T0308	3-1f	1,099	3.44	334	1.05	764	2.39	1	31,945
T0309	3-1g, code	0	0.00	0	0.00	0	0.00	0	31,945
T5309	3-1g, label	0	0.00	0	0.00	0	0.00	0	31,945
T0310	3-1h	57	0.18	57	0.18	0	0.00	0	31,945
T0311	3-1i, code	3	0.01	3	0.01	0	0.00	0	31,945
T5311	3-1i, label	0	0.00	0	0.00	0	0.00	0	31,945
T0312	3-2a	554	1.73	404	1.26	149	0.47	1	31,945
T0313	3-2b	1	0.00	1	0.00	0	0.00	0	31,945
T0314	3-2c	100	0.31	100	0.31	0	0.00	0	31,945
T0315	3-2d	127	0.40	127	0.40	0	0.00	0	31,945
T0316	3-2e, code	95	0.30	95	0.30	0	0.00	0	31,945
T5316	3-2e, label	0	0.00	0	0.00	0	0.00	0	31,945
T0317	3-3a	2,574	8.06	941	2.95	1,633	5.11	0	31,945
T0318	3-3b(1), code	0	0.00	0	0.00	0	0.00	0	31,945
T5318	3-3b(1), label	0	0.00	0	0.00	0	0.00	0	31,945

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T0319	3-3d(1)	9	0.03	9	0.03	0	0.00	0	0.00	31,945	
T0320	3-3b(2), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5320	3-3b(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0321	3-3d(2)	24	0.08	24	0.08	0	0.00	0	0.00	31,945	
T0322	3-3b(3), code	262	0.82	262	0.82	0	0.00	0	0.00	31,945	
T5322	3-3b(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0323	3-3c(3)	238	0.75	238	0.75	0	0.00	0	0.00	31,945	
T0324	3-3d(3)	271	0.85	271	0.85	0	0.00	0	0.00	31,945	
T0325	3-3b(4), code	123	0.39	123	0.39	0	0.00	0	0.00	31,945	
T5325	3-3b(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0326	3-3c(4)	108	0.34	108	0.34	0	0.00	0	0.00	31,945	
T0327	3-3d(4)	119	0.37	119	0.37	0	0.00	0	0.00	31,945	
T0328	3-3b(5), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5328	3-3b(5), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0329	3-3c(5)	1	0.00	1	0.00	0	0.00	0	0.00	31,945	
T0330	3-3d(5)	4	0.01	4	0.01	0	0.00	0	0.00	31,945	
T0331	3-3b(6), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5331	3-3b(6), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0332	3-3c(6)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0333	3-3d(6)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0334	3-3b(7), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5334	3-3b(7), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0335	3-3c(7)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0336	3-3d(7)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0337	3-4	4,657	14.58	4,657	14.58	0	0.00	0	0.00	31,945	
T0338	3-4, how many	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0339	3-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T0340	3-6a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0341	3-6b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0342	3-6c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0343	3-6d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0344	3-6e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0345	3-6f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0346	3-6g	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0347	3-7a	134	0.42	134	0.42	0	0.00	0	0.00	31,945	
T0348	3-7b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0349	3-7c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0400	4-1	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0401	4-2a	4	0.01	0	0.00	4	0.01	0	0.00	31,945	
T0402	4-2b(1), code	2	0.01	0	0.00	2	0.01	0	0.00	31,945	
T5402	4-2b(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0403	4-2b(2), K-5	2	0.01	0	0.00	2	0.01	0	0.00	31,945	
T0404	4-2b(2), 6-8	2	0.01	0	0.00	2	0.01	0	0.00	31,945	
T0405	4-2b(2), 9-12	1	0.00	0	0.00	1	0.00	0	0.00	31,945	
T0406	4-2c	1,813	5.68	844	2.64	966	3.02	3	0.01	31,945	
T0407	4-2d(1), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5407	4-2d(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0408	4-2d(1), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0409	4-2d(1), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0410	4-2d(1), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0411	4-2d(2), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T5411	4-2d(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0412	4-2d(2), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0413	4-2d(2), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits		Logic edits		Both consistency and logic edits		Total records	
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes		
T0414	4-2d(2), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0415	4-2d(3), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5415	4-2d(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0416	4-2d(3), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0417	4-2d(3), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0418	4-2d(3), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0419	4-2d(4), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5419	4-2d(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0420	4-2d(4), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0421	4-2d(4), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0422	4-2d(4), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0423	4-3a	1,268	3.97	951	2.98	314	0.98	3	0.01	31,945
T0424	4-3b	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0425	4-3c(1), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5425	4-3c(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0426	4-3c(2), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0427	4-3c(2), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0428	4-3c(2), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0429	4-3d	1,090	3.41	86	0.27	1,004	3.14	0	0.00	31,945
T0430	4-3e(1), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5430	4-3e(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0431	4-3e(1), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0432	4-3e(1), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0433	4-3e(1), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0434	4-3e(2), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5434	4-3e(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0435	4-3e(2), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits		Logic edits		Both consistency and logic edits		Total records	
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes		Percent of records affected
T0436	4-3e(2), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0437	4-3e(2), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0438	4-3e(3), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5438	4-3e(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0439	4-3e(3), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0440	4-3e(3), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0441	4-3e(3), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0442	4-3e(4), code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5442	4-3e(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0443	4e(4), K-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0444	4e(4), 6-8	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0445	4e(4), 9-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1500	5-1	667	2.09	667	2.09	0	0.00	0	0.00	31,945
T1501	5-2	162	0.51	162	0.51	0	0.00	0	0.00	31,945
T5502	5-3a	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5503	5-3b	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1504	5-3c	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1505	5-4a	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1506	5-4b	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1507	5-4c	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1508	5-4d	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1509	5-4e	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1510	5-4f	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1511	5-4g	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1512	5-4h	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1513	5-4i	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1514	5-4j	0	0.00	0	0.00	0	0.00	0	0.00	31,945

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T1515	5-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1516	5-6a	9	0.03	0	0.00	9	0.03	0	0.00	31,945	
T1517	5-6b	10	0.03	0	0.00	10	0.03	0	0.00	31,945	
T1518	5-6c	11	0.03	0	0.00	11	0.03	0	0.00	31,945	
T1519	5-6d	16	0.05	0	0.00	16	0.05	0	0.00	31,945	
T1520	5-6e	22	0.07	0	0.00	22	0.07	0	0.00	31,945	
T1521	5-6f	17	0.05	0	0.00	17	0.05	0	0.00	31,945	
T1522	5-6g	10	0.03	0	0.00	10	0.03	0	0.00	31,945	
T1523	5-7a	42	0.13	42	0.13	0	0.00	0	0.00	31,945	
T1524	5-7b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1525	5-7c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1526	5-8a	4	0.01	0	0.00	4	0.01	0	0.00	31,945	
T1527	5-8b	8	0.03	0	0.00	8	0.03	0	0.00	31,945	
T1528	5-8c	7	0.02	0	0.00	7	0.02	0	0.00	31,945	
T1529	5-8d	8	0.03	0	0.00	8	0.03	0	0.00	31,945	
T1530	5-9	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1600	6-1	1,313	4.11	1,313	4.11	0	0.00	0	0.00	31,945	
T1601	6-2	811	2.54	811	2.54	0	0.00	0	0.00	31,945	
T1602	6-3	1,694	5.30	1,694	5.30	0	0.00	0	0.00	31,945	
T1603	6-4a	79	0.25	0	0.00	79	0.25	0	0.00	31,945	
T1604	6-4b	118	0.37	0	0.00	118	0.37	0	0.00	31,945	
T1605	6-4c	166	0.52	0	0.00	166	0.52	0	0.00	31,945	
T1606	6-4d	283	0.89	0	0.00	283	0.89	0	0.00	31,945	
T1607	6-4e	171	0.54	0	0.00	171	0.54	0	0.00	31,945	
T1608	6-4f	149	0.47	0	0.00	149	0.47	0	0.00	31,945	
T1609	6-5	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1700	7-1a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T1701	7-1b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1702	7-1c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1703	7-1d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1704	7-1e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1705	7-1f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1706	7-1g	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1707	7-2a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1708	7-2b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1709	7-2c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1710	7-2d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1711	7-2e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1712	7-2f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1713	7-3a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1714	7-3b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1715	7-3c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1716	7-3d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1717	7-3e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1718	7-3f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1719	7-3g	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1720	7-3h	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1721	7-3i	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1722	7-3j	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1723	7-3k	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1724	7-3l	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1725	7-3m	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1726	7-3n	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1727	7-3o	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T1728	7-3p	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1729	7-3q	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1730	7-3r	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1731	7-4a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1732	7-4b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1733	7-4c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1734	7-4d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1735	7-4e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1736	7-4f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1737	7-4g	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1738	7-4h	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1739	7-4i	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1740	7-4j	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1741	7-5a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1742	7-5b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1743	7-5c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1744	7-5d	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1745	7-5e	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1746	7-5f	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1747	7-5g	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1748	7-6	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1749	7-7a	0	0.00	52	0.16	0	0.00	0	0.00	31,945	
T1750	7-7b	0	0.00	28	0.09	0	0.00	0	0.00	31,945	
T1751	7-7c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T1752	7-8a	0	0.00	30	0.09	0	0.00	0	0.00	31,945	
T1753	7-8b	0	0.00	40	0.13	0	0.00	0	0.00	31,945	
T1754	7-8c	0	0.00	0	0.00	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Consistency edits				Logic edits		Both consistency and logic edits		Total records
			Percent of records affected by all edits	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected		
T0900	8-1a	12	0.04	338	1.06	12	0.04	0	0.00	31,945	
T0901	8-1a, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0902	8-1a(1)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0903	8-1b	16	0.05	187	0.59	16	0.05	0	0.00	31,945	
T0904	8-1b, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0905	8-1b(1)	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0906	8-1c	12	0.04	163	0.51	12	0.04	0	0.00	31,945	
T0907	8-1c, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0908	8-2	0	0.00	2,601	8.14	0	0.00	0	0.00	31,945	
T0909	8-3	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0910	8-4	15	0.05	311	0.97	15	0.05	0	0.00	31,945	
T0911	8-4, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0912	8-5	18	0.06	101	0.32	18	0.06	0	0.00	31,945	
T0913	8-5, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0914	8-6	18	0.06	112	0.35	18	0.06	0	0.00	31,945	
T0915	8-6, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0916	8-7a	12	0.04	488	1.53	12	0.04	0	0.00	31,945	
T0917	8-7a, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0918	8-7b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0919	8-8	15	0.05	23	0.07	15	0.05	0	0.00	31,945	
T0920	8-8, amt	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0921	8-9	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0922	8-10a	0	0.00	69	0.22	0	0.00	0	0.00	31,945	
T0923	8-10b	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0924	8-11	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0925	8-12a	0	0.00	0	0.00	0	0.00	0	0.00	31,945	
T0926	8-12b	0	0.00	11	0.03	0	0.00	0	0.00	31,945	

See notes at end of table.

Table H-3. Number of changes and percentage of records affected during the computer edit of the public school teachers, including public charter school teachers, data file: 2015–16—Continued

Variable	Item number	Total number of edit changes	Percent of records affected by all edits	Consistency edits		Logic edits		Both consistency and logic edits		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
T0927	8-12c	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0928	8-13	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0929	8-14, White	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0930	8-14, Black	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0931	8-14, Asian	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0932	8-14, Pac Islander	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0933	8-14, Am Indian	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0934	8-15	983	3.08	0	0.00	983	3.08	0	0.00	31,945

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Teacher Documentation Data File," 2015–16.

Appendix I. List of Matching Variables for the 2015–16 NTPS

The tables in this appendix provide the matching variables used for each questionnaire. The tables are as follows:

Table	Page
I-1. Matching variables used for the Principal Questionnaire (NTPS-2): 2015–16	I-2
I-2. Matching variables used for the School Questionnaire (NTPS-3): 2015–16.....	I-2
I-3. Matching variables used for the Teacher Questionnaire (NTPS-4): 2015–16.....	I-4

Table I-1. Matching variables used for the Principal Questionnaire (NTPS-2): 2015–16

Matching variable	Description	Values	Items
AGE	Age by category	1: 19–29 years 2: 30–45 years 3: 46–60 years 4: 61–88 years 5: Unclassified	P0100, P0104–P0107, P0109–P0111
DEGREE	Highest degree category	1: Associate’s degree 2: Bachelor’s degree 3: Master’s degree 4: Educational specialist 5: Doctorate	P0101–P0103, P0108, P1400–P1407, P1414, P0900, P0907, P0908
DN2_X46	Item 4-5 matrix	1: ≥ 2 negative responses in item 4-5 2: < 2 negative responses in item 4-5	P1414
ENR	School enrollment size	1: $1 \leq \text{students} \leq 299$ 2: $300 \leq \text{students} \leq 599$ 3: $\text{Students} \leq 600$ 4: Unclassified	P0100, P0104, P0105, P0109–P0111
MINEN	Minority enrollment code	1: Minority < 5.5 percent 2: $5.5 \text{ percent} \leq \text{minority} < 20.5 \text{ percent}$ 3: $20.5 \text{ percent} \leq \text{minority} < 50.5 \text{ percent}$ 4: Unclassified 5: $50.5 \text{ percent} \leq \text{minority}$	P0901–P0906
NLEVEL	Adjusted instructional level of students (five levels)	1: Elementary 2: Combined, elementary 3: Combined 4: Combined, secondary 5: Secondary	P0100–P0111, P0200–P0209, P0300–P0324, P1400–P1414, P1500–P1521, P0900–P0908
P0901	Respondent’s Hispanic ethnicity	1: Hispanic 2: Not Hispanic	P0902–P0906
TYPE15	School type	1: Regular 2: Special program emphasis 3: Special education 4: Career/technical/vocational 5: Alternative/other	P0300–P0312, P0322–P0324, P1408–P1413, P1500–P1521
URB	Urban status of school	1: City 2: Suburb 3: Town 4: Rural	P0101–P0103, P0106–P0108, P0200–P0209, P0300–P0324, P1400–P1413, P1500–P1521, P0900–P0906, P0908
YEARPRIN	Years as principal by category	1: Years ≤ 3 2: $4 \leq \text{years} \leq 15$ 3: $16 \leq \text{years} \leq 30$ 4: $31 \leq \text{years} \leq 80$	P0100–P0111, P0200–P0209, P0313–P0321, P1400–P1414, P0900–P0908

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Documentation Data File,” 2015–16.

Table I-2. Matching variables used for the School Questionnaire (NTPS-3): 2015–16

Matching variable	Description	Values	Items
DN3_X1	Kindergarten enrollment status and school size	1: Large school (> 100) with kindergarten students enrolled 2: Small school (≤ 100) with kindergarten students enrolled 3: School (any size) with no kindergarten students enrolled	S0100–S0114
ENR	School enrollment size	1: $1 \leq \text{students} \leq 299$ 2: $300 \leq \text{students} \leq 599$ 3: $\text{Students} \leq 600$ 4: Unclassified	S0271, S0272
LEVEL	Instructional level of students (three levels)	1: Elementary 2: Combined 3: Secondary	S0100–S0114, S0117–S0119, S0121–S0129, S0200–S0202, S0210–S0286, S0300–S0302, S0400–S0420
MINEN	Minority enrollment code	1: Minority < 5.5 percent 2: $5.5 \text{ percent} \leq \text{minority} < 20.5 \text{ percent}$ 3: $20.5 \text{ percent} \leq \text{minority} < 50.5 \text{ percent}$ 4: Unclassified 5: $50.5 \text{ percent} \leq \text{minority}$	S0116, S0130, S0203–S0209, S0230–S0245, S0300–S0302, S0409–S0420, S0500, S0501
S0100	Prekindergarten offered at the school	1: Yes 2: No	S0407
TYPE15	School type	1: Regular school 2: Special program emphasis school 3: Special education school 4: Career/technical/vocational school 5: Alternative/other/unclassified	S0100–S0114, S0117–S0119, S0121–S0129, S0200–S0202, S0210–S0286, S0300–S0302, S0400–S0408, S0500, S0501
URB	Urban status of school	1: City 2: Suburb 3: Town 4: Rural	S0116, S0124–S0130, S0200–S0286, S0300–S0302, S0400–S0406, S0409–S0420, S0500, S0501

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Documentation Data File,” 2015–16.

Table I-3. Matching variables used for the Teacher Questionnaire (NTPS-4): 2015–16—Continued

Matching variable	Description	Values	Items
AGE_TCAT	Age by category	1: 19–29 years 2: 30–54 years 3: 55+ years 4: Unclassified	T0104, T0105, T0107–T0110, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T0923, T0925–T0927
BEGINTEA	Year in which beginning first teaching position	1: 2012–13 school year and after 2: 2000–01 school year to 2011–12 3: 1999–2000 school year and prior 4: Unclassified	T0925–T0927, T0934
ENR	School enrollment size	1: $1 \leq \text{students} \leq 299$ 2: $300 \leq \text{students} \leq 599$ 3: $\text{Students} \leq 600$ 4: Unclassified	T0103, T0106, T0223, T0224, T0230, T0240–T0269, T1700–T1730, T1748, T0922
FULPTIME	Full-time/part-time status	1: Full-time 2: Part-time 3: Unclassified	T0218, T0221, T0225–T0229, T1603–T1609
FULPTIMED	Detailed full-time/part-time status	1: Full-time 2: $\frac{3}{4}$ time or more, but less than full-time 3: $\frac{1}{2}$ time or more, but less than $\frac{3}{4}$ time 4: $\frac{1}{4}$ time or more, but less than $\frac{1}{2}$ time 5: Less than $\frac{1}{4}$ time 6: Unclassified	T1600–T1602
HIGHDEG	Highest degree category	1: Unknown/unclassified 2: Bachelor's degree 3: Higher than bachelor's degree	T0106, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T0900–T0920
HISPORG	Hispanic origin	1: Hispanic 2: Not Hispanic 3: Unknown	T0928–T0933
LASTYEAR	Main assignment last year	1: Teaching 2: Not teaching 3: Unknown/unclassified	T0104, T0105, T0107, T0108
MINEN	Minority enrollment code	1: Minority < 5.5 percent 2: $5.5 \text{ percent} \leq \text{minority} < 20.5 \text{ percent}$ 3: $20.5 \text{ percent} \leq \text{minority} < 50.5 \text{ percent}$ 4: Unclassified 5: $50.5 \text{ percent} \leq \text{minority}$	T0928–T0933
RESPSEX	Gender of respondent	1: Male 2: Female	T0900–T0920
SCHEXPER	Years teaching at this school	1: 3 or fewer years 2: 4–15 years 3: 16+ years 4: Unclassified	T0104, T0105, T0107–T0110, T1700–T1754, T0922, T0923, T0925–T0927, T0934

See notes at end of table.

Table I-3. Matching variables used for the Teacher Questionnaire (NTPS-4): 2015–16—Continued

Matching variable	Description	Values	Items
SCHKND	Kind of school	1: Charter school 3: Not a charter school	T0103–T0110, T0215, T0216, T0218, T0221, T0223–T0230, T0240–T0269, T0305, T0307, T0309, T0311, T0313, T0316, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T1600–T1609, T1700–T1754, T0900–T0923, T0928–T0934
STATE_CZX	Numeric recode of STATE	1: Alabama 2: Alaska 4: Arizona 5: Arkansas 6: California 8: Colorado 9: Connecticut 10: Delaware 11: District of Columbia 12: Florida 13: Georgia 15: Hawaii 16: Idaho 17: Illinois 18: Indiana 19: Iowa 20: Kansas 21: Kentucky 22: Louisiana 23: Maine 24: Maryland 25: Massachusetts 26: Michigan 27: Minnesota 28: Mississippi 29: Missouri 30: Montana 31: Nebraska 32: Nevada 33: New Hampshire 34: New Jersey 35: New Mexico 36: New York 37: North Carolina 38: North Dakota 39: Ohio 40: Oklahoma 41: Oregon 42: Pennsylvania 44: Rhode Island 45: South Carolina 46: South Dakota 47: Tennessee	T0103–T0110, T0215, T0216, T0218–T0221, T0223–T0230, T0240–T0269, T0305, T0307, T0309, T0311, T0313, T0316, T0318, T0320, T0322, T0323, T0325, T0326, T0328, T0329, T0331, T0332, T0334, T0335, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T1600–T1609, T1700–T1754, T0900–T0923, T0925–T0934

See notes at end of table.

Table I-3. Matching variables used for the Teacher Questionnaire (NTPS-4): 2015–16—Continued

Matching variable	Description	Values	Items
		48: Texas 49: Utah 50: Vermont 51: Virginia 53: Washington 54: West Virginia 55: Wisconsin 56: Wyoming	
TEAEXPER	Years of teaching experience (any school)	1: ≤ 3 years 2: $4 \leq \text{years} \leq 15$ 3: $16 \leq \text{years}$ 4: Unknown/unclassified	T0218, T0221, T0318, T0320, T0322, T0323, T0325, T0326, T0328, T0329, T0331, T0332, T0334, T0335, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T1600–T1609, T1731–T1747, T1749–T1754, T0921
TEAFIELD	Main teaching assignment field	1: Special education 2: Prekindergarten, kindergarten, or general elementary 3: Math 4: Science 5: English or language arts 6: Social studies or social science 7: Vocational or technical 8: English as a Second Language (ESL) 9: Unknown/unclassified	T0215, T0216, T0219–T0221, T0223–T0230, T0240–T0269, T0307, T0309, T0311, T0313, T0316, T0318, T0320, T0322, T0323, T0325, T0326, T0328, T0329, T0331, T0332, T0334, T0335, T1600–T1609, T0900–T0920
TEALEVEL	Teacher level	1: Elementary 2: Nonelementary	T0103–T0110, T0215, T0216, T0218–T0221, T0223–T0230, T0240–T0269, T0305, T0307, T0309, T0311, T0313, T0316, T0318, T0320, T0322, T0323, T0325, T0326, T0328, T0329, T0331, T0332, T0334, T0335, T0337–T0349, T0400–T0445, T1501, T1504–T1530, T1600–T1609, T1700–T1754, T0900–T0920, T0922, T0923, T0928–T0934
TYPE15	School type	1: Regular school 2: Special program emphasis school 3: Special education school 4: Career/technical/vocational school 5: Alternative/other/unclassified	T0215, T0216, T0219, T0220
URB	Urban status of school	1: City 2: Suburban 3: Town 4: Rural	T0103, T0106, T0215, T0216, T0219, T0220, T0223, T0224, T0230, T0240–T0269, T0305, T0307, T0309, T0311, T0313, T0316, T1700–T1754, T0900–T0922, T0928–T0933

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Teacher Documentation Data File,” 2015–16.

Appendix J. Imputation Changes to Variables, by Data File

The tables of this appendix contain the total number of imputations applied in both stages of imputation as well as the percentage of all records affected by the imputation for each source code on each data file. (See chapter 7 for more details about imputation procedures.) The tables are as follows:

Table	Page
J-1. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school principal, including public charter school principal, data file, by variable: 2015–16	J-2
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J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16	J-12

Table J-1. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school principal, including public charter school principal, data file, by variable: 2015–16

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P0100	1-1	76	1.33	5	0.09	63	1.10	8	0.14	5,711
P0101	1-2	13	0.23	13	0.23	0	0.00	0	0.00	5,711
P0102	1-3	15	0.26	15	0.26	0	0.00	0	0.00	5,711
P0103	1-4	21	0.37	21	0.37	0	0.00	0	0.00	5,711
P0104	1-5	15	0.26	13	0.23	2	0.04	0	0.00	5,711
P0105	1-6	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0106	1-7	7	0.12	7	0.12	0	0.00	0	0.00	5,711
P0107	1-8	44	0.77	44	0.77	0	0.00	0	0.00	5,711
P0108	1-9	12	0.21	12	0.21	0	0.00	0	0.00	5,711
P0109	1-10	15	0.26	15	0.26	0	0.00	0	0.00	5,711
P0110	1-11	4	0.07	1	0.02	2	0.04	1	0.02	5,711
P0111	1-12	4	0.07	0	0.00	2	0.04	2	0.04	5,711
P0200	2-1, most important	217	3.80	217	3.80	0	0.00	0	0.00	5,711
P0201	2-1, second most important	220	3.85	220	3.85	0	0.00	0	0.00	5,711
P0202	2-1, third most important	234	4.10	233	4.08	1	0.02	0	0.00	5,711
P0203	2-2a	25	0.44	25	0.44	0	0.00	0	0.00	5,711
P0204	2-2b	23	0.40	23	0.40	0	0.00	0	0.00	5,711
P0205	2-2c	26	0.46	26	0.46	0	0.00	0	0.00	5,711
P0206	2-2d	21	0.37	21	0.37	0	0.00	0	0.00	5,711
P0207	2-2e	22	0.39	22	0.39	0	0.00	0	0.00	5,711
P0208	2-2f	24	0.42	24	0.42	0	0.00	0	0.00	5,711
P0209	2-2g	22	0.39	22	0.39	0	0.00	0	0.00	5,711
P0300	3-1a	18	0.32	18	0.32	0	0.00	0	0.00	5,711
P0301	3-1b	17	0.30	17	0.30	0	0.00	0	0.00	5,711

See notes at end of table.

Table J-1. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school principal, including public charter school principal, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P0302	3-1c	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0303	3-1d	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0304	3-1e	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0305	3-1f	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0306	3-1g	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0307	3-1h	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0308	3-1i	18	0.32	18	0.32	0	0.00	0	0.00	5,711
P0309	3-1j	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0310	3-1k	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0311	3-1l	18	0.32	18	0.32	0	0.00	0	0.00	5,711
P0312	3-1m	17	0.30	17	0.30	0	0.00	0	0.00	5,711
P0313	3-2a	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0314	3-2b	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0315	3-2c	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0316	3-2d	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0317	3-2e	68	1.19	68	1.19	0	0.00	0	0.00	5,711
P0318	3-2f	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0319	3-2g	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0320	3-2h	69	1.21	69	1.21	0	0.00	0	0.00	5,711
P0321	3-2i	70	1.23	70	1.23	0	0.00	0	0.00	5,711
P0322	3-3a	37	0.65	37	0.65	0	0.00	0	0.00	5,711
P0323	3-3b	54	0.95	54	0.95	0	0.00	0	0.00	5,711
P0324	3-4	59	1.03	59	1.03	0	0.00	0	0.00	5,711
P1400	4-1	94	1.65	84	1.47	10	0.18	0	0.00	5,711
P1401	4-2a	63	1.10	63	1.10	0	0.00	0	0.00	5,711
P1402	4-2b	64	1.12	64	1.12	0	0.00	0	0.00	5,711

See notes at end of table.

Table J-1. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school principal, including public charter school principal, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P1403	4-2c	65	1.14	65	1.14	0	0.00	0	0.00	5,711
P1404	4-2d	65	1.14	65	1.14	0	0.00	0	0.00	5,711
P1405	4-2e	67	1.17	67	1.17	0	0.00	0	0.00	5,711
P5405	4-2e, other	0	0.00	0	0.00	0	0.00	0	0.00	5,711
P1406	4-3	322	5.64	319	5.59	3	0.05	0	0.00	5,711
P1407	4-4	150	2.63	150	2.63	0	0.00	0	0.00	5,711
P1408	4-5a	59	1.03	59	1.03	0	0.00	0	0.00	5,711
P1409	4-5b	45	0.79	45	0.79	0	0.00	0	0.00	5,711
P1410	4-5c	52	0.91	52	0.91	0	0.00	0	0.00	5,711
P1411	4-5d	50	0.88	50	0.88	0	0.00	0	0.00	5,711
P1412	4-5e	52	0.91	52	0.91	0	0.00	0	0.00	5,711
P1413	4-5f	53	0.93	53	0.93	0	0.00	0	0.00	5,711
P1414	4-6	30	0.53	30	0.53	0	0.00	0	0.00	5,711
P1500	5-1	63	1.10	63	1.10	0	0.00	0	0.00	5,711
P1501	5-2a	35	0.61	35	0.61	0	0.00	0	0.00	5,711
P1502	5-2b	38	0.67	38	0.67	0	0.00	0	0.00	5,711
P1503	5-2c	43	0.75	43	0.75	0	0.00	0	0.00	5,711
P1504	5-2d	40	0.70	40	0.70	0	0.00	0	0.00	5,711
P1505	5-2e	55	0.96	55	0.96	0	0.00	0	0.00	5,711
P1506	5-2f	59	1.03	59	1.03	0	0.00	0	0.00	5,711
P1507	5-2g	56	0.98	56	0.98	0	0.00	0	0.00	5,711
P1508	5-2h	76	1.33	76	1.33	0	0.00	0	0.00	5,711
P1509	5-3a	47	0.82	47	0.82	0	0.00	0	0.00	5,711
P1510	5-3b	41	0.72	41	0.72	0	0.00	0	0.00	5,711
P1511	5-3c	46	0.81	46	0.81	0	0.00	0	0.00	5,711
P1512	5-3d	48	0.84	48	0.84	0	0.00	0	0.00	5,711

See notes at end of table.

Table J-1. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school principal, including public charter school principal, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
P1513	5-3e	51	0.89	51	0.89	0	0.00	0	0.00	5,711
P1514	5-4a	55	0.96	55	0.96	0	0.00	0	0.00	5,711
P1515	5-4b	47	0.82	47	0.82	0	0.00	0	0.00	5,711
P1516	5-4c	41	0.72	41	0.72	0	0.00	0	0.00	5,711
P1517	5-4d	49	0.86	49	0.86	0	0.00	0	0.00	5,711
P1518	5-4e	73	1.28	73	1.28	0	0.00	0	0.00	5,711
P1519	5-5a	49	0.86	49	0.86	0	0.00	0	0.00	5,711
P1520	5-5b	59	1.03	59	1.03	0	0.00	0	0.00	5,711
P1521	5-5c	66	1.16	66	1.16	0	0.00	0	0.00	5,711
P0900	6-1	6	0.11	6	0.11	0	0.00	0	0.00	5,711
P0901	6-2	22	0.39	22	0.39	0	0.00	0	0.00	5,711
P0902	6-3, White	96	1.68	96	1.68	0	0.00	0	0.00	5,711
P0903	6-3, Black	96	1.68	96	1.68	0	0.00	0	0.00	5,711
P0904	6-3, Asian	96	1.68	96	1.68	0	0.00	0	0.00	5,711
P0905	6-3, Pac Islander	96	1.68	96	1.68	0	0.00	0	0.00	5,711
P0906	6-3, American Indian	96	1.68	96	1.68	0	0.00	0	0.00	5,711
P0907	6-4	118	2.07	118	2.07	0	0.00	0	0.00	5,711
P0908	6-5	272	4.76	269	4.71	3	0.05	0	0.00	5,711

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Restricted Use Data File,” 2015–16.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0100	1-1, PK	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0101	1-1, KG	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0102	1-1, 1st	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0103	1-1, 2nd	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0104	1-1, 3rd	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0105	1-1, 4th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0106	1-1, 5th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0107	1-1, 6th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0108	1-1, 7th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0109	1-1, 8th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0110	1-1, 9th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0111	1-1, 10th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0112	1-1, 11th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0113	1-1, 12th	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0114	1-1, ungraded	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0115	1-2	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0116	1-3	506	8.78	506	0.00	0	0.00	0	0.00	5,765
S0117	1-4, start	52	0.90	44	0.00	0	0.00	8	0.14	5,765
S0118	1-4, end	60	1.04	46	0.00	0	0.00	14	0.24	5,765
S0119	1-5	155	2.69	155	0.00	0	0.00	0	0.00	5,765
S0120	1-6	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S5120	1-6, write-in	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0121	1-7a	11	0.19	11	0.00	0	0.00	0	0.00	5,765
S0122	1-7b	55	0.95	55	0.00	0	0.00	0	0.00	5,765
S0123	1-7c	60	1.04	60	0.00	0	0.00	0	0.00	5,765
S0124	1-8	68	1.18	68	0.00	0	0.00	0	0.00	5,765

See notes at end of table.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0125	1-9a	31	0.54	9	0.00	0	0.00	22	0.38	5,765
S0126	1-9b	21	0.36	21	0.00	0	0.00	0	0.00	5,765
S0127	1-10a	54	0.94	54	0.00	0	0.00	0	0.00	5,765
S0128	1-10b	59	1.02	59	0.00	0	0.00	0	0.00	5,765
S0129	1-10c	26	0.45	26	0.00	0	0.00	0	0.00	5,765
S0130	1-11	76	1.32	76	0.00	0	0.00	0	0.00	5,765
S0200	2-1a	30	0.52	29	0.00	0	0.00	1	0.02	5,765
S0201	2-1b	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0202	2-1c	2	0.03	2	0.00	0	0.00	0	0.00	5,765
S0203	2-2a	243	4.22	243	0.00	0	0.00	0	0.00	5,765
S0204	2-2b	261	4.53	260	0.00	0	0.00	1	0.02	5,765
S0205	2-2c	244	4.23	244	0.00	0	0.00	0	0.00	5,765
S0206	2-2d	239	4.15	239	0.00	0	0.00	0	0.00	5,765
S0207	2-2e	237	4.11	237	0.00	0	0.00	0	0.00	5,765
S0208	2-2f	238	4.13	238	0.00	0	0.00	0	0.00	5,765
S0209	2-2g	250	4.34	250	0.00	0	0.00	0	0.00	5,765
S0210	2-3a_FT	208	3.61	207	0.00	0	0.00	1	0.02	5,765
S0211	2-3a_PT	106	1.84	104	0.03	2	0.03	0	0.00	5,765
S0212	2-3b_FT	230	3.99	230	0.00	0	0.00	0	0.00	5,765
S0213	2-3b_PT	211	3.66	211	0.00	0	0.00	0	0.00	5,765
S0214	2-3c_FT	310	5.38	310	0.00	0	0.00	0	0.00	5,765
S0215	2-3c_PT	385	6.68	385	0.00	0	0.00	0	0.00	5,765
S0216	2-3d_FT	120	2.08	120	0.00	0	0.00	0	0.00	5,765
S0217	2-3d_PT	169	2.93	169	0.00	0	0.00	0	0.00	5,765
S0218	2-3e_FT	140	2.43	140	0.00	0	0.00	0	0.00	5,765
S0219	2-3e_PT	189	3.28	189	0.00	0	0.00	0	0.00	5,765

See notes at end of table.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0220	2-3e_PT	122	2.12	119	0.02	1	0.02	2	0.03	5,765
S0221	2-3f_1_FT	211	3.66	211	0.00	0	0.00	0	0.00	5,765
S0222	2-3f_1_PT	99	1.72	99	0.00	0	0.00	0	0.00	5,765
S0223	2-3f_2_FT	444	7.70	444	0.00	0	0.00	0	0.00	5,765
S0224	2-3f_2_PT	105	1.82	105	0.00	0	0.00	0	0.00	5,765
S0225	2-3f_3_FT	417	7.23	417	0.00	0	0.00	0	0.00	5,765
S0226	2-3f_3_PT	123	2.13	123	0.00	0	0.00	0	0.00	5,765
S0227	2-3f_4_FT	301	5.22	300	0.02	1	0.02	0	0.00	5,765
S0228	2-3f_4_PT	116	2.01	116	0.00	0	0.00	0	0.00	5,765
S0229	2-3f_5_FT	515	8.93	515	0.00	0	0.00	0	0.00	5,765
S0230	2-3f_5_PT	395	6.85	394	0.02	1	0.02	0	0.00	5,765
S0231	2-3g_1_FT	230	3.99	230	0.00	0	0.00	0	0.00	5,765
S0232	2-3g_1_PT	613	10.63	613	0.00	0	0.00	0	0.00	5,765
S0233	2-3g_2_FT	465	8.07	465	0.00	0	0.00	0	0.00	5,765
S0234	2-3g_2_PT	428	7.42	425	0.05	3	0.05	0	0.00	5,765
S0235	2-3g_3_FT	239	4.15	239	0.00	0	0.00	0	0.00	5,765
S0236	2-3g_3_PT	489	8.48	489	0.00	0	0.00	0	0.00	5,765
S0237	2-3g_4_FT	552	9.58	552	0.00	0	0.00	0	0.00	5,765
S0238	2-3g_4_PT	364	6.31	364	0.00	0	0.00	0	0.00	5,765
S0239	2-3g_5_FT	426	7.39	426	0.00	0	0.00	0	0.00	5,765
S0240	2-3g_5_PT	372	6.45	372	0.00	0	0.00	0	0.00	5,765
S0241	2-3g_6_FT	516	8.95	516	0.00	0	0.00	0	0.00	5,765
S0242	2-3g_6_PT	473	8.20	473	0.00	0	0.00	0	0.00	5,765
S0243	2-3g_7_FT	501	8.69	501	0.00	0	0.00	0	0.00	5,765
S0244	2-3g_7_PT	500	8.67	500	0.00	0	0.00	0	0.00	5,765
S0245	2-3g_8_FT	611	10.60	611	0.00	0	0.00	0	0.00	5,765

See notes at end of table.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0246	2-3h_FT	260	4.51	259	0.02	1	0.02	0	0.00	5,765
S0247	2-3h_PT	126	2.19	126	0.00	0	0.00	0	0.00	5,765
S0248	2-3i_FT	522	9.05	522	0.00	0	0.00	0	0.00	5,765
S0249	2-3i_PT	221	3.83	221	0.00	0	0.00	0	0.00	5,765
S0250	2-3j_FT	279	4.84	279	0.00	0	0.00	0	0.00	5,765
S0251	2-3j_PT	148	2.57	146	0.03	2	0.03	0	0.00	5,765
S0252	2-3k_FT	407	7.06	407	0.00	0	0.00	0	0.00	5,765
S0253	2-3k_PT	532	9.23	532	0.00	0	0.00	0	0.00	5,765
S0254	2-3l_FT	502	8.71	502	0.00	0	0.00	0	0.00	5,765
S0255	2-3l_PT	358	6.21	358	0.00	0	0.00	0	0.00	5,765
S0256	2-3m_FT	286	4.96	286	0.00	0	0.00	0	0.00	5,765
S0257	2-3m_PT	504	8.74	504	0.00	0	0.00	0	0.00	5,765
S0258	2-3n_FT	413	7.16	413	0.00	0	0.00	0	0.00	5,765
S0259	2-3n_PT	434	7.53	434	0.00	0	0.00	0	0.00	5,765
S0260	2-3o_FT	295	5.12	295	0.00	0	0.00	0	0.00	5,765
S0261	2-3o_PT	642	11.14	642	0.00	0	0.00	0	0.00	5,765
S0262	2-3p_FT	641	11.12	641	0.00	0	0.00	0	0.00	5,765
S0263	2-3p_PT	616	10.69	616	0.00	0	0.00	0	0.00	5,765
S0264	2-4a_1	73	1.27	73	0.00	0	0.00	0	0.00	5,765
S0265	2-4a_2	73	1.27	73	0.00	0	0.00	0	0.00	5,765
S0266	2-4a_3	75	1.30	75	0.00	0	0.00	0	0.00	5,765
S0267	2-4b_1	74	1.28	74	0.00	0	0.00	0	0.00	5,765
S0268	2-4b_2	74	1.28	74	0.00	0	0.00	0	0.00	5,765
S0269	2-4b_3	71	1.23	71	0.00	0	0.00	0	0.00	5,765
S0270	2-4b_4	74	1.28	74	0.00	0	0.00	0	0.00	5,765
S0271	2-5a	129	2.24	129	0.00	0	0.00	0	0.00	5,765

See notes at end of table.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0272	2-5b_1	225	3.90	188	0.00	0	0.00	37	0.64	5,765
S0273	2-5b_2	92	1.60	92	0.00	0	0.00	0	0.00	5,765
S0274	2-5b_3	389	6.75	389	0.00	0	0.00	0	0.00	5,765
S0275	2-5b_4	434	7.53	434	0.00	0	0.00	0	0.00	5,765
S0276	2-5b_5	466	8.08	466	0.00	0	0.00	0	0.00	5,765
S0277	2-5b_6	375	6.50	375	0.00	0	0.00	0	0.00	5,765
S0278	2-5b_7	437	7.58	437	0.00	0	0.00	0	0.00	5,765
S0279	2-5b_8	432	7.49	432	0.00	0	0.00	0	0.00	5,765
S0280	2-5b_9	462	8.01	462	0.00	0	0.00	0	0.00	5,765
S0281	2-5b_10	432	7.49	432	0.00	0	0.00	0	0.00	5,765
S0282	2-5b_11	416	7.22	416	0.00	0	0.00	0	0.00	5,765
S0283	2-5b_12	253	4.39	253	0.00	0	0.00	0	0.00	5,765
S0284	2-5b_13	1,160	20.12	1,160	0.00	0	0.00	0	0.00	5,765
S0285	2-6a	95	1.65	95	0.00	0	0.00	0	0.00	5,765
S0286	2-6b	108	1.87	108	0.00	0	0.00	0	0.00	5,765
S0300	3-1	116	2.01	111	0.00	0	0.00	5	0.09	5,765
S0301	3-2	272	4.72	249	0.00	0	0.00	23	0.40	5,765
S0302	3-3	257	4.46	242	0.00	0	0.00	15	0.26	5,765
S0400	4-1a	76	1.32	76	0.00	0	0.00	0	0.00	5,765
S0401	4-1b	331	5.74	323	0.10	6	0.10	2	0.03	5,765
S0402	4-2a	3	0.05	3	0.00	0	0.00	0	0.00	5,765
S0403	4-2b_1	720	12.49	701	0.33	19	0.33	0	0.00	5,765
S0404	4-2b_2	724	12.56	705	0.33	19	0.33	0	0.00	5,765
S0405	4-2b_3	717	12.44	698	0.33	19	0.33	0	0.00	5,765
S0406	4-2b_4	702	12.18	683	0.33	19	0.33	0	0.00	5,765
S0407	4-3a	0	0.00	0	0.00	0	0.00	0	0.00	5,765

See notes at end of table.

Table J-2. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school, including public charter school, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
S0408	4-3b	225	3.90	225	0.00	0	0.00	0	0.00	5,765
S0409	4-4a	5	0.09	5	0.00	0	0.00	0	0.00	5,765
S0410	4-4b, K-12	853	14.80	853	0.00	0	0.00	0	0.00	5,765
S0411	4-4b, PK	435	7.55	435	0.00	0	0.00	0	0.00	5,765
S0412	4-5	86	1.49	86	0.00	0	0.00	0	0.00	5,765
S0414	4-6, K-12, none/all	393	6.82	392	0.02	1	0.02	0	0.00	5,765
S0416	4-6, K-12	445	7.72	3	0.90	52	0.90	390	6.76	5,765
S0417	4-6, PK, none/all	111	1.93	111	0.00	0	0.00	0	0.00	5,765
S0418	4-6, PK	111	1.93	111	0.00	0	0.00	0	0.00	5,765
S0419	4-7a	105	1.82	105	0.00	0	0.00	0	0.00	5,765
S0420	4-7b	245	4.25	245	0.00	0	0.00	0	0.00	5,765
S0500	4-7c	0	0.00	0	0.00	0	0.00	0	0.00	5,765
S0501	4-8	176	3.05	176	0.00	0	0.00	0	0.00	5,765
S5501	5-1	0	0.00	0	0.00	0	0.00	0	0.00	5,765

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), "Public School Restricted Use Data File," 2015–16.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0100	1-1	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0101	1-2	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0102	1-3	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0103	1-4	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0104	1-5, Month	157	0.49	157	0.49	0	0.00	0	0.00	31,945
T0105	1-5, Year	411	1.29	323	1.01	1	0.00	87	0.27	31,945
T0106	1-6	71	0.22	71	0.22	0	0.00	0	0.00	31,945
T5106	1-6, specify	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0107	1-7, Month	308	0.96	307	0.96	0	0.00	1	0.00	31,945
T0108	1-7, Year	486	1.52	50	0.16	2	0.01	434	1.36	31,945
T0109	1-8	564	1.77	217	0.68	0	0.00	347	1.09	31,945
T0110	1-9	446	1.40	203	0.64	0	0.00	243	0.76	31,945
T0200	2-1, PK	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0201	2-1, KG	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0202	2-1, 1st	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0203	2-1, 2nd	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0204	2-1, 3rd	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0205	2-1, 4th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0206	2-1, 5th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0207	2-1, 6th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0208	2-1, 7th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0209	2-1, 8th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0210	2-1, 9th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0211	2-1, 10th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0212	2-1, 11th	1	0.00	0	0.00	0	0.00	1	0.00	31,945
T0213	2-1, 12th	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0214	2-1, UG	1	0.00	0	0.00	0	0.00	1	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0215	2-2	982	3.07	931	2.91	51	0.16	0	0.00	31,945
T0216	2-3	805	2.52	803	2.51	2	0.01	0	0.00	31,945
T0217	2-4, code	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5217	2-4, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0218	2-5	112	0.35	112	0.35	0	0.00	0	0.00	31,945
T0219	2-6a	180	0.56	180	0.56	0	0.00	0	0.00	31,945
T0220	2-6b	196	0.61	145	0.45	51	0.16	0	0.00	31,945
T0221	2-7	16	0.05	16	0.05	0	0.00	0	0.00	31,945
T0222	2-8	16	0.05	16	0.05	0	0.00	0	0.00	31,945
T0223	2-0	104	0.33	95	0.30	9	0.03	0	0.00	31,945
T0224	2-10	20	0.06	17	0.05	3	0.01	0	0.00	31,945
T0225	2-11a	288	0.90	260	0.81	27	0.08	1	0.00	31,945
T0226	2-11a(1)	1,041	3.26	1,014	3.17	27	0.08	0	0.00	31,945
T0227	2-11b	416	1.30	389	1.22	27	0.08	0	0.00	31,945
T0228	2-11c	500	1.57	473	1.48	27	0.08	0	0.00	31,945
T0229	2-11d	511	1.60	484	1.52	27	0.08	0	0.00	31,945
T0230	2-12	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0240	2-13b(1)	330	1.03	0	0.00	0	0.00	330	1.03	31,945
T5240	2-13a(1)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0250	2-13c(1)	40	0.13	0	0.00	0	0.00	40	0.13	31,945
T0260	2-13d(1)	983	3.08	605	1.89	378	1.18	0	0.00	31,945
T0241	2-13b(2)	323	1.01	0	0.00	0	0.00	323	1.01	31,945
T5241	2-13a(2)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0251	2-13c(2)	44	0.14	0	0.00	0	0.00	44	0.14	31,945
T0261	2-13d(2)	892	2.79	519	1.62	373	1.17	0	0.00	31,945
T0242	2-13b(3)	312	0.98	0	0.00	0	0.00	312	0.98	31,945
T5242	2-13a(3)	0	0.00	0	0.00	0	0.00	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
T0252	2-13c(3)	47	0.15	0	0.00	0	0.00	47	0.15	31,945
T0262	2-13d(3)	832	2.60	467	1.46	365	1.14	0	0.00	31,945
T0243	2-13b(4)	298	0.93	0	0.00	0	0.00	298	0.93	31,945
T5243	2-13a(4)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0253	2-13c(4)	41	0.13	0	0.00	0	0.00	41	0.13	31,945
T0263	2-13d(4)	762	2.39	418	1.31	344	1.08	0	0.00	31,945
T0244	2-13b(5)	279	0.87	0	0.00	0	0.00	279	0.87	31,945
T5244	2-13a(5)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0254	2-13c(5)	31	0.10	0	0.00	0	0.00	31	0.10	31,945
T0264	2-13d(5)	682	2.13	347	1.09	335	1.05	0	0.00	31,945
T0245	2-13b(6)	254	0.80	0	0.00	0	0.00	254	0.80	31,945
T5245	2-13a(6)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0255	2-13c(6)	13	0.04	0	0.00	0	0.00	13	0.04	31,945
T0265	2-13d(6)	533	1.67	250	0.78	283	0.89	0	0.00	31,945
T0246	2-13a(7)	227	0.71	0	0.00	0	0.00	227	0.71	31,945
T5246	2-13b(7)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0256	2-13c(7)	1	0.00	0	0.00	0	0.00	1	0.00	31,945
T0266	2-13d(7)	346	1.08	107	0.33	239	0.75	0	0.00	31,945
T0247	2-13a(8)	220	0.69	0	0.00	0	0.00	220	0.69	31,945
T5247	2-13b(8)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0257	2-13c(8)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0267	2-13d(8)	288	0.90	65	0.20	223	0.70	0	0.00	31,945
T0248	2-13a(9)	213	0.67	0	0.00	0	0.00	213	0.67	31,945
T5248	2-13b(9)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0258	2-13c(9)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0268	2-13d(9)	258	0.81	43	0.13	215	0.67	0	0.00	31,945
T0249	2-13a(10)	213	0.67	0	0.00	0	0.00	213	0.67	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T5249	2-13b(10)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0259	2-13c(10)	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0269	2-13d(10)	256	0.80	41	0.13	215	0.67	0	0.00	31,945
T0300	3-1a	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5301	3-1b, name	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5302	3-1b, city	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5303	3-1b, state	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0304	3-1b, outside U.S.	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0305	3-1c	86	0.27	86	0.27	0	0.00	0	0.00	31,945
T0306	3-1d	81	0.25	81	0.25	0	0.00	0	0.00	31,945
T0307	3-1e, code	284	0.89	284	0.89	0	0.00	0	0.00	31,945
T5307	3-1e, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0308	3-1f	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0309	3-1g, code	233	0.73	233	0.73	0	0.00	0	0.00	31,945
T5309	3-1g, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0310	3-1h	527	1.65	527	1.65	0	0.00	0	0.00	31,945
T0311	3-1i, code	593	1.86	593	1.86	0	0.00	0	0.00	31,945
T5311	3-1i, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0312	3-2a	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0313	3-2b	416	1.30	416	1.30	0	0.00	0	0.00	31,945
T0314	3-2c	12	0.04	12	0.04	0	0.00	0	0.00	31,945
T0315	3-2d	23	0.07	23	0.07	0	0.00	0	0.00	31,945
T0316	3-2e, code	125	0.39	125	0.39	0	0.00	0	0.00	31,945
T5316	3-2e, label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0317	3-3 a	11	0.03	0	0.00	0	0.00	11	0.03	31,945
T0318	3-3b(1), code	70	0.22	63	0.20	7	0.02	0	0.00	31,945
T5318	3-3b(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0319	3-3(d)1	134	0.42	122	0.38	12	0.04	0	0.00	31,945
T0320	3-3b(2), code	80	0.25	53	0.17	27	0.08	0	0.00	31,945
T5320	3-3b(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0321	3-3d(2)	408	1.28	368	1.15	40	0.13	0	0.00	31,945
T0322	3-3b(3), code	18	0.06	4	0.01	14	0.04	0	0.00	31,945
T5322	3-3b(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0323	3-3c(3)	79	0.25	4	0.01	75	0.23	0	0.00	31,945
T0324	3-3d(3)	73	0.23	53	0.17	20	0.06	0	0.00	31,945
T0325	3-3b(4), code	15	0.05	6	0.02	9	0.03	0	0.00	31,945
T5325	3-3b(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0326	3-3c(4)	68	0.21	6	0.02	62	0.19	0	0.00	31,945
T0327	3-3d(4)	79	0.25	70	0.22	9	0.03	0	0.00	31,945
T0328	3-3b(5), code	18	0.06	4	0.01	14	0.04	0	0.00	31,945
T5328	3-3b(5), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0329	3-3c(5)	96	0.30	4	0.01	92	0.29	0	0.00	31,945
T0330	3-3d(5)	137	0.43	124	0.39	9	0.03	4	0.01	31,945
T0331	3-3b(6), code	7	0.02	6	0.02	1	0.00	0	0.00	31,945
T5331	3-3b(6), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0332	3-3c(6)	43	0.13	6	0.02	37	0.12	0	0.00	31,945
T0333	3-3d(6)	56	0.18	45	0.14	1	0.00	10	0.03	31,945
T0334	3-3b(7), code	5	0.02	3	0.01	2	0.01	0	0.00	31,945
T5334	3-3b(7), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0335	3-3c(7)	27	0.08	3	0.01	24	0.08	0	0.00	31,945
T0336	3-3d(7)	25	0.08	23	0.07	2	0.01	0	0.00	31,945
T0337	3-4	214	0.67	214	0.67	0	0.00	0	0.00	31,945
T0338	3-4, how many	459	1.44	412	1.29	47	0.15	0	0.00	31,945
T0339	3-5	282	0.88	261	0.82	21	0.07	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0340	3-6a	375	1.17	375	1.17	0	0.00	0	0.00	31,945
T0341	3-6b	445	1.39	445	1.39	0	0.00	0	0.00	31,945
T0342	3-6c	485	1.52	485	1.52	0	0.00	0	0.00	31,945
T0343	3-6d	596	1.87	596	1.87	0	0.00	0	0.00	31,945
T0344	3-6e	552	1.73	552	1.73	0	0.00	0	0.00	31,945
T0345	3-6f	338	1.06	338	1.06	0	0.00	0	0.00	31,945
T0346	3-6g	340	1.06	340	1.06	0	0.00	0	0.00	31,945
T0347	3-7a	176	0.55	176	0.55	0	0.00	0	0.00	31,945
T0348	3-7b	302	0.95	286	0.90	16	0.05	0	0.00	31,945
T0349	3-7c	344	1.08	315	0.99	29	0.09	0	0.00	31,945
T0400	4-1	318	1.00	318	1.00	0	0.00	0	0.00	31,945
T0401	4-2a	344	1.08	344	1.08	0	0.00	0	0.00	31,945
T0402	4-2b(1), code	898	2.81	898	2.81	0	0.00	0	0.00	31,945
T5402	4-2b(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0403	4-2b(2), K-5	2,333	7.30	2,333	7.30	0	0.00	0	0.00	31,945
T0404	4-2b(2), 6-8	2,333	7.30	2,333	7.30	0	0.00	0	0.00	31,945
T0405	4-2b(2), 9-12	2,334	7.31	2,334	7.31	0	0.00	0	0.00	31,945
T0406	4-2c	228	0.71	228	0.71	0	0.00	0	0.00	31,945
T0407	4-2d(1), code	767	2.40	767	2.40	0	0.00	0	0.00	31,945
T5407	4-2d(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0408	4-2d(1), K-5	1,555	4.87	1,555	4.87	0	0.00	0	0.00	31,945
T0409	4-2d(1), 6-8	1,555	4.87	1,555	4.87	0	0.00	0	0.00	31,945
T0410	4-2d(1), 9-12	1,555	4.87	1,555	4.87	0	0.00	0	0.00	31,945
T0411	4-2d(2), code	45	0.14	45	0.14	0	0.00	0	0.00	31,945
T5411	4-2d(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0412	4-2d(2), K-5	284	0.89	284	0.89	0	0.00	0	0.00	31,945
T0413	4-2d(2), 6-8	284	0.89	284	0.89	0	0.00	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0414	4-2d(2), 9-12	284	0.89	284	0.89	0	0.00	0	0.00	31,945
T0415	4-2d(3), code	18	0.06	18	0.06	0	0.00	0	0.00	31,945
T5415	4-2d(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0416	4-2d(3), K-5	168	0.53	168	0.53	0	0.00	0	0.00	31,945
T0417	4-2d(3), 6-8	168	0.53	168	0.53	0	0.00	0	0.00	31,945
T0418	4-2d(3), 9-12	168	0.53	168	0.53	0	0.00	0	0.00	31,945
T0419	4-2d(4), code	15	0.05	15	0.05	0	0.00	0	0.00	31,945
T5419	4-2d(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0420	4-2d(4), K-5	91	0.28	91	0.28	0	0.00	0	0.00	31,945
T0421	4-2d(4), 6-8	91	0.28	91	0.28	0	0.00	0	0.00	31,945
T0422	4-2d(4), 9-12	91	0.28	91	0.28	0	0.00	0	0.00	31,945
T0423	4-3a	220	0.69	220	0.69	0	0.00	0	0.00	31,945
T0424	4-3b	380	1.19	378	1.18	2	0.01	0	0.00	31,945
T0425	4-3c(1), code	713	2.23	713	2.23	0	0.00	0	0.00	31,945
T5425	4-3c(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0426	4-3c(2), K-5	1,299	4.07	1,299	4.07	0	0.00	0	0.00	31,945
T0427	4-3c(2), 6-8	1,299	4.07	1,299	4.07	0	0.00	0	0.00	31,945
T0428	4-3c(2), 9-12	1,299	4.07	1,299	4.07	0	0.00	0	0.00	31,945
T0429	4-3d	34	0.11	34	0.11	0	0.00	0	0.00	31,945
T0430	4-3e(1), code	248	0.78	248	0.78	0	0.00	0	0.00	31,945
T5430	4-3e(1), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0431	4-3e(1), K-5	360	1.13	360	1.13	0	0.00	0	0.00	31,945
T0432	4-3e(1), 6-8	360	1.13	360	1.13	0	0.00	0	0.00	31,945
T0433	4-3e(1), 9-12	360	1.13	360	1.13	0	0.00	0	0.00	31,945
T0434	4-3e(2), code	5	0.02	5	0.02	0	0.00	0	0.00	31,945
T5434	4-3e(2), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0435	4-3e(2), K-5	26	0.08	25	0.08	0	0.00	1	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Donor imputation		Mean or mode imputation		Manual analyst imputation		Total records
				Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	
T0436	4-3e(2), 6-8	26	0.08	25	0.08	0	0.00	1	0.00	31,945
T0437	4-3e(2), 9-12	28	0.09	25	0.08	0	0.00	3	0.01	31,945
T0438	4-3e(3), code	3	0.01	3	0.01	0	0.00	0	0.00	31,945
T5438	4-3e(3), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0439	4-3e(3), K-5	17	0.05	17	0.05	0	0.00	0	0.00	31,945
T0440	4-3e(3), 6-8	17	0.05	17	0.05	0	0.00	0	0.00	31,945
T0441	4-3e(3), 9-12	19	0.06	17	0.05	0	0.00	2	0.01	31,945
T0442	4-3e(4), code	2	0.01	2	0.01	0	0.00	0	0.00	31,945
T5442	4-3e(4), label	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0443	4-3e(4), K-5	9	0.03	9	0.03	0	0.00	0	0.00	31,945
T0444	4-3e(4), 6-8	9	0.03	9	0.03	0	0.00	0	0.00	31,945
T0445	4-3e(4), 9-12	10	0.03	9	0.03	0	0.00	1	0.00	31,945
T1500	5-1	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1501	5-2	163	0.51	158	0.49	5	0.02	0	0.00	31,945
T5502	5-3a	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T5503	5-3b	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T1504	5-3c	278	0.87	188	0.59	90	0.28	0	0.00	31,945
T1505	5-4a	189	0.59	183	0.57	6	0.02	0	0.00	31,945
T1506	5-4b	202	0.63	196	0.61	6	0.02	0	0.00	31,945
T1507	5-4c	226	0.71	220	0.69	6	0.02	0	0.00	31,945
T1508	5-4d	225	0.70	219	0.69	6	0.02	0	0.00	31,945
T1509	5-4e	208	0.65	202	0.63	6	0.02	0	0.00	31,945
T1510	5-4f	234	0.73	228	0.71	6	0.02	0	0.00	31,945
T1511	5-4g	213	0.67	207	0.65	6	0.02	0	0.00	31,945
T1512	5-4h	249	0.78	243	0.76	6	0.02	0	0.00	31,945
T1513	5-4i	210	0.66	204	0.64	6	0.02	0	0.00	31,945
T1514	5-4j	203	0.64	197	0.62	6	0.02	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T1515	5-5	208	0.65	202	0.63	6	0.02	0	0.00	31,945
T1516	5-6a	192	0.60	186	0.58	6	0.02	0	0.00	31,945
T1517	5-6b	192	0.60	186	0.58	6	0.02	0	0.00	31,945
T1518	5-6c	193	0.60	187	0.59	6	0.02	0	0.00	31,945
T1519	5-6d	192	0.60	186	0.58	6	0.02	0	0.00	31,945
T1520	5-6e	192	0.60	186	0.58	6	0.02	0	0.00	31,945
T1521	5-6f	194	0.61	188	0.59	6	0.02	0	0.00	31,945
T1522	5-6g	192	0.60	186	0.58	6	0.02	0	0.00	31,945
T1523	5-7a	197	0.62	191	0.60	6	0.02	0	0.00	31,945
T1524	5-7b	207	0.65	201	0.63	6	0.02	0	0.00	31,945
T1525	5-7c	211	0.66	202	0.63	9	0.03	0	0.00	31,945
T1526	5-8a	213	0.67	203	0.64	10	0.03	0	0.00	31,945
T1527	5-8b	216	0.68	206	0.64	10	0.03	0	0.00	31,945
T1528	5-8c	216	0.68	204	0.64	12	0.04	0	0.00	31,945
T1529	5-8d	215	0.67	204	0.64	11	0.03	0	0.00	31,945
T1530	5-9	208	0.65	198	0.62	10	0.03	0	0.00	31,945
T1600	6-1	1,373	4.30	1,338	4.19	2	0.01	33	0.10	31,945
T1601	6-2	1,221	3.82	1,174	3.68	39	0.12	8	0.03	31,945
T1602	6-3	2,473	7.74	2,440	7.64	13	0.04	20	0.06	31,945
T1603	6-4a	467	1.46	467	1.46	0	0.00	0	0.00	31,945
T1604	6-4b	482	1.51	482	1.51	0	0.00	0	0.00	31,945
T1605	6-4c	487	1.52	487	1.52	0	0.00	0	0.00	31,945
T1606	6-4d	493	1.54	493	1.54	0	0.00	0	0.00	31,945
T1607	6-4e	512	1.60	512	1.60	0	0.00	0	0.00	31,945
T1608	6-4f	474	1.48	474	1.48	0	0.00	0	0.00	31,945
T1609	6-5	651	2.04	651	2.04	0	0.00	0	0.00	31,945
T1700	7-1a	680	2.13	680	2.13	0	0.00	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T1701	7-1a	857	2.68	857	2.68	0	0.00	0	0.00	31,945
T1702	7-1c	771	2.41	771	2.41	0	0.00	0	0.00	31,945
T1703	7-1d	836	2.62	836	2.62	0	0.00	0	0.00	31,945
T1704	7-1e	728	2.28	728	2.28	0	0.00	0	0.00	31,945
T1705	7-1f	814	2.55	814	2.55	0	0.00	0	0.00	31,945
T1706	7-1g	700	2.19	700	2.19	0	0.00	0	0.00	31,945
T1707	7-2a	800	2.50	800	2.50	0	0.00	0	0.00	31,945
T1708	7-2b	830	2.60	830	2.60	0	0.00	0	0.00	31,945
T1709	7-2c	841	2.63	841	2.63	0	0.00	0	0.00	31,945
T1710	7-2d	923	2.89	923	2.89	0	0.00	0	0.00	31,945
T1711	7-2e	868	2.72	868	2.72	0	0.00	0	0.00	31,945
T1712	7-2f	840	2.63	840	2.63	0	0.00	0	0.00	31,945
T1713	7-3a	706	2.21	706	2.21	0	0.00	0	0.00	31,945
T1714	7-3b	948	2.97	948	2.97	0	0.00	0	0.00	31,945
T1715	7-3c	776	2.43	776	2.43	0	0.00	0	0.00	31,945
T1716	7-3d	788	2.47	788	2.47	0	0.00	0	0.00	31,945
T1717	7-3e	813	2.54	813	2.54	0	0.00	0	0.00	31,945
T1718	7-3f	716	2.24	716	2.24	0	0.00	0	0.00	31,945
T1719	7-3g	780	2.44	780	2.44	0	0.00	0	0.00	31,945
T1720	7-3h	833	2.61	833	2.61	0	0.00	0	0.00	31,945
T1721	7-3i	876	2.74	876	2.74	0	0.00	0	0.00	31,945
T1722	7-3j	877	2.75	877	2.75	0	0.00	0	0.00	31,945
T1723	7-3k	816	2.55	816	2.55	0	0.00	0	0.00	31,945
T1724	7-3l	791	2.48	791	2.48	0	0.00	0	0.00	31,945
T1725	7-3m	853	2.67	853	2.67	0	0.00	0	0.00	31,945
T1726	7-3n	994	3.11	994	3.11	0	0.00	0	0.00	31,945
T1727	7-3o	921	2.88	921	2.88	0	0.00	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T1728	7-3p	955	2.99	955	2.99	0	0.00	0	0.00	31,945
T1729	7-3q	886	2.77	886	2.77	0	0.00	0	0.00	31,945
T1730	7-3r	849	2.66	849	2.66	0	0.00	0	0.00	31,945
T1731	7-4a	749	2.34	749	2.34	0	0.00	0	0.00	31,945
T1732	7-4b	835	2.61	835	2.61	0	0.00	0	0.00	31,945
T1733	7-4c	855	2.68	855	2.68	0	0.00	0	0.00	31,945
T1734	7-4d	873	2.73	873	2.73	0	0.00	0	0.00	31,945
T1735	7-4e	904	2.83	904	2.83	0	0.00	0	0.00	31,945
T1736	7-4f	1,025	3.21	1,025	3.21	0	0.00	0	0.00	31,945
T1737	7-4g	799	2.50	799	2.50	0	0.00	0	0.00	31,945
T1738	7-4h	909	2.85	909	2.85	0	0.00	0	0.00	31,945
T1739	7-4i	790	2.47	790	2.47	0	0.00	0	0.00	31,945
T1740	7-4j	867	2.71	867	2.71	0	0.00	0	0.00	31,945
T1741	7-5a	981	3.07	981	3.07	0	0.00	0	0.00	31,945
T1742	7-5b	874	2.74	874	2.74	0	0.00	0	0.00	31,945
T1743	7-5c	949	2.97	949	2.97	0	0.00	0	0.00	31,945
T1744	7-5d	892	2.79	892	2.79	0	0.00	0	0.00	31,945
T1745	7-5e	929	2.91	929	2.91	0	0.00	0	0.00	31,945
T1746	7-5f	884	2.77	884	2.77	0	0.00	0	0.00	31,945
T1747	7-5g	848	2.65	848	2.65	0	0.00	0	0.00	31,945
T1748	7-6	715	2.24	715	2.24	0	0.00	0	0.00	31,945
T1749	7-7a	714	2.24	714	2.24	0	0.00	0	0.00	31,945
T1750	7-7b	753	2.36	712	2.23	41	0.13	0	0.00	31,945
T1751	7-7c	804	2.52	742	2.32	62	0.19	0	0.00	31,945
T1752	7-8a	965	3.02	965	3.02	0	0.00	0	0.00	31,945
T1753	7-8b	743	2.33	735	2.30	8	0.03	0	0.00	31,945
T1754	7-8c	775	2.43	742	2.32	33	0.10	0	0.00	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0900	8-1a	2,040	6.39	2,040	6.39	0	0.00	0	0.00	31,945
T0901	8-1a, amt	435	1.36	295	0.92	140	0.44	0	0.00	31,945
T0902	8-1a(1)	451	1.41	183	0.57	268	0.84	0	0.00	31,945
T0903	8-1b	2,551	7.99	2,551	7.99	0	0.00	0	0.00	31,945
T0904	8-1b, amt	2,674	8.37	2,558	8.01	116	0.36	0	0.00	31,945
T0905	8-1b(1)	1,862	5.83	1,488	4.66	374	1.17	0	0.00	31,945
T0906	8-1c	1,575	4.93	1,575	4.93	0	0.00	0	0.00	31,945
T0907	8-1c, amt	1,827	5.72	1,615	5.06	212	0.66	0	0.00	31,945
T0908	8-2	3,420	10.71	3,420	10.71	0	0.00	0	0.00	31,945
T0909	8-3	2,300	7.20	2,300	7.20	0	0.00	0	0.00	31,945
T0910	8-4	1,103	3.45	1,103	3.45	0	0.00	0	0.00	31,945
T0911	8-4, amt	761	2.38	622	1.95	139	0.44	0	0.00	31,945
T0912	8-5	1,262	3.95	1,262	3.95	0	0.00	0	0.00	31,945
T0913	8-5, amt	207	0.65	125	0.39	82	0.26	0	0.00	31,945
T0914	8-6	1,236	3.87	1,236	3.87	0	0.00	0	0.00	31,945
T0915	8-6, amt	193	0.60	132	0.41	61	0.19	0	0.00	31,945
T0916	8-7 a	1,770	5.54	1,770	5.54	0	0.00	0	0.00	31,945
T0917	8-7 a, amt	1,770	5.54	1,204	3.77	566	1.77	0	0.00	31,945
T0918	8-7 b	1,770	5.54	1,756	5.50	14	0.04	0	0.00	31,945
T0919	8-8	1,244	3.89	1,244	3.89	0	0.00	0	0.00	31,945
T0920	8-8, amt	235	0.74	22	0.07	213	0.67	0	0.00	31,945
T0921	8-9	1,092	3.42	1,092	3.42	0	0.00	0	0.00	31,945
T0922	8-10 a	1,316	4.12	1,316	4.12	0	0.00	0	0.00	31,945
T0923	8-10 b	1,356	4.24	1,333	4.17	23	0.07	0	0.00	31,945
T0924	8-11	0	0.00	0	0.00	0	0.00	0	0.00	31,945
T0925	8-12 a	1,006	3.15	1,006	3.15	0	0.00	0	0.00	31,945
T0926	8-12 b	1,078	3.37	1,003	3.14	69	0.22	6	0.02	31,945

See notes at end of table.

Table J-3. Number of changes and percentage of records affected during donor, mean or mode, or manual analyst imputation of the public school teacher, including public charter school teacher, data file, by variable: 2015–16—Continued

				Donor imputation		Mean or mode imputation		Manual analyst imputation		
Variable	Item number	Total number of imputation changes	Percent of records affected by imputation	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Number of changes	Percent of records affected	Total records
T0927	8-12c	1,088	3.41	1,073	3.36	15	0.05	0	0.00	31,945
T0927	8-12 c	1,013	3.17	1,013	3.17	0	0.00	0	0.00	31,945
T0928	8-13	1,474	4.61	1,474	4.61	0	0.00	0	0.00	31,945
T0929	8-14, White	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0930	8-14, Black	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0931	8-14, Asian	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0932	8-14, Pac Islander	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0933	8-14, Am Indian	120	0.38	109	0.34	2	0.01	9	0.03	31,945
T0934	8-15	1,088	3.41	1,073	3.36	15	0.05	0	0.00	31,945
T0927	8-12 c	1,013	3.17	1,013	3.17	0	0.00	0	0.00	31,945
T0928	8-13	1,474	4.61	1,474	4.61	0	0.00	0	0.00	31,945
T0929	8-14, White	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0930	8-14, Black	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945
T0931	8-14, Asian	1,475	4.62	1,475	4.62	0	0.00	0	0.00	31,945

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Teacher Restricted Use Data File,” 2015–16.

Appendix K. Extant Data Procedures for the 2015–16 NTPS

The tables in this index show the number of times school units were collapsed into a single school and contain the variables added to the 2015–16 National Teacher and Principal Survey (NTPS) from the Common Core of Data (CCD), *EDFacts*, and the Civil Rights Data Collection (CRDC). These outside data sources are referred to collectively as extant data. The variables are listed by data source and type of variable—student count/percentage or school-based measure. The tables are as follows:

Table	Page
K-1. Collapsed schools, by number of school units collapsed, data file: 2015–16.....	K-2
K-2. Extant data variable descriptions, by source and variable type, data file: 2015–16	K-4

Addition of Extant Data to the 2015–16 NTPS

New to the 2015–16 cycle of NTPS, the National Center for Education Statistics (NCES) chose to add data to the NTPS dataset from other educational surveys also collected under the purview of the U.S. Department of Education that are available to the public. The main purpose was to showcase various school-level attributes from multiple sources all on one data file for the convenience of the analyst. The ability to provide various school information without having to place the questions on NTPS questionnaires meant that overall burden on respondents was reduced. These outside or “extant” sources are the CRDC, *EDFacts*, and CCD. Certain school-level traits were obtained from a subset of the variables contained on these extant files. Variables that were copied directly from the extant sources with no change other than required collapsing and renaming were called “derived” variables. The derived variables are made up solely of the CRDC and *EDFacts* variables used on the 2015–16 NTPS. Variables that were copied to NTPS but then manipulated in some manner mathematically or used in combination with other variables were referred to as “created” variables. These extant and created variables include CCD variables updated on the NTPS file as well as CCD variables that were transformed into additional analytic variables. A full list and description of the extant variables used can be found in appendix L, which contains all of the derived and created variables.

Civil Rights Data Collection

The CRDC has been conducted on behalf of the U.S. Department of Education since 1968. As the name indicates, a major function of the CRDC is to provide data on vital education and civil rights issues for American public schools. For NTPS, six variables were added from the 2013–14 CRDC. These variables provided information pertaining to alternative schools, magnet programs, gifted/talented programs, and Advanced Placement (AP) or International Baccalaureate (IB) participation. For more information about CRDC, please visit the website below:

<https://www2.ed.gov/about/offices/list/ocr/data.html?src=rt>.

EDFacts

EDFacts is an initiative put forth by the U.S. Department of Education that seeks to merge performance data from state education agencies with other sources such as financial grant information. Having access to the state-level school and district data on a national level not only reduces respondent burden but also allows these open, robust data sources to be placed at the forefront for any educational policymaking, whether that be at the federal, state, or local level. One major area *EDFacts* specializes in is with graduation rates across different demographic characteristics such as race, ethnicity, socioeconomic status, and limited English proficiency. Overall rates as well as the cohort sizes were copied from the 2014–15 *EDFacts* to NTPS. For more information about *EDFacts*, please visit the website below:

<https://www2.ed.gov/about/inits/ed/edfacts/index.html>.

Common Core of Data

CCD is an annual set of five surveys distributed to state and local agencies that in turn collect data from approximately 100,000 schools and 18,000 school districts. CCD has been utilized in the past on Schools and Staffing Survey (SASS) administrations, and this survey cycle was no different. While previously used primarily as a source for the frame and occasionally as a reference on data processing, this cycle brought about using additional CCD variables as a replacement for a set of questions on NTPS. The 2015–16 NTPS was designed to omit asking for the counts of students by race, which had been asked on previous SASS collections, at the school level because these data exist on CCD. Comprehensive male, female, prekindergarten, and race counts were added from the 2014–15 CCD to NTPS. These race counts were then combined with K–12 and equivalent ungraded school enrollment counts. The end result on the NTPS final files were variables that estimated the percentage of students at a particular school that were male, female, or of a particular race or ethnicity. For more information about CCD, please visit the website below:

<https://nces.ed.gov/ccd/aboutCCD.asp>.

Extant Data Coding for NTPS “Collapsed Schools”

As noted in the “School Collapsing” section of chapter 4, NTPS Frame Creation and Sample Selection Procedures, there are NTPS sampled schools that include multiple schools from the CCD frame that are merged for NTPS. As noted in the prior section, these schools are merged because they are reported as multiple schools for administrative reasons, but are co-located and view themselves as operating as a single school. In previous collections, the sending of multiple surveys to this group of schools created reporting problems and resulted in respondent error and nonresponse. For the 2015–16 NTPS, there were 324 occurrences of collapsing multiple school units into one school. Table L-1 shows the distribution of the collapsing.

Table K-1. Collapsed schools, by number of school units collapsed, data file: 2015–16

School units	Frequency	Percent
2	224	69.1
3	98	30.2
4	2	0.6
Total	324	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Frame Data File” before, during, and after frame creation activities, 2015–16.

The addition of extant data from sources other than the NTPS survey requires that these NTPS collapsed schools obtain values from the external data that match the collapsed schools rather than the individual source schools. This section identifies the methods for collapsing data from the uncollapsed school units and assigning missing value codes from the extant sources for this group of schools. As described in the earlier section, the most common reason for school collapsing was the co-location of an elementary, middle, and high school within the same building or cluster of buildings. As such, these schools may be administered by a single principal and/or identify as a K–12 school even though the state may report the school as separate school unit entities to CCD.

Three types of variables that were included in the extant data process required alternate methods of creating for merged schools. The three types of variables include the following:

- **School-Level Dependent Variables**—This set of variables included those variables that identified school participation or student participation rates for programs that are grade-level, and consequently school-level, dependent. AP or IB programs, for example, are high school-level programs. In these instances, if the program was applicable to students at a subset of schools, the following rules were followed:

- Program Present—For variables measuring the presence of a program, if any of the schools included in the NTPS collapsed school had the program of interest, the collapsed school was reported as having the program. The assumption was that the program existed for the relevant grades of the collapsed school.
- Program Participation Count—The student counts for participation for any of the schools included in the NTPS collapsed schools were summed to provide a participation count for programs. Subschools with missing, zero, or not applicable counts for programs that do not exist at a school level were counted as zeros when summing across the collapsed schools to get the count.
- Program Participation Rate—Student participation rates were provided for 12th-grade graduation cohorts for a number of the *EDFacts* items. This *EDFacts* measure was calculated using a methodology that could not be replicated with available NTPS or CCD data; however, none of the collapsed schools with *EDFacts* data available included multiple schools with high school-level grades, so the rates from the high school member of the collapsed school were presented as the rate for the collapsed school.
- Student Counts—This set of variables included the CCD variables for student enrollment, student race/ethnicity, and student gender. These variables were included on the sample file using the 2013–14 CCD but were updated using the 2014–15 CCD file for the final NTPS file.
 - Enrollment Counts—The enrollment counts for the appropriate NTPS grade levels were obtained from each school included in the collapsed school and summed to provide the overall enrollment and enrollment by gender.
 - Race/Ethnicity—As with the enrollment counts, the race/ethnicity counts from the component schools are summed within each category to provide race and ethnicity counts for the resulting collapsed school.
 - Note—The CCD enrollment, gender, and race/ethnicity counts are processed using the same consistency and edit specs used on the previous version of these data.

The list of variables in table L-2 identifies each variable by source and includes a column identifying whether the variable was one that was school-level dependent or if it was a student count.

Table K-2. Extant data variable descriptions, by source and variable type, data file: 2015–16

Source	Variable name	Variable type	Variable description
CCD	PCT_MALE	Student count, percentage	Estimated percentage of students who are male
CCD	PCT_FEMALE	Student count, percentage	Estimated percentage of students who are female
CCD	PCT_ASIAN	Student count, percentage	Estimated percentage of students who are Asian (not of Hispanic or Latino origin)
CCD	PCT_AIAN	Student count, percentage	Estimated percentage of students who are American Indian/ Alaskan Native (not of Hispanic or Latino origin)
CCD	PCT_HNPACI	Student count, percentage	Estimated percentage of students who are Hawaiian Native/ Pacific Islander (not of Hispanic or Latino origin)
CCD	PCT_HISP	Student count, percentage	Estimated percentage of students who are of Hispanic or Latino origin
CCD	PCT_BLACK	Student count, percentage	Estimated percentage of students who are Black (not of Hispanic or Latino origin)
CCD	PCT_MULTI	Student count, percentage	Estimated percentage of students who are of Two or more races (not of Hispanic or Latino origin)
CCD	PCT_WHITE	Student count, percentage	Estimated percentage of students who are White (not of Hispanic or Latino origin)
CCD	PCT_NONWHITE	Student count, percentage	Estimated percentage of students in school who are of races other than White
EDFacts	ACGRADRATE	Student count, percentage	Adjusted cohort graduation rate for the 2014–15 school year
EDFacts	ACGR_COHORT	Student count	Total number of students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_AIAN	Student count, percentage	Rate of American Indian/Alaska Native (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_AIAN	Student count	Total number of American Indian/Alaska Native (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_ASIANPI	Student count, percentage	Rate of Asian/Pacific Islander (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_ASIANPI	Student count	Total number of Asian/Pacific Islander (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_BLACK	Student count, percentage	Rate of Black (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_BLACK	Student count	Total number of Black (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_HISP	Student count, percentage	Rate of Hispanic students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_HISP	Student count	Total number of Hispanic students within the 4-year adjusted cohort for the 2014–15 school year

See note at the end of table.

Table K-2. Extant data variable descriptions, by source and variable type, data file: 2015–16—Continued

Source	Variable name	Variable type	Variable description
EDFacts	ACGR_MULTI	Student count, percentage	Rate of students of Two or more races (non-Hispanic) who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_MULTI	Student count	Total number of students of Two or more races (non-Hispanic) within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_WHITE	Student count, percentage	Rate of White (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_WHITE	Student count	Total number of White (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_DISABL	Student count, percentage	Rate of students with disabilities who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_DISABL	Student count	Total number of students with disabilities within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_DISADV	Student count, percentage	Rate of economically disadvantaged students who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_DISADV	Student count	Total number of economically disadvantaged students within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	ACGR_LEP	Student count, percentage	Rate of students with limited English proficiency who graduated within the 4-year adjusted cohort for the 2014–15 school year
EDFacts	COHORT_LEP	School-level	Total number of students with limited English proficiency within the 4-year adjusted cohort for the 2014–15 school year
CRDC	DISCLPLN_FL	School-level	Flag indicating an alternative school designed to meet the needs of students with discipline problems
CRDC	MAGNET_FL	School-level	Flag indicating whether school is a magnet or operates magnet program
CRDC	SCHWMAG_FL	School-level	Flag indicating a schoolwide magnet program
CRDC	GIFTED_FL	School-level	Flag indicating whether school has students enrolled in any gifted/talented programs
CRDC	IB_FL	School-level	Flag indicating whether school has students enrolled in the International Baccalaureate Diploma Programme
CRCD	AP_FL	School-level	Flag indicating whether school has students enrolled in Advanced Placement courses

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Principal Restricted Use Data File, Public School Restricted Use Data File, and Public School Teacher Restricted Use Data File,” 2015–16.

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Appendix L. Description of Frame, Created, and Derived Variables

This appendix contains the variable name, a short description of the variable, and a long description of the variable, which includes the definition and code. Frame variables indicate that the variable came from the sampling frame or process. Created variables indicate that questionnaire data were used to create the variable. Derived variables historically were referred to as “Frame and Created” variables.

Table	Page
L-1 List of frame variables	L-2
L-2. List of created variables	L-14
L-3. List of derived variables.....	L-38

Table L-1. List of frame variables

Variable name	Short description	Long description
CNTLNUMS	School control number	School control number. Use this number to merge school, principal, and teacher records. Public school control number. Digits 1–2: American National Standards Institute (ANSI) state code. Digits 3–5: District number (101–899—All public schools except public schools with no districts, state-run schools, one school districts, and some charter schools; 901–999—Public schools with no districts, state-run schools, one school districts, and some charter schools). Digit 6: Type of school (1 = Regular public school; 2 = DoD (Department of Defense) school; 7 = One school districts; 8 = Charter school operated by regular district; 9 = Charter school operated by an entity other than a school district; 0 = Independent charter school). Digits 7–9: School number (101–999—Schools are numbered sequentially starting with 101 within each state and each district). Digit 10: Space holder (0 for all schools). Digit 11: Questionnaire identifier (3 = Public school; 7 = Public school with district items). Digit 12: Check digit—Computed from other parts of control number.
CNTLNUMP	Principal control number	Principal control number. Digits 1–2: State ANSI code. Digits 3–5: District number (101–899—All public schools except public schools with no districts, state-run schools, one school districts, and some charter schools; 901–999—Public schools with no districts, state-run schools, one school districts, and some charter schools). Digit 6: Type of school (1 = Regular public school; 2 = DoD school; 7 = One school districts; 8 = Charter school operated by regular district; 9 = Charter school operated by an entity other than a school district; 0 = Independent charter school). Digits 7–9: School number (101–999—Schools are numbered sequentially starting with 101 within each state and each district). Digit 10: Space holder (0 for all schools). Digit 11: Questionnaire identifier (2 = Public school principal). Digit 12: Check digit—Computed from other parts of control number.
CNTLNUMT	Teacher control number	Teacher control number. Digits 1–2: State ANSI code. Digits 3–5: District number (101–899—All public schools except public schools with no districts, state-run schools, one school districts, and some charter schools; 901–999—Public schools with no districts, state-run schools, one school districts, and some charter schools). Digit 6: (1 = Regular public school; 2 = DoD school; 7 = One school districts; 8 = Charter school operated by a regular district; 9 = Charter school operated by an entity other than a school district; 0 = Independent charter school). Digits 7–9: School number (101–999—Schools are numbered sequentially starting with 101 within each state and each district). Digit 10: Space holder (0 for all schools). Digits 11–13: Teacher number (Teachers are numbered sequentially within each school beginning at 101). Digit 14: Check digit—Computed from other parts of control number.
SC_NCSID	Unique school ID assigned to each school by NCES	The National Center for Education Statistics (NCES) school identification number. Origin: NCESSCH from the 2014–15 Common Core of Data (CCD). For public schools: Digits 1–2: ANSI state code. Digits 3–7: District code. Digits 8–12: School code. For a complete list of ANSI codes, reference https://www.census.gov/geo/reference/ansi_statetables.html .
CSCCDID1	CCD ID of 1st school collapsed	CCD ID of first school when multiple CCD schools were collapsed into single (parent) school per the National Teacher and Principal Survey (NTPS) school definition. Always filled for a school that has other schools collapsed into it. Origin: CSCCDID1 from NTPS sampling frame. Applied to public schools only. Parent school record is identified with SC_NCSID.

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
CSCCDID2	CCD ID of 2nd school collapsed	CCD ID of second school when multiple CCD schools were collapsed into single (parent) school per NTPS school definition. Always filled for a school that has other schools collapsed into it. Origin: CSCCDID2 from NTPS sampling frame. Applied to public schools only. Parent school record is identified with SC NCSID.
CSCCDID3	CCD ID of 3rd school collapsed	CCD ID of third school when multiple CCD schools were collapsed into single (parent) school per NTPS school definition. Always filled for a school that has other schools collapsed into it. Origin: CSCCDID3 from NTPS sampling frame. Applied to public schools only. Parent school record is identified with SC NCSID.
CSCCDID4	CCD ID of 4th school collapsed	CCD ID of fourth school when multiple CCD schools were collapsed into single (parent) school per NTPS school definition. Always filled for a school that has other schools collapsed into it. Origin: CSCCDID4 from NTPS sampling frame. Applied to public schools only. Parent school record is identified with SC NCSID.
CSCCDID5	CCD ID of 5th school collapsed	CCD ID of fifth school when multiple CCD schools were collapsed into single (parent) school per NTPS school definition. Always filled for a school that has other schools collapsed into it. Origin: CSCCDID5 from NTPS sampling frame. Applied to public schools only. Parent school record is identified with SC NCSID.
SCHCOUNT	Total number of schools collapsed under a single school ID	<p>Total number of CCD schools collapsed under a single NTPS school ID (CNTLNUMS). Coded as follows:</p> <pre> count = 0; array c (*) CSCCDID1-CSCCDID5; do i = 1 to dim(c); if c(i) in ('M','N','-8') then count+1; end; drop i; if COUNT = 5 then SCHCOUNT = 0; else if COUNT = 4 then SCHCOUNT = 1; else if COUNT = 3 then SCHCOUNT = 2; else if COUNT = 2 then SCHCOUNT = 3; else if COUNT = 1 then SCHCOUNT = 4; else if COUNT = 0 then SCHCOUNT = 5; </pre>
SURVEY	Questionnaire name	Name of questionnaire. Categories include: 1=School Questionnaire (NTPS-3), 2=Principal Questionnaire (NTPS-2), 3=Teacher Questionnaire (NTPS-4). Coded as follows: survey=1;
RECSRCE	Source of school record	Source of school record. Origin: RECSRCE from NTPS sampling frame. Categories include: 1 = School sampled from 2013–14 CCD Public School Universe file; 2 = School sampled from 2013–14 CCD Local Education Agency (LEA) file (school originally misclassified as a District/LEA). Coded as follows: if RECSRCE = 4 then RECSRCE = 1; if RECSRCE = 5 then RECSRCE = 2;

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
REGION	Census region, based on ANSI state code	U.S. Census Bureau (Census) Region where district is located. Origin: REGION from the NTPS sampling frame. Categories include: 1 = Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. 2 = Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin. 3 = South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia. 4 = West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming. Coded as follows: if state in ('09' '23' '25' '33' '44' '50' '34' '36' '42') then region = 1; if state in ('17' '18' '26' '39' '55' '19' '20' '27' '29' '31' '38' '46') then region = 2; if state in ('10' '11' '12' '13' '24' '37' '45' '51' '54' '01' '21' '28' '47' '05' '22' '40' '48') then region = 3; if state in ('04' '08' '16' '30' '32' '35' '49' '56' '02' '06' '15' '41' '53') then region = 4;
STATE	ANSI state code	American National Standards Institute (ANSI) state code that identifies the state where the school or district is located. Origin: STATE on the NTPS sampling frame. DoD school locations are based on the physical location of the school. For a complete list of ANSI codes, reference https://www.census.gov/geo/reference/ansi_statetables.html . 01 = Alabama; 02 = Alaska; 04 = Arizona; 05 = Arkansas; 06 = California; 08 = Colorado; 09 = Connecticut; 10 = Delaware; 11 = District of Columbia; 12 = Florida; 13 = Georgia; 15 = Hawaii; 16 = Idaho; 17 = Illinois; 18 = Indiana; 19 = Iowa; 20 = Kansas; 21 = Kentucky; 22 = Louisiana; 23 = Maine; 24 = Maryland; 25 = Massachusetts; 26 = Michigan; 27 = Minnesota; 28 = Mississippi; 29 = Missouri; 30 = Montana; 31 = Nebraska; 32 = Nevada; 33 = New Hampshire; 34 = New Jersey; 35 = New Mexico; 36 = New York; 37 = North Carolina; 38 = North Dakota; 39 = Ohio; 40 = Oklahoma; 41 = Oregon; 42 = Pennsylvania; 44 = Rhode Island; 45 = South Carolina; 46 = South Dakota; 47 = Tennessee; 48 = Texas; 49 = Utah; 50 = Vermont; 51 = Virginia; 53 = Washington; 54 = West Virginia; 55 = Wisconsin; 56 = Wyoming.

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
STAT_ABB	State postal abbreviation	<p>Two-letter state abbreviation that identifies the state where the school or district is located. Recoded from STATE on the NTPS sampling frame. Categories include: 'AL' = Alabama; 'AK' = Alaska; 'AZ' = Arizona; 'AR' = Arkansas; 'CA' = California; 'CO' = Colorado; 'CT' = Connecticut; 'DE' = Delaware; 'DC' = District of Columbia; 'FL' = Florida; 'GA' = Georgia; 'HI' = Hawaii; 'ID' = Idaho; 'IL' = Illinois; 'IN' = Indiana; 'IA' = Iowa; 'KS' = Kansas; 'KY' = Kentucky; 'LA' = Louisiana; 'ME' = Maine; 'MD' = Maryland; 'MA' = Massachusetts; 'MI' = Michigan; 'MN' = Minnesota; 'MS' = Mississippi; 'MO' = Missouri; 'MT' = Montana; 'NE' = Nebraska; 'NV' = Nevada; 'NH' = New Hampshire; 'NJ' = New Jersey; 'NM' = New Mexico; 'NY' = New York; 'NC' = North Carolina; 'ND' = North Dakota; 'OH' = Ohio; 'OK' = Oklahoma; 'OR' = Oregon; 'PA' = Pennsylvania; 'RI' = Rhode Island; 'SC' = South Carolina; 'SD' = South Dakota; 'TN' = Tennessee; 'TX' = Texas; 'UT' = Utah; 'VT' = Vermont; 'VA' = Virginia; 'WA' = Washington; 'WV' = West Virginia; 'WI' = Wisconsin; 'WY' = Wyoming. Coded as follows:</p> <p>If state = '01' then stat_abb = 'AL'; if state = '02' then stat_abb = 'AK'; if state = '04' then stat_abb = 'AZ'; if state = '05' then stat_abb = 'AR'; if state = '06' then stat_abb = 'CA'; if state = '08' then stat_abb = 'CO'; if state = '09' then stat_abb = 'CT'; if state = '10' then stat_abb = 'DE'; if state = '11' then stat_abb = 'DC'; if state = '12' then stat_abb = 'FL'; if state = '13' then stat_abb = 'GA'; if state = '15' then stat_abb = 'HI'; if state = '16' then stat_abb = 'ID'; if state = '17' then stat_abb = 'IL'; if state = '18' then stat_abb = 'IN'; if state = '19' then stat_abb = 'IA'; if state = '20' then stat_abb = 'KS'; if state = '21' then stat_abb = 'KY'; if state = '22' then stat_abb = 'LA'; if state = '23' then stat_abb = 'ME'; if state = '24' then stat_abb = 'MD'; if state = '25' then stat_abb = 'MA'; if state = '26' then stat_abb = 'MI'; if state = '27' then stat_abb = 'MN'; if state = '28' then stat_abb = 'MS'; if state = '29' then stat_abb = 'MO'; if state = '30' then stat_abb = 'MT'; if state = '31' then stat_abb = 'NE'; if state = '32' then stat_abb = 'NV'; if state = '33' then stat_abb = 'NH'; if state = '34' then stat_abb = 'NJ'; if state = '35' then stat_abb = 'NM'; if state = '36' then stat_abb = 'NY'; if state = '37' then stat_abb = 'NC'; if state = '38' then stat_abb = 'ND'; if state = '39' then stat_abb = 'OH'; if state = '40' then stat_abb = 'OK'; if state = '41' then stat_abb = 'OR'; if state = '42' then stat_abb = 'PA'; if state = '44' then stat_abb = 'RI'; if state = '45' then stat_abb = 'SC'; if state = '46' then stat_abb = 'SD'; if state = '47' then stat_abb = 'TN'; if state = '48' then stat_abb = 'TX'; if state = '49' then stat_abb = 'UT'; if state = '50' then stat_abb = 'VT'; if state = '51' then stat_abb = 'VA'; if state = '53' then stat_abb = 'WA'; if state = '54' then stat_abb = 'WV'; if state = '55' then stat_abb = 'WI'; if state = '56' then stat_abb = 'WY';</p>

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
NUMSTATE	Numeric recode of the state variable	<p>Numeric recode of the state where the school or district is located. Identical to STATE and STAT_ABB. Origin: STATE on the NTPS sampling frame. Categories include: 1 = Alabama; 2 = Alaska; 3 = Arizona; 4 = Arkansas; 5 = California; 6 = Colorado; 7 = Connecticut; 8 = Delaware; 9 = District of Columbia; 10 = Florida; 11 = Georgia; 12 = Hawaii; 13 = Idaho; 14 = Illinois; 15 = Indiana; 16 = Iowa; 17 = Kansas; 18 = Kentucky; 19 = Louisiana; 20 = Maine; 21 = Maryland; 22 = Massachusetts; 23 = Michigan; 24 = Minnesota; 25 = Mississippi; 26 = Missouri; 27 = Montana; 28 = Nebraska; 29 = Nevada; 30 = New Hampshire; 31 = New Jersey; 32 = New Mexico; 33 = New York; 34 = North Carolina; 35 = North Dakota; 36 = Ohio; 37 = Oklahoma; 38 = Oregon; 39 = Pennsylvania; 40 = Rhode Island; 41 = South Carolina; 42 = South Dakota; 43 = Tennessee; 44 = Texas; 45 = Utah; 46 = Vermont; 47 = Virginia; 48 = Washington; 49 = West Virginia; 50 = Wisconsin; 51 = Wyoming. Coded as follows:</p> <p>if state = '01' then numstate = 1; if state = '02' then numstate = 2; if state = '04' then numstate = 3; if state = '05' then numstate = 4; if state = '06' then numstate = 5; if state = '08' then numstate = 6; if state = '09' then numstate = 7; if state = '10' then numstate = 8; if state = '11' then numstate = 9; if state = '12' then numstate = 10; if state = '13' then numstate = 11; if state = '15' then numstate = 12; if state = '16' then numstate = 13; if state = '17' then numstate = 14; if state = '18' then numstate = 15; if state = '19' then numstate = 16; if state = '20' then numstate = 17; if state = '21' then numstate = 18; if state = '22' then numstate = 19; if state = '23' then numstate = 20; if state = '24' then numstate = 21; if state = '25' then numstate = 22; if state = '26' then numstate = 23; if state = '27' then numstate = 24; if state = '28' then numstate = 25; if state = '29' then numstate = 26; if state = '30' then numstate = 27; if state = '31' then numstate = 28; if state = '32' then numstate = 29; if state = '33' then numstate = 30; if state = '34' then numstate = 31; if state = '35' then numstate = 32; if state = '36' then numstate = 33; if state = '37' then numstate = 34; if state = '38' then numstate = 35; if state = '39' then numstate = 36; if state = '40' then numstate = 37; if state = '41' then numstate = 38; if state = '42' then numstate = 39; if state = '44' then numstate = 40; if state = '45' then numstate = 41; if state = '46' then numstate = 42; if state = '47' then numstate = 43; if state = '48' then numstate = 44; if state = '49' then numstate = 45; if state = '50' then numstate = 46; if state = '51' then numstate = 47; if state = '53' then numstate = 48; if state = '54' then numstate = 49; if state = '55' then numstate = 50; if state = '56' then numstate = 51;</p>
SC_ZIP	School physical location (zip code)	Five-digit zip code for the physical location of the school. Origin: SC_ZIP on NTPS sampling frame.

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
SLOCP12	School locale code	<p>The locale code for the school. These codes are updated annually using Census and geographic data. For more information, please see https://nces.ed.gov/programs/edge/docs/NCES_LOCALE_USERSMANUAL_2016012.pdf (NCES 2016-012).</p> <p>Origin: ULOCAL from the 2013–14 CCD Elementary/Secondary Locale Code File. Categories include: 11 = City, Large: Territory inside an urbanized area and inside a principal city with population of 250,000 or more; 12 = City, Midsize: Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000; 13 = City, Small: Territory inside an urbanized area and inside a principal city with population less than 100,000; 21 = Suburb, Large: Territory outside a principal city and inside an urbanized area with population of 250,000 or more; 22 = Suburb, Midsize: Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000; 23 = Suburb, Small: Territory outside a principal city and inside an urbanized area with population less than 100,000; 31 = Town, Fringe: Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area; 32 = Town, Distant: Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area; 33 = Town, Remote: Territory inside an urban cluster that is more than 35 miles from an urbanized area; 41 = Rural, Fringe: Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster; 42 = Rural, Distant: Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster; 43 = Rural, Remote: Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster. Coded as follows:</p> <pre> if locale ne " " then do; if locale = '11' then slocp12 = 11; if locale = '12' then slocp12 = 12; if locale = '13' then slocp12 = 13; if locale = '21' then slocp12 = 21; if locale = '22' then slocp12 = 22; if locale = '23' then slocp12 = 23; if locale = '31' then slocp12 = 31; if locale = '32' then slocp12 = 32; if locale = '33' then slocp12 = 33; if locale = '41' then slocp12 = 41; if locale = '42' then slocp12 = 42; if locale = '43' then slocp12 = 43; end;</pre>

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
URBANS12	Collapsed school locale code	<p>This is a four-level collapse of SLOCP12 (school locale code). Methodology was updated to incorporate Census population and geography information. Categories include: 1 = City, 2 = Suburb, 3 = Town, 4 = Rural. Coded as follows:</p> <pre> if SLOCP12 in (11, 12, 13) then URBANS12 = 1; if SLOCP12 in (21, 22, 23) then URBANS12 = 2; if SLOCP12 in (31, 32, 33) then URBANS12 = 3; if SLOCP12 in (41, 42, 43) then URBANS12 = 4;</pre>
SCWT1FLG	Schoolwide Title I eligibility flag	<p>Schoolwide Title I program eligibility identifier. A program in which all the pupils in a school are designated under appropriate state and federal regulations as being eligible for participation in programs authorized by Title I of Public Law 103-382. Origin: STITLI09 from 2014–15 CCD. Categories include: 1 = School is eligible for schoolwide Title I program; 2 = School is not eligible for schoolwide Title I program; -8 = valid skip; -9 = missing. Coded as follows:</p> <pre> if STITLEI ne " " then do; if STITLEI = '1' then SCHWT1FLG = 1; if STITLEI = '2' then SCHWT1FLG = 2; if STITLEI = 'N' then SCHWT1FLG = -8; if STITLEI = 'M' then SCHWT1FLG = -9; end; else SCHWT1FLG = -9;</pre>

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
PCT_MALE	Estimated percentage of students who are male	<p>Estimated percentage of students in the school who are male, based on data reported in the 2014–15 CCD. Calculated as follows:</p> <pre> denom=0; if AMALF ge 0 and AMALM ge 0 and ASALF ge 0 and ASALM ge 0 and BLALF ge 0 and BLALM ge 0 and HIALF ge 0 and HIALM ge 0 and HPALF ge 0 and HPALM ge 0 and TRALF ge 0 and TRALM ge 0 and WHALF ge 0 and WHALM ge 0 then do; denom=SUM(AMALF, AMALM, ASALF, ASALM, BLALF, BLALM, HIALF, HIALM, HPALF, HPALM, TRALF, TRALM, WHALF, WHALM); if AMPKF ge 0 and AMPKM ge 0 and ASPKF ge 0 and ASPKM ge 0 and BLPKF ge 0 and BLPKM ge 0 and HIPKF ge 0 and HIPKM ge 0 and HPPKF ge 0 and HPPKM ge 0 and TRPKF ge 0 and TRPKM ge 0 and WHPKF ge 0 and WHPKM ge 0 then denom=sum(denom,-AMPKF,-AMPKM, -ASPKF, -ASPKM, -BLPKF, -BLPKM, -HIPKF, -HIPKM, -HPPKF, -HPPKM, -TRPKF, -TRPKM, -WHPKF, -WHPKM); end; if sch_isr = 3 then PCT_MALE = -8; else if denom gt 0 then do; PCT_MALE = int(10e5*SUM(AMALM, ASALM, HIALM, BLALM, WHALM, HPALM, TRALM, - PKMALE)/denom)/10e3; if PCT_MALE lt 0 then PCT_MALE = 0; if PCT_MALE gt 100 then PCT_MALE = 100; end; else PCT_MALE = -9;</pre>
PCT_FEMALE	Estimated percentage of students who are female	<p>Estimated percentage of students in the school who are female, based on data reported in the 2014–15 CCD. Calculated as follows:</p> <pre> if sch_isr = 3 then PCT_FEMALE = -8; else if denom gt 0 then do; PCT_FEMALE = int(10e5*SUM(AMALF, ASALF, HIALF, BLALF, WHALF, HPALF, TRALF, - PKFEM)/denom)/10e3; if PCT_FEMALE lt 0 then PCT_FEMALE = 0; if PCT_FEMALE gt 100 then PCT_FEMALE = 100; end; else PCT_FEMALE = -9;</pre>

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
PCT_ASIAN	Estimated percentage of students who are Asian (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are Asian, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr=3 then PCT_ASIAN = -8; else if ASIAN ge 0 and ASPKM not in (-1,-9) and ASPKF not in (-1,-9) then do; if ASPKM ge 0 and ASPKF ge 0 then PCT_ASIAN=INT(10e5*sum(ASIAN, -ASPKM, -ASPKF)/denom)/10e3; else if ASPKM in (-2,-8) and ASPKF in (-2,-8) then PCT_ASIAN=INT(10e5*ASIAN/denom)/10e3; else if ASPKM in (-2,-8) and ASPKF ge 0 then PCT_ASIAN=INT(10e5*sum(ASIAN, -ASPKF)/denom)/10e3; else if ASPKM ge 0 and ASPKF in (-2,-8) then PCT_ASIAN=INT(10e5*sum(ASIAN, -ASPKM)/denom)/10e3; if PCT_ASIAN not in (-2,-8) then do; if PCT_ASIAN lt 0 then PCT_ASIAN = 0; if PCT_ASIAN gt 100 then PCT_ASIAN = 100; end; end; else PCT_ASIAN = -9;
PCT_AIAN	Estimated percentage of students who are American Indian/Alaskan Native (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are American Indian or Alaskan Native, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr=3 then PCT_AIAN = -8; else if AM ge 0 and AMPKM not in (-1,-9) and AMPKF not in (-1,-9) then do; if AMPKM ge 0 and AMPKF ge 0 then PCT_AIAN=INT(10e5*sum(AM, -AMPKM, -AMPKF)/denom)/10e3; else if AMPKM in (-2,-8) and AMPKF in (-2,-8) then PCT_AIAN = INT(10e5*AM/denom)/10e3; else if AMPKM in (-2,-8) and AMPKF ge 0 then PCT_AIAN=INT(10e5*sum(AM, -AMPKF)/denom)/10e3; else if AMPKM ge 0 and AMPKF in (-2,-8) then PCT_AIAN=INT(10e5*sum(AM, -AMPKM)/denom)/10e3; if PCT_AIAN not in (-2,-8) then do; if PCT_AIAN lt 0 then PCT_AIAN = 0; if PCT_AIAN gt 100 then PCT_AIAN = 100; end; end; else PCT_AIAN = -9;

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
PCT_HNPACI	Estimated percentage of students who are Hawaiian Native/ Pacific Islander (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are Hawaiian Native or Pacific Islander, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr = 3 then PCT_HNPACI = -8; else if PACIFIC ge 0 and HPPKM not in (-1,-9) and HPPKF not in (-1,-9) then do; if HPPKM ge 0 and HPPKF ge 0 then PCT_HNPACI = INT(10e5*sum(PACIFIC, -HPPKM, -HPPKF)/denom)/10e3; else if HPPKM in (-2,-8) and HPPKF in (-2,-8) then PCT_HNPACI = INT(10e5*PACIFIC/denom)/10e3; else if HPPKM in (-2,-8) and HPPKF ge 0 then PCT_HNPACI = INT(10e5*sum(PACIFIC, -HPPKF)/denom)/10e3; else if HPPKM ge 0 and HPPKF in (-2,-8) then PCT_HNPACI = INT(10e5*sum(PACIFIC, -HPPKM)/denom)/10e3; if PCT_HNPACI not in (-2,-8) then do; if PCT_HNPACI lt 0 then PCT_HNPACI = 0; if PCT_HNPACI gt 100 then PCT_HNPACI = 100; end; end; else PCT_HNPACI = -9;
PCT_HISP	Estimated percentage of students who are of Hispanic or Latino origin	Estimated percentage of students in the school who are of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr = 3 then PCT_HISP = -8; else if HISP ge 0 and HIPKM not in (-1,-9) and HIPKF not in (-1,-9) then do; if HIPKM ge 0 and HIPKF ge 0 then PCT_HISP = INT(10e5*sum(of HISP, -HIPKM, -HIPKF)/denom)/10e3; else if HIPKM in (-2,-8) and HIPKF in (-2,-8) then PCT_HISP = INT(10e5*HISP/denom)/10e3; else if HIPKM in (-2,-8) and HIPKF ge 0 then PCT_HISP = INT(10e5*sum(of HISP, -HIPKF)/denom)/10e3; else if HIPKM ge 0 and HIPKF in (-2,-8) then PCT_HISP=INT(10e5*sum(of HISP, -HIPKM)/denom)/10e3; if PCT_HISP not in (-2,-8) then do; if PCT_HISP lt 0 then PCT_HISP = 0; if PCT_HISP gt 100 then PCT_HISP = 100; end; end; else PCT_HISP = -9;

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
PCT_BLACK	Estimated percentage of students who are Black (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are Black, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr = 3 then PCT_BLACK = -8; else if BLACK ge 0 and BLPKM not in (-1,-9) and BLPKF not in (-1,-9) then do; if BLPKM ge 0 and BLPKF ge 0 then PCT_BLACK=INT(10e5*sum(BLACK, -BLPKM, BLPKF)/denom)/10e3; else if BLPKM in (-2,-8) and BLPKF in (-2,-8) then PCT_BLACK = INT(10e5*BLACK/denom)/10e3; else if BLPKM in (-2,-8) and BLPKF ge 0 then PCT_BLACK=INT(10e5*sum(BLACK, -BLPKF)/denom)/10e3; else if BLPKM ge 0 and BLPKF in (-2,-8) then PCT_BLACK=INT(10e5*sum(BLACK, -BLPKM)/denom)/10e3; if PCT_BLACK not in (-2,-8) then do; if PCT_BLACK lt 0 then PCT_BLACK = 0; if PCT_BLACK gt 100 then PCT_BLACK = 100; end; end; else PCT_BLACK = -9;
PCT_MULTI	Estimated percentage of students who are of Two or more races (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are of Two or more races, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr = 3 then PCT_MULTI = -8; else if TR ge 0 and TRPKM not in (-1,-9) and TRPKF not in (-1,-9) then do; if TRPKM ge 0 and TRPKF ge 0 then PCT_MULTI = INT(10e5*sum(TR, -TRPKM, -TRPKF)/denom)/10e3; else if TRPKM in (-2,-8) and TRPKF in (-2,-8) then PCT_MULTI = INT(10e5*TR/denom)/10e3; else if TRPKM in (-2,-8) and TRPKF ge 0 then PCT_MULTI = INT(10e5*sum(TR, -TRPKF)/denom)/10e3; else if TRPKM ge 0 and TRPKF in (-2,-8) then PCT_MULTI = INT(10e5*sum(TR, -TRPKM)/denom)/10e3; if PCT_MULTI not in (-2,-8) then do; if PCT_MULTI lt 0 then PCT_MULTI = 0; if PCT_MULTI gt 100 then PCT_MULTI = 100; end; end; else PCT_MULTI = -9;

See note at the end of table.

Table L-1. List of frame variables—Continued

Variable name	Short description	Long description
PCT_WHITE	Estimated percentage of students who are White (not of Hispanic or Latino origin)	Estimated percentage of students in the school who are White, not of Hispanic or Latino origin, based on data reported in the 2014–15 CCD. Calculated as follows: if sch_isr = 3 then PCT_WHITE = -8; else if WHITE ge 0 and WHPKM not in (-1,-9) and WHPKF not in (-1,-9) then do; if WHPKM ge 0 and WHPKF ge 0 then PCT_WHITE = INT(10e5*sum(WHITE, -WHPKM, -WHPKF)/denom)/10e3; else if WHPKM in (-2,-8) and WHPKF in (-2,-8) then PCT_WHITE = INT(10e5*WHITE/denom)/10e3; else if WHPKM ge 0 and WHPKF in (-2,-8) then PCT_WHITE = INT(10e5*sum(WHITE,-WHPKM)/denom)/10e3; else if WHPKM in (-2,-8) and WHPKF ge 0 then PCT_WHITE = INT(10e5*sum(WHITE,-WHPKF)/denom)/10e3; if PCT_WHITE not in (-2,-8) then do; if PCT_WHITE lt 0 then PCT_WHITE = 0; if PCT_WHITE gt 100 then PCT_WHITE = 100; end; end; else PCT_WHITE = -9;
PCT_NONWHITE	Estimated percentage of students in school who are of races other than White	Estimated percentage of students who are of races other than White, based on the percentages that the school reported in the 2014–15 CCD and the enrollment count reported in the 2015–16 NTPS. Calculated as follows: if sch_isr = 3 then PCT_NONWHITE = -8; else if denom gt 0 then do; PCT_NONWHITE = int(10e5*sum(AMALF, AMALM, ASALF, ASALM, BLALF, BLALM, HIALF, HIALM, HPALF, HPALM, TRALF, TRALM)/denom)/10e3; if AMPKF ge 0 and AMPKM ge 0 and ASPKF ge 0 and ASPKM ge 0 and BLPKF ge 0 and BLPKM ge 0 and HIPKF ge 0 and HIPKM ge 0 and HPPKF ge 0 and HPPKM ge 0 and TRPKF ge 0 and TRPKM ge 0 then PCT_NONWHITE = int(10e5*sum(AMALF, AMALM, ASALF, ASALM, BLALF, BLALM, HIALF, HIALM, HPALF, HPALM, TRALF, TRALM, -AMPKF, -AMPKM, -ASPKF, -ASPKM, -BLPKF, -BLPKM, -HIPKF, -HIPKM, -HPPKF, -HPPKM, -TRPKF, -TRPKM)/denom)/10e3; if PCT_NONWHITE gt 100 then PCT_NONWHITE = 100; if PCT_NONWHITE lt 0 then PCT_NONWHITE = 0; end; else PCT_NONWHITE = -9;

Table L-2. List of created variables

Variable name	Short description	Long description
SCHSIZE	Collapsed total K–12 and ungraded enrollment in school	<p>Categorical measure of the total K–12 and ungraded enrollment in the school. Categories include: 1 = 1–49; 2 = 50–99; 3 = 100–149; 4 = 150–199; 5 = 200–349; 6 = 350–499; 7 = 500–749; 8 = 750–999; 9 = 1,000–1,199; 10 = 1,200–1,499; 11 = 1,500–1,999; 12 = 2,000 or more. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Coded as follows for school files:</p> <pre> if sch_isr = 1 then do; if 1 le S0115 le 49 then SCHSIZE = 1; if 50 le S0115 le 99 then SCHSIZE = 2; if 100 le S0115 le 149 then SCHSIZE = 3; if 150 le S0115 le 199 then SCHSIZE = 4; if 200 le S0115 le 349 then SCHSIZE = 5; if 350 le S0115 le 499 then SCHSIZE = 6; if 500 le S0115 le 749 then SCHSIZE = 7; if 750 le S0115 le 999 then SCHSIZE = 8; if 1000 le S0115 le 1199 then SCHSIZE = 9; if 1200 le S0115 le 1499 then SCHSIZE = 10; if 1500 le S0115 le 1999 then SCHSIZE = 11; if S0115 ge 2000 then SCHSIZE = 12; if SCHSIZE gt 0 then FL_SCHSIZE = 0; end; else if sch_isr=2 then do; if 1 le ENRK12UG lt 50 then SCHSIZE = 1; if 50 le ENRK12UG lt 100 then SCHSIZE = 2; if 100 le ENRK12UG lt 150 then SCHSIZE = 3; if 150 le ENRK12UG lt 200 then SCHSIZE = 4; if 200 le ENRK12UG lt 350 then SCHSIZE = 5; if 350 le ENRK12UG lt 500 then SCHSIZE = 6; if 500 le ENRK12UG lt 750 then SCHSIZE = 7; if 750 le ENRK12UG lt 1000 then SCHSIZE = 8; if 1000 le ENRK12UG lt 1200 then SCHSIZE = 9; if 1200 le ENRK12UG lt 1500 then SCHSIZE = 10; if 1500 le ENRK12UG lt 2000 then SCHSIZE = 11; if ENRK12UG ge 2000 then SCHSIZE = 12; if SCHSIZE gt 0 then FL_SCHSIZE = 2; end; </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
SCHLEV_3CAT	Three-category school level (elementary/secondary/combined)	<p>Three-category level of school based on grade levels offered as reported by the school. Categories include: 1 = Elementary; 2 = Secondary; 3 = Combined. Coded as follows:</p> <pre> if sch_isr = 1 then do; edkg6 = 0; ed912 = 0; ed712 = 0; array elem[7] S0101 S0102 S0103 S0104 S0105 S0106 S0107; do I = 1 to 7; if elem [i] = 1 then edkg6 + 1; drop i; end; array sec[4] S0110 S0111 S0112 S0113; do I = 1 to 4; if sec[i] = 1 then ed912+1; drop i; end; array comb[6] S0108 S0109 S0110 S0111 S0112 S0113; do i = 1 to 6; if comb[i] = 1 then ed712+1; drop i; end; IF EDKG6 >= 1 AND ED912 < 1 THEN SCHLEV_3CAT = 1; *ELEMENTARY; ELSE IF S0114 = 2 AND EDKG6 < 1 THEN SCHLEV_3CAT = 2; *SECONDARY; ELSE IF S0114 = 1 AND EDKG6 < 1 AND ED712 >= 1 THEN SCHLEV_3CAT = 2; *SECONDARY; ELSE SCHLEV_3CAT = 3; *COMBINED; if SCHLEV_3CAT gt 0 then FL_SCHLEV_3CAT = 0; end; else if sch_isr = 2 then do; if substr(ntps_strat,2,1) = '1' then SCHLEV_3CAT = 1; if substr(ntps_strat,2,1) in ('2' '3') then SCHLEV_3CAT = 2; if substr(ntps_strat,2,1) = '4' then SCHLEV_3CAT = 3; if SCHLEV_3CAT gt 0 then FL_SCHLEV_3CAT = 2; end; </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
SCHLEV_4CAT	Four-category school level (primary/middle/high/combined)	<p>Four-category level of school based on grade levels offered as reported by the school. Categories include: 1 = Primary: Schools with at least one grade lower than 5 and no grade higher than 8; 2 = Middle: Schools with no grade lower than 5 and no grade higher than 8; 3 = High: Schools with no grade lower than 7 and at least one grade higher than 8; and 4 = Combined: Schools with at least one grade lower than 7 and at least one grade higher than 8. Schools with only ungraded classes were included with combined schools. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Coded as follows:</p> <pre> if sch_isr = 1 then do; if S0113 = 1 then LOWEST = 12; if S0112 = 1 then LOWEST = 11; if S0111 = 1 then LOWEST = 10; if S0110 = 1 then LOWEST = 9; if S0109 = 1 then LOWEST = 8; if S0108 = 1 then LOWEST = 7; if S0107 = 1 then LOWEST = 6; if S0106 = 1 then LOWEST = 5; if S0105 = 1 then LOWEST = 4; if S0104 = 1 then LOWEST = 3; if S0103 = 1 then LOWEST = 2; if S0102 = 1 then LOWEST = 1; if S0101 = 1 then LOWEST = 0; if S0101 = 1 then HIGHEST = 0; if S0102 = 1 then HIGHEST = 1; if S0103 = 1 then HIGHEST = 2; if S0104 = 1 then HIGHEST = 3; if S0105 = 1 then HIGHEST = 4; if S0106 = 1 then HIGHEST = 5; if S0107 = 1 then HIGHEST = 6; if S0108 = 1 then HIGHEST = 7; if S0109 = 1 then HIGHEST = 8; if S0110 = 1 then HIGHEST = 9; if S0111 = 1 then HIGHEST = 10; if S0112 = 1 then HIGHEST = 11; if S0113 = 1 then HIGHEST = 12; if S0114 = 1 and HIGHEST lt 0 and LOWEST lt 0 then SCHLEV_4CAT = 4; *COMBINED; else If LOWEST le 4 and HIGHEST le 8 then SCHLEV_4CAT = 1; *Primary; </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		else If LOWEST ge 5 and HIGHEST le 8 then SCHLEV_4CAT = 2; *Middle; else If LOWEST ge 7 and HIGHEST ge 9 then SCHLEV_4CAT = 3; *High; else SCHLEV_4CAT = 4; *Combined; if SCHLEV_4CAT gt 0 then FL_SCHLEV_4CAT = 0; end; else if sch_isr = 2 then do; if ('01' <= GSLO <= '04' or GSLO = 'KG' or GSLO = 'PK') and ('01' <= GSHI <= '08' or GSHI = 'KG' or GSHI = 'PK') then SCHLEV_4CAT = 1; else if '05' <= GSLO <= '08' and '05' <= GSHI <= '08' then SCHLEV_4CAT = 2; else if '07' <= GSLO <= '12' and '09' <= GSHI <= '12' then SCHLEV_4CAT = 3; else SCHLEV_4CAT = 4; if SCHLEV_4CAT gt 0 then FL_SCHLEV_4CAT = 2; end;
IEP	Percentage of enrolled students with an IEP	Percentage of students enrolled in the school who have an Individual Education Plan (IEP). Calculated as follows: if sch_isr = 1 then do; if S0400 = 2 then IEP = 0; else IEP = (INT(10e5*(S0401/S0115)))/10e3; if IEP lt 0 then IEP = -9; end; else IEP = -8;
SCH_ISR	Interview status of school	Interview status of school. Categories include: 1 = Interview; 2 = Noninterview; 3 = Out-of-scope.

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
PGMTYPE	Program type of school	School program type. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Categories include: 1 = Regular; 2 = Special program emphasis; 3 = Special education; 4 = Career/technical/vocational; 5 = Alternative/other. Copied from variable S0120 on the National Teacher and Principal Survey (NTPS) public school file. Coded as follows: if sch_isr = 1 then do; PGMTYPE = S0120; if PGMTYPE gt 0 then FL_PGMTYPE = 0; end; else if sch_isr = 2 then do; if type = '1' then PGMTYPE = 1; if type = '2' then PGMTYPE = 3; if type = '3' then PGMTYPE = 4; if type = '4' then PGMTYPE = 5; if PGMTYPE gt 0 then FL_PGMTYPE = 2; end;
ENRK12UG	Total K–12 and ungraded enrollment in school	Total K–12 and ungraded student enrollment in the school. Copied from S0115 on the NTPS school files. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Coded as follows: if sch_isr = 1 then do; ENRK12UG = s0115; FL_ENRK12UG = 0; end; else if sch_isr = 2 then do; if PK GT 0 and PK lt MEMBER then ENRK12UG = int(MEMBER-PK); else ENRK12UG = int(MEMBER); FL_ENRK12UG = 2; end;

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
NUMTCH	Estimated number of full-time-equivalent teachers in the school	Estimated number of full-time-equivalent teachers (FTE) in the school. This variable uses an estimate of the average percentage of time part-time teachers taught in school (.5040); public school calculation is based on preliminary 2015–16 NTPS data from the teacher data file, using the teacher basic weight. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Calculated as follows: if sch_isr = 1 then do; NUMTCH = int(10e3*sum(S0200, .5040*S0201))/10e3; if NUMTCH gt 0 then FL_NUMTCH = 0; end; else if sch_isr = 2 then do; NUMTCH = FTE; if NUMTCH gt 0 then FL_NUMTCH = 2; end;
NMNTCH_S	Number of minority teachers in the school	Headcount of teachers in the school who are of a racial or ethnic minority. Calculated as follows: if sch_isr = 1 then NMNTCH_S=sum(S0203,S0205,S0206,S0207,S0208,S0209); else NMNTCH = -8;
STU_TCH	Estimated number of students per FTE teacher in the school	Estimated number of students per full-time-equivalent (FTE) teacher in the school. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Calculated as follows for school files: if sch_isr = 1 then do; STU_TCH = (INT((S0115/NUMTCH)*10e3)/10e3); if STU_TCH ge 0 then FL_STU_TCH = 0; end; else if sch_isr = 2 then do; STU_TCH = INT((ENRK12UG / FTE)*10e3/10e3); if STU_TCH ge 0 then FL_STU_TCH = 2; end;
AGE_P	Principal's age	Age of principal. Calculated as follows: AGE_P = sum(2015, -p0907);

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
MINTCH	Percentage of teachers in the school who are of a racial/ethnic minority	Percentage of teachers at the school who are of a racial/ethnic minority. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Calculated as follows: if sch_isr = 1 then do; MINTCH = (INT((NMNTCH_S/S0202)*10e5)/10e3); if MINTCH ge 0 then FL_MINTCH = 0; end; if sch_isr = 3 then do; MINTCH = -8; FL_MINTCH = -8; end;
TCHEXPER	Principal's total teaching experience	Total years of the principal's experience as a teacher. Calculated as follows: if prin_isr = 1 then do; if p0110 gt 0 then TCHEXPER = sum(p0100,p0110); else TCHEXPER = p0100; end; else TCHEXPER = -8;
HAIFLAG	Flag indicating enrollment of American Indian students	Flag identifying the proportion of American Indian students enrolled, based on 2014–15 CCD enrollment information. Categories include: 1 = 20 percent or more American Indian enrollment; 2 = Less than 20 percent American Indian enrollment; -9 = Missing. Coded as follows: if sch_isr in (1,2) then do; if PCT_AIAN ge 20 then do; HAIFLAG = 1; FL_HAIFLAG = 0; end; else if 0 le PCT_AIAN lt 20 then do; HAIFLAG = 2; FL_HAIFLAG = 0; end; else if PCT_AIAN lt 0 then do; HAIFLAG = -9; FL_HAIFLAG = 2; end; end; else HAIFLAG = -8;
FILE	Data file population	Data file population. Categories include the following: 1 = Public school; 2 = Public school principal; 3 = Public school teacher.

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
NSLAPP_S	Percentage of enrolled students approved for the NSLP at school	<p>Of schools that participate in the National School Lunch Program (NSLP), the percentage of their K–12 enrollment that was approved for free or reduced-price lunches. Value is continuous unless school does not participate in the NSLP (-8, valid skip). For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Calculated as follows:</p> <pre> if sch_isr = 1 then do; if S0409 = 2 then do; NSLAPP_S = -8; FL_NSLAPP_S = 0; end; else NSLAPP_S=(INT((S0410/S0115)*10e5)/10e3); if NSLAPP_S gt 100 then NSLAPP_S = 100; if NSLAPP_S ge 0 then FL_NSLAPP_S = 0; end; else if sch_isr = 2 then do; if TOTFRL ge 0 then NSLAPP_S=(INT((TOTFRL/ENRK12UG)*10e5)/10e3); if NSLAPP_S gt 100 then NSLAPP_S = 100; if NSLAPP_S ge 0 then FL_NSLAPP_S = 2; end; else if sch_isr = 3 then do; NSLAPP_S = -8; FL_NSLAPP_S = -8; end; </pre>
CONTEA_S	Number of continuing teachers	<p>Number of teachers who were not newly hired for the 2015–16 school year. Calculated as follows:</p> <pre> if sch_isr = 1 then do; if S0202 ge 0 and S0285 ge 0 then CONTEA_S = sum(of S0202,-S0285); else CONTEA_S = -9; end; else CONTEA_S = -8; </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
RACETH_P	Principal's race/ethnicity	<p>Principal's race/ethnicity. Coded as follows: array Races (5) P0902 P0903 P0904 P0905 P0906; racenum = 0; do i = 1 to 5; if Races(i) = 1 then Racenum = Racenum + 10**(i-1); end; If P0901 = 1 and Racenum = 1 then RACETH_P = 1; /* Hispanic, American Indian */ If P0901 = 1 and Racenum = 10 then RACETH_P = 2; /* Hispanic, Hawaiian Native */ If P0901 = 1 and Racenum = 11 then RACETH_P = 3; /* Hispanic, Hawaiian Native, American Indian */ If P0901 = 1 and Racenum = 100 then RACETH_P = 4; /* Hispanic, Asian */ If P0901 = 1 and Racenum = 101 then RACETH_P = 5; /* Hispanic, Asian, American Indian */ If P0901 = 1 and Racenum = 110 then RACETH_P = 6; /* Hispanic, Asian, Hawaiian Native */ If P0901 = 1 and Racenum = 111 then RACETH_P = 7; /* Hispanic, Asian, Hawaiian Native, American Indian */ /* If P0901 = 1 and Racenum = 1000 then RACETH_P = 8; /* Hispanic, Black */ If P0901 = 1 and Racenum = 1001 then RACETH_P = 9; /* Hispanic, Black, American Indian */ If P0901 = 1 and Racenum = 1010 then RACETH_P = 10; /* Hispanic, Black, Hawaiian Native */ If P0901 = 1 and Racenum = 1011 then RACETH_P = 11; /* Hispanic, Black, Hawaiian Native, American Indian */ /* If P0901 = 1 and Racenum = 1100 then RACETH_P = 12; /* Hispanic, Black, Asian */ If P0901 = 1 and Racenum = 1101 then RACETH_P = 13; /* Hispanic, Black, Asian, American Indian */ If P0901 = 1 and Racenum = 1110 then RACETH_P = 14; /* Hispanic, Black, Asian, Hawaiian Native */ If P0901 = 1 and Racenum = 1111 then RACETH_P = 15; /* Hispanic, Black, Asian, Hawaiian Native, American Indian */ /* If P0901 = 1 and Racenum = 10000 then RACETH_P = 16; /* Hispanic, White */ If P0901 = 1 and Racenum = 10001 then RACETH_P = 17; /* Hispanic, White, American Indian */ If P0901 = 1 and Racenum = 10010 then RACETH_P = 18; /* Hispanic, White, Hawaiian Native */ If P0901 = 1 and Racenum = 10011 then RACETH_P = 19; /* Hispanic, White, Hawaiian Native, American Indian */ /* If P0901 = 1 and Racenum = 10100 then RACETH_P = 20; /* Hispanic, White, Asian */ If P0901 = 1 and Racenum = 10101 then RACETH_P = 21; /* Hispanic, White, Asian, American Indian */ If P0901 = 1 and Racenum = 10110 then RACETH_P = 22; /* Hispanic, White, Asian, Hawaiian Native */ If P0901 = 1 and Racenum = 10111 then RACETH_P = 23; /* Hispanic, White, Asian, Hawaiian Native, American Indian */ /* If P0901 = 1 and Racenum = 11000 then RACETH_P = 24; /* Hispanic, White, Black */ If P0901 = 1 and Racenum = 11001 then RACETH_P = 25; /* Hispanic, White, Black, American Indian */ /*</p>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<p>If P090 1 =1 and Racenum = 11010 then RACETH_P = 26; /* Hispanic, White, Black, Hawaiian Native */</p> <p>If P0901 = 1 and Racenum = 11011 then RACETH_P = 27; /* Hispanic, White, Black, Hawaiian Native, American Indian */</p> <p>If P0901 = 1 and Racenum = 11100 then RACETH_P = 28; /* Hispanic, White, Black, Asian */</p> <p>If P0901 = 1 and Racenum = 11101 then RACETH_P = 29; /* Hispanic, White, Black, Asian, American Indian */</p> <p>If P0901 = 1 and Racenum = 11110 then RACETH_P = 30; /* Hispanic, White, Black, Asian, Hawaiian Native */</p> <p>If P0901 = 1 and Racenum = 11111 then RACETH_P = 31; /* Hispanic, White, Black, Asian, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 1 then RACETH_P = 32; /* non-Hispanic, American Indian */</p> <p>If P0901 = 2 and Racenum = 10 then RACETH_P = 33; /* non-Hispanic, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 11 then RACETH_P = 34; /* non-Hispanic, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 100 then RACETH_P = 35; /* non-Hispanic, Asian */</p> <p>If P0901 = 2 and Racenum = 101 then RACETH_P = 36; /* non-Hispanic, Asian, American Indian */</p> <p>If P0901 = 2 and Racenum = 110 then RACETH_P = 37; /* non-Hispanic, Asian, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 111 then RACETH_P = 38; /* non-Hispanic, Asian, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 1000 then RACETH_P = 39; /* non-Hispanic, Black */</p> <p>If P0901 = 2 and Racenum = 1001 then RACETH_P = 40; /* non-Hispanic, Black, American Indian */</p> <p>If P0901 = 2 and Racenum = 1010 then RACETH_P = 41; /* non-Hispanic, Black, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 1011 then RACETH_P = 42; /* non-Hispanic, Black, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 1100 then RACETH_P = 43; /* non-Hispanic, Black, Asian */</p> <p>If P0901 = 2 and Racenum = 1101 then RACETH_P = 44; /* non-Hispanic, Black, Asian, American Indian */</p> <p>If P0901 = 2 and Racenum = 1110 then RACETH_P = 45; /* non-Hispanic, Black, Asian, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 1111 then RACETH_P = 46; /* non-Hispanic, Black, Asian, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 10000 then RACETH_P = 47; /* non-Hispanic, White */</p> <p>If P0901 = 2 and Racenum = 10001 then RACETH_P = 48; /* non-Hispanic, White, American Indian */</p> <p>If P0901 = 2 and Racenum = 10010 then RACETH_P = 49; /* non-Hispanic, White, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 10011 then RACETH_P = 50; /* non-Hispanic, White, Hawaiian Native,</p>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<p>American Indian */</p> <p>If P0901 = 2 and Racenum = 10100 then RACETH_P = 51; /* non-Hispanic, White, Asian */</p> <p>If P0901 = 2 and Racenum = 10101 then RACETH_P = 52; /* non-Hispanic, White, Asian, American Indian */</p> <p>If P0901 = 2 and Racenum = 10110 then RACETH_P = 53; /* non-Hispanic, White, Asian, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 10111 then RACETH_P = 54; /* non-Hispanic, White, Asian, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 11000 then RACETH_P = 55; /* non-Hispanic, White, Black */</p> <p>If P0901 = 2 and Racenum = 11001 then RACETH_P = 56; /* non-Hispanic, White, Black, American Indian */</p> <p>If P0901 = 2 and Racenum = 11010 then RACETH_P = 57; /* non-Hispanic, White, Black, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 11011 then RACETH_P = 58; /* non-Hispanic, White, Black, Hawaiian Native, American Indian */</p> <p>If P0901 = 2 and Racenum = 11100 then RACETH_P = 59; /* non-Hispanic, White, Black, Asian */</p> <p>If P0901 = 2 and Racenum = 11101 then RACETH_P = 60; /* non-Hispanic, White, Black, Asian, American Indian */</p> <p>If P0901 = 2 and Racenum = 11110 then RACETH_P = 61; /* non-Hispanic, White, Black, Asian, Hawaiian Native */</p> <p>If P0901 = 2 and Racenum = 11111 then RACETH_P = 62; /* non-Hispanic, White, Black, Asian, Hawaiian Native, American Indian */</p> <p>drop i;</p> <p>drop racenum;</p>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
CHARFLAG	Charter school identifier	<p>Flag that indicates whether or not a school is a charter school. A charter school is a public school that, in accordance with an enabling state statute, has been granted a charter exempting it from selected state or local rules and regulations. A charter school may be a newly created school, or it may previously have been a public or private school. For cases where the school was a noninterview, a sample file or other information was used to impute (if available). Copied from S0500 on the NTPS school file. Categories include: 1 = School is a public charter school; 2 = School is not a public charter school. Coded as follows:</p> <pre> if sch_isr = 1 then do; if S0500 gt 0 then CHARFLAG = S0500; else CHARFLAG = -9; if charflag gt 0 then FL_CHARFLAG = 0; end; else if sch_isr = 2 then do; if chtstat = '2' then charflag = 1; else if chtstat = '1' then CHARFLAG = 2; if charflag gt 0 then FL_CHARFLAG = 2; end; else CHARFLAG = -8;</pre>
IEPREG	Percentage of IEP students in regular classroom all day	<p>Percentage of students enrolled in the school who have an Individual Education Plan (IEP) and spent all day in a regular classroom. Value is continuous unless there are no IEP students or it is a special education school (-8, valid skip). Calculated as follows:</p> <pre> if sch_isr = 1 then do; if S0400 = 2 or S0402 = 1 then IEPREG = -8; else if S0402 = 2 and s0401 gt 0 then IEPREG = (INT((S0403/S0401)*10e5)/10e3); else IEPREG = -9; end; else IEPREG = -8;</pre>
AGE_T	Teacher's age	<p>Age of teacher. Calculated as follows:</p> <pre> if tch_isr = 1 then do; AGE_T = sum(2015,-T0934); if AGE_T lt 0 then AGE_T = -9; end; else AGE_T = -8;</pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
MNASGN	General field of main teaching assignment	<p>General field of main teaching assignment. Categories include: 1 = Early childhood or general elementary; 2 = Special education; 3 = Arts or music; 4 = English and language arts; 5 = English as a Second Language (ESL) or bilingual education; 6 = Foreign languages; 7 = Health education; 8 = Mathematics; 9 = Natural sciences; 10 = Social sciences; 11 = Career or technical education; 12 = All others. Coded as follows:</p> <pre> if tch_isr = 1 then do; if T0217 in (101, 102, 103) then MNASGN = 1; if T0217 in (110) then MNASGN = 2; if T0217 in (141, 142, 143, 144, 145) then MNASGN = 3; if T0217 in (151, 152, 153, 154, 155, 157, 158, 159) then MNASGN = 4; if T0217 in (160, 161, 162) then MNASGN = 5; if T0217 in (171, 172, 173, 174, 175) then MNASGN = 6; if T0217 in (181, 182) then MNASGN = 7; if T0217 in (191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201) then MNASGN = 8; if T0217 in (210, 211, 212, 213, 214, 215, 216, 217, 218) then MNASGN = 9; if T0217 in (220, 221, 222, 225, 226, 227, 228, 231, 232, 233, 234, 235) then MNASGN = 10; if T0217 in (241, 242, 243, 244, 245, 246, 247, 249, 250, 253, 254, 255, 256) then MNASGN = 11; if T0217 in (262, 264, 265, 266, 267, 268) then MNASGN = 12; if MNASGN lt 0 then MNASGN=-9; end; else MNASGN = -8;</pre>
CLASSZ_D	Average class size for teachers of departmentalized classes	<p>Average size of the classes taught by the teacher, if the teacher had departmentalized classes; i.e., he or she instructed several classes of different students most or all of the day in one or more subjects. Value is continuous unless the teacher is not departmentalized (-8, valid skip). Calculated as follows:</p> <pre> if tch_isr = 1 and T0221 = 1 then do; CLASSZ_D = (INT(MEAN(T0260-T0269)*10e3)/10e3); if CLASSZ_D lt 0 then CLASSZ_D = -9; end; else CLASSZ_D = -8;</pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
CLASSZ_S	Average class size for teachers of self-contained classes	Average size of the classes taught by the teacher, if the teacher had self-contained classes; i.e., he or she taught the same group of students all or most of the day in multiple subjects. Value is continuous unless the teacher is not self-contained (-8, valid skip). Coded as follows: if tch_isr = 1 and T0221 = 3 then do; CLASSZ_S = T0223; if CLASSZ_S lt 0 then CLASSZ_S = -9; end; else CLASSZ_S = -8;
EARNALL	Total yearly earnings, including other paid work	Teacher's total earnings for the summer of 2015 and the 2015–16 school year. Includes base salary for 2015–16 school year, any pay for teaching summer school, additional compensation from the school system, incentive pay, working in a nonteaching job in a school, or working at any nonschool job. Calculated as follows: if tch_isr = 1 then do; EARNALL = sum(of T0901, T0904, T0907, T0909, T0911, T0913, T0915, T0917, T0920); if EARNALL lt 0 then EARNALL = -9; end; else EARNALL = -8;
EARNSCH	Total school-related yearly earnings	Teacher's total yearly earnings from all school-related jobs and incentive pay for the summer of 2015 and the 2015–16 school year. Calculated as follows: if tch_isr = 1 then do; EARNSCH = sum(of T0901, T0904, T0909, T0911, T0913, T0915); if EARNSCH lt 0 then EARNSCH = -9; end; else EARNSCH = -8;
FTPT	Full-time, part-time teaching status	Two-level teaching status variable that shows whether respondent is teaching full time or part time in the 2015–16 school year. Categories include: 1= Full-time; 2=Part-time. Coded as follows: if tch_isr = 1 then do; if T0100 = 1 or T0103 = 1 then FTPT = 1; else FTPT = 2; if FTPT lt 0 then FTPT = -9; end; else ftpt = -8;

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
HIDEGR	Highest degree earned	<p>Highest degree held by the teacher. Categories include: 1 = Associate's degree or no college degree; 2 = Bachelor's degree; 3 = Master's degree; 4 = Education specialist or certificate of advanced graduate studies; 5 = Doctorate or professional degree. Coded as follows:</p> <pre> if tch_isr = 1 then do; if T0334 ge 1 then HIDEGR = 5; else if T0331 ge 1 or T0328 ge 1 then HIDEGR = 4; else if T0312 = 1 then HIDEGR = 3; else if T0300 = 1 then HIDEGR = 2; else HIDEGR = 1; if HIDEGR lt 0 then HIDEGR = -9; end; else HIDEGR = -8;</pre>
PUPILS_D	Number of students taught by teachers of departmentalized classes	<p>Total number of students taught by the teacher. For teachers of departmentalized classes. Value is continuous unless the teacher is not departmentalized (-8, valid skip). Calculated as follows:</p> <pre> if tch_isr = 1 and T0221 = 1 then do; if T0230 = 1 then PUPILS_D = T0260; else if T0230 = 2 then PUPILS_D = sum(T0260,T0261); else if T0230 = 3 then PUPILS_D = sum(T0260--T0262); else if T0230 = 4 then PUPILS_D = sum(T0260--T0263); else if T0230 = 5 then PUPILS_D = sum(T0260--T0264); else if T0230 = 6 then PUPILS_D = sum(T0260--T0265); else if T0230 = 7 then PUPILS_D = sum(T0260--T0266); else if T0230 = 8 then PUPILS_D = sum(T0260--T0267); else if T0230 = 9 then PUPILS_D = sum(T0260--T0268); else if T0230 ge 10 then PUPILS_D = sum(T0260--T0269); if PUPILS_D lt 0 then PUPILS_D = -9; end; else PUPILS_D = -8;</pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
PUPILS_S	Number of students taught by teachers of self-contained classes	Number of students taught by the teacher. For teachers of self-contained classes. Value is continuous unless the teacher is not self-contained (-8, valid skip). Coded as follows: if tch_isr = 1 then do; if T0221 = 3 then PUPILS_S = T0223; if PUPILS_S lt 0 then PUPILS_S = -9; end; else PUPILS_S = -8;
IEP_T	Percentage of teacher's students with an IEP	Percentage of students who had an Individual Education Plan (IEP) taught by teachers of self-contained or departmentalized classes. Value is continuous unless the teacher is not departmentalized or self-contained (-8, valid skip). Calculated as follows: if tch_isr = 1 and T0221 in (1,3) then do; if T0221 = 1 then IEP_T = (INT((t0215/PUPILS_D)*10e5)/10e3); else if T0221 = 3 then IEP_T = (INT((T0215/PUPILS_S)*10e5)/10e3); if IEP_T gt 100 then IEP_T = 100; if IEP_T lt 0 then IEP_T = -9; end; else IEP_T = -8;
LEP_T	Percentage of teacher's students who are LEP	Percentage of students who were English language learners (ELLs) or of limited English proficiency (LEP) taught by teachers of self-contained or departmentalized classes. Value is continuous unless the teacher is not departmentalized or self-contained (-8, valid skip). Calculated as follows: if tch_isr = 1 and T0221 in (1,3) then do; if T0221 = 1 then LEP_T = (INT((t0216/PUPILS_D)*10e5)/10e3); else if T0221 = 3 then LEP_T = (INT((T0216/PUPILS_S)*10e5)/10e3); if LEP_T gt 100 then LEP_T = 100; if LEP_T lt 0 then LEP_T = -9; end; else LEP_T = -8;

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
TOTYREXP	Teacher's years of experience, accounting for year began teaching	<p>Teacher's adjusted years of teaching experience. Experience is calculated as the sum of years he or she taught full or part time in public and private schools. Teaching experience may overlap by sector (public and private) or status (full or part time). To adjust for this, TOTYREXP cannot sum to more than the number of years that have elapsed between the year the teacher began teaching (T0108) and the survey year 2016. Teachers who began teaching in the 2015–16 school year are assigned 1 year of experience. Calculated as follows:</p> <pre> if tch_isr = 1 then do; TOTYREXP = T0110; TYRPOSS = sum(2016,-T0108); if TYRPOSS = 0 then TYRPOSS = 1; if T0107 in (1,2,3,4,5) then do; if TOTYREXP gt sum(TYRPOSS,1) then TOTYREXP = TYRPOSS; end; else if T0107 ge 6 then do; if TOTYREXP gt TYRPOSS then TOYREXP = TYRPOSS; end; else TOTYREXP = -9; drop TYRPOSS; end; else TOTYREXP = -8;</pre>
NEWTCH	New teacher flag—teacher has taught 3 or fewer years	<p>Flag that identifies teachers who have 3 or fewer years of experience including full- and part-time teaching experience in public and private schools. Categories include: 1 = 3 or fewer years of experience; 2 = More than 3 years of experience. Coded as follows:</p> <pre> if tch_isr = 1 then do; if TOTYREXP gt 0 then do; if TOTYREXP le 3 then NEWTCH = 1; else NEWTCH = 2; end; else NEWTCH = -9; end; else NEWTCH = -8;</pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
RACETH_T	Teacher's race/ethnicity	<p>Teacher's race/ethnicity. Coded as follows:</p> <pre> if tch_isr = 1 then do; array Races (5) T0929 T0930 T0931 T0932 T0933; racenum = 0; do i = 1 to 5; if Races(i) = 1 then Racenum=Racenum + 10**(i-1); end; If T0928 = 1 and Racenum = 1 then RACETH_T = 1; /* Hispanic, American Indian */ If T0928 = 1 and Racenum = 10 then RACETH_T = 2; /* Hispanic, Hawaiian Native */ If T0928 = 1 and Racenum = 11 then RACETH_T = 3; /* Hispanic, Hawaiian Native, American Indian */ If T0928 = 1 and Racenum = 100 then RACETH_T = 4; /* Hispanic, Asian */ If T0928 = 1 and Racenum = 101 then RACETH_T = 5; /* Hispanic, Asian, American Indian */ If T0928 = 1 and Racenum = 110 then RACETH_T = 6; /* Hispanic, Asian, Hawaiian Native */ If T0928 = 1 and Racenum = 111 then RACETH_T = 7; /* Hispanic, Asian, Hawaiian Native, American Indian */ If T0928 = 1 and Racenum = 1000 then RACETH_T = 8; /* Hispanic, Black */ If T0928 = 1 and Racenum = 1001 then RACETH_T = 9; /* Hispanic, Black, American Indian */ If T0928 = 1 and Racenum = 1010 then RACETH_T = 10; /* Hispanic, Black, Hawaiian Native */ If T0928 = 1 and Racenum = 1011 then RACETH_T = 11; /* Hispanic, Black, Hawaiian Native, American Indian */ If T0928 = 1 and Racenum = 1100 then RACETH_T = 12; /* Hispanic, Black, Asian */ If T0928 = 1 and Racenum = 1101 then RACETH_T = 13; /* Hispanic, Black, Asian, American Indian */ If T0928 = 1 and Racenum = 1110 then RACETH_T = 14; /* Hispanic, Black, Asian, Hawaiian Native */ If T0928 = 1 and Racenum = 1111 then RACETH_T = 15; /* Hispanic, Black, Asian, Hawaiian Native, American Indian */ If T0928 = 1 and Racenum = 10000 then RACETH_T = 16; /* Hispanic, White */ If T0928 = 1 and Racenum = 10001 then RACETH_T = 17; /* Hispanic, White, American Indian */ If T0928 = 1 and Racenum = 10010 then RACETH_T = 18; /* Hispanic, White, Hawaiian Native */ If T0928 = 1 and Racenum = 10011 then RACETH_T = 19; /* Hispanic, White, Hawaiian Native, American Indian */ If T0928 = 1 and Racenum = 10100 then RACETH_T = 20; /* Hispanic, White, Asian */ If T0928 = 1 and Racenum = 10101 then RACETH_T = 21; /* Hispanic, White, Asian, American Indian */ If T0928 = 1 and Racenum = 10110 then RACETH_T = 22; /* Hispanic, White, Asian, Hawaiian Native */ </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<p>If T0928 = 1 and Racenum = 10111 then RACETH_T = 23; /* Hispanic, White, Asian, Hawaiian Native, American Indian */</p> <p>If T0928 = 1 and Racenum = 11000 then RACETH_T = 24; /* Hispanic, White, Black */</p> <p>If T0928 = 1 and Racenum = 11001 then RACETH_T = 25; /* Hispanic, White, Black, American Indian */</p> <p>If T0928 = 1 and Racenum = 11010 then RACETH_T = 26; /* Hispanic, White, Black, Hawaiian Native */</p> <p>If T0928 = 1 and Racenum = 11011 then RACETH_T = 27; /* Hispanic, White, Black, Hawaiian Native, American Indian */</p> <p>If T0928 = 1 and Racenum = 11100 then RACETH_T = 28; /* Hispanic, White, Black, Asian */</p> <p>If T0928 = 1 and Racenum = 11101 then RACETH_T = 29; /* Hispanic, White, Black, Asian, American Indian */</p> <p>If T0928 = 1 and Racenum = 11110 then RACETH_T = 30; /* Hispanic, White, Black, Asian, Hawaiian Native */</p> <p>If T0928 = 1 and Racenum = 11111 then RACETH_T = 31; /* Hispanic, White, Black, Asian, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 1 then RACETH_T = 32; /* non-Hispanic, American Indian */</p> <p>If T0928 = 2 and Racenum = 10 then RACETH_T = 33; /* non-Hispanic, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 11 then RACETH_T = 34; /* non-Hispanic, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 100 then RACETH_T = 35; /* non-Hispanic, Asian */</p> <p>If T0928 = 2 and Racenum = 101 then RACETH_T = 36; /* non-Hispanic, Asian, American Indian */</p> <p>If T0928 = 2 and Racenum = 110 then RACETH_T = 37; /* non-Hispanic, Asian, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 111 then RACETH_T = 38; /* non-Hispanic, Asian, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 1000 then RACETH_T = 39; /* non-Hispanic, Black */</p> <p>If T0928 = 2 and Racenum = 1001 then RACETH_T = 40; /* non-Hispanic, Black, American Indian */</p> <p>If T0928 = 2 and Racenum = 1010 then RACETH_T = 41; /* non-Hispanic, Black, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 1011 then RACETH_T = 42; /* non-Hispanic, Black, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 1100 then RACETH_T = 43; /* non-Hispanic, Black, Asian */</p> <p>If T0928 = 2 and Racenum = 1101 then RACETH_T = 44; /* non-Hispanic, Black, Asian, American Indian */</p> <p>If T0928 = 2 and Racenum = 1110 then RACETH_T = 45; /* non-Hispanic, Black, Asian, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 1111 then RACETH_T = 46; /* non-Hispanic, Black, Asian, Hawaiian</p>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<p>Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 10000 then RACETH_T = 47; /* non-Hispanic, White */</p> <p>If T0928 = 2 and Racenum = 10001 then RACETH_T = 48; /* non-Hispanic, White, American Indian */</p> <p>If T0928 = 2 and Racenum = 10010 then RACETH_T = 49; /* non-Hispanic, White, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 10011 then RACETH_T = 50; /* non-Hispanic, White, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 10100 then RACETH_T = 51; /* non-Hispanic, White, Asian */</p> <p>If T0928 = 2 and Racenum = 10101 then RACETH_T = 52; /* non-Hispanic, White, Asian, American Indian */</p> <p>If T0928 = 2 and Racenum = 10110 then RACETH_T = 53; /* non-Hispanic, White, Asian, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 10111 then RACETH_T = 54; /* non-Hispanic, White, Asian, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 11000 then RACETH_T = 55; /* non-Hispanic, White, Black */</p> <p>If T0928 = 2 and Racenum = 11001 then RACETH_T = 56; /* non-Hispanic, White, Black, American Indian */</p> <p>If T0928 = 2 and Racenum = 11010 then RACETH_T = 57; /* non-Hispanic, White, Black, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 11011 then RACETH_T = 58; /* non-Hispanic, White, Black, Hawaiian Native, American Indian */</p> <p>If T0928 = 2 and Racenum = 11100 then RACETH_T = 59; /* non-Hispanic, White, Black, Asian */</p> <p>If T0928 = 2 and Racenum = 11101 then RACETH_T = 60; /* non-Hispanic, White, Black, Asian, American Indian */</p> <p>If T0928 = 2 and Racenum = 11110 then RACETH_T = 61; /* non-Hispanic, White, Black, Asian, Hawaiian Native */</p> <p>If T0928 = 2 and Racenum = 11111 then RACETH_T = 62; /* non-Hispanic, White, Black, Asian, Hawaiian Native, American Indian */</p> <p>if RACETH_T lt 0 then RACETH_T = -9;</p> <p>drop i;</p> <p>drop racenum;</p> <p>end;</p> <p>else RACETH_T = -8;</p>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
TLEV_4CAT	Level of students taught by teacher (primary/middle/high/combined)	<p>Grade level of students taught by teacher. Teachers are grouped into four categories based on the grade levels of students taught and the teacher's main assignment. Categories include: 1 = Primary; 2 = Middle; 3 = High; 4 = Combined. Those with only ungraded classes are classified as primary level if their main assignment is early childhood/prekindergarten (pre-K) or elementary, or they teach special education in a self-contained classroom, or they teach "Pull-Out" or "Push-In" classes. Among teachers with regularly graded classes, those with classes in any of grades 9–12, but no grade lower than 9, are classified as high school-level teachers. Those with classes in any of grades pre-K through 4 and no grade higher than 6 are classified as primary school-level teachers. Those who teach any of grades 5 through 8, and no grades lower than 5 or higher than 9, are classified as middle school-level teachers. Those with classes that do not meet the requirements for primary, middle, or high school level are classified as combined-level teachers. Coded as follows:</p> <pre> if tch_isr=1 then do; if (T0210 = 1 or T0211 = 1 or T0212 = 1 or T0213 = 1) and (T0200 ne 1 and T0201 ne 1 and T0202 ne 1 and T0203 ne 1 and T0204 ne 1 and T0205 ne 1 and T0206 ne 1 and T0207 ne 1 and T0208 ne 1 and T0209 ne 1) then TLEV_4CAT = 3; *High; else if (T0200 = 1 or T0201 = 1 or T0202 = 1 or T0203 = 1 or T0204 = 1 or T0205 = 1) and (T0207 ne 1 and T0208 ne 1 and T0209 ne 1 and T0210 ne 1 and T0211 ne 1 and T0212 ne 1 and T0213 ne 1) then TLEV_4CAT = 1; * Primary; else if (T0206 = 1 or T0207 = 1 or T0208 = 1 or T0209 = 1) and (T0200 ne 1 and T0201 ne 1 and T0202 ne 1 and T0203 ne 1 and T0204 ne 1 and T0205 ne 1 and T0211 ne 1 and T0212 ne 1 and T0213 ne 1) then TLEV_4CAT=2; *Middle; /*CASES STILL NOT ASSIGNED go by MAIN ASSIGNMENT - ELEM., SPEC. ED., EARLY CHILD*/ if TLEV_4CAT not in (1,2,3) then do; array ray1 (*) T0200--T0213; count = 0; do n = 1 to dim(ray1); if ray1(n) = 1 then count+1; end; if T0214 = 1 and count = 0 then do; if T0217 in (101, 102) then TLEV_4CAT = 1; else if T0217 = 110 and T0221= 3 then TLEV_4CAT = 1; else if T0217 = 103 and T0221 = 3 then TLEV_4CAT = 2; end; end; </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<pre> else if T0221 = 2 then TLEV_4CAT = 1; else TLEV_4CAT = 4; end; else TLEV_4CAT = 4; /*Combined*/ end; end; else tlev_4cat = -8; </pre>
UNITID	IPEDS ID for college/university where teacher earned bachelor's degree	The National Center for Education Statistics (NCES) identification number for the school where the respondent received his or her bachelor's degree. This variable is provided so that data can be linked to the Integrated Postsecondary Education Data System (IPEDS) or other data sources that use the postsecondary institution identifier UNITID. Copied from the 2014–15 IPEDS variable UNITID and matched to the name of the college or university where the teacher reported receiving his or her bachelor's degree (T5301). For more information on IPEDS, see https://nces.ed.gov/ipeds/ .
OCC_CODE	Occupation code	2012 North American Industry Classification System (NAICS) Occupation Classification. Origin: T5502 on the Teacher Questionnaire. For details on the occupation descriptions and groupings, see https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2012 .

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
TLEV_2CAT	Level of students taught by teacher (elementary/secondary)	<p>Two-category teacher level that divides teachers into elementary or secondary based on a combination of the grades taught, main teaching assignment, and the structure of their classes. Those with only ungraded classes become elementary-level teachers if their main assignment is early childhood/pre-K or elementary, or they teach either special education in a self-contained classroom or an elementary enrichment class. All other teachers with ungraded classes are classified as secondary level. Among teachers with regularly graded classes, elementary-level teachers generally teach any of grades pre-k–5; report an early childhood/pre-K, elementary, self-contained special education, or elementary enrichment main assignment; or the majority of grades taught are K–6. In general, secondary-level teachers instruct any of grades 7–12 but usually no grade lower than 5. They also teach more of grades 7–12 than lower level grades. Categories include: 1 = elementary; 2 = secondary. Coded as follows:</p> <pre> if tch_isr = 1 then do; array ray2(*) T0200--T0214; do n = 1 to dim(ray2); if ray2(n) = 2 then ray2(n) = .T; end; if T0214 = 1 and sum(of T0200--T0213) lt 1 then do; /* UNGRADED, AND NO PRE--K -- 12 */ if (T0217 = 110 and T0221 = 3) or T0217 in (101,102) or T0221 = 2 THEN TLEV_2CAT = 1; /*ELEMENTARY*/ else TLEV_2CAT = 2; /*SECONDARY*/ end; else if sum(of T0200--T0206) gt 0 and /*PRE-K--5TH*/ sum(of T0211--T0213) lt 1 /*NO 10TH--12*/ then TLEV_2CAT = 1; else if sum(of T0200--T0206) lt 1 and /*NO PRE-K--5TH*/ sum(of T0210--T0213) gt 0 /*9TH-- 12TH*/ then TLEV_2CAT = 2; else if T0208 ge 1 or T0209 ge 1 or /*7TH OR 8TH*/ (sum(of T0200--T0207) gt 0 and /*OR PRE-K-- 6TH AND 9TH--12TH*/ sum(of T0210--T0213) > 0) then do; if T0217 in (101,102) or T0221 = 2 then TLEV_2CAT = 1; /*PRE-K,KG,GEN.ELEM or ELEM ENRICH*/ else if T0217 = 110 then do; /*SPECIAL ED*/ if T0221 = 3 then TLEV_2CAT = 1; /*IF SELF-CONTAINED, THEN ELEMENTARY*/ else TLEV_2CAT = 2; /*ALL OTHERS, SECONDARY*/ end; else if sum(of T0206--T0210) gt 0 and /*5TH--9TH*/ sum(of T0214,T0200--T0205) lt 1 then </pre>

See note at the end of table.

Table L-2. List of created variables—Continued

Variable name	Short description	Long description
		<pre> TLEV_2CAT=2; /*UG--4TH*/ else if T0221 = 2 then TLEV_2CAT = 1; /*ELEM ENRICHMENT*/ else if sum(of T0208--T0213) = 6 and /*7TH--12TH*/ T0217 ge 141 then TLEV_2CAT = 2; else if sum(of T0202--T0207) = 6 and /*1ST--6TH*/ T0217 in (101,102) then TLEV_2CAT = 1; else if sum(of T0202--T0207) gt /*1ST--6TH*/ sum(of T0208--T0213) then TLEV_2CAT = 1; /*7TH--12TH*/ else if sum(of T0202--T0207) lt /*1ST--6TH*/ sum(of T0208--T0213) then TLEV_2CAT = 2; /*7TH--12TH*/ else if sum(of T0202--T0207) = /*1ST--6TH*/ sum(of T0208--T0213) then do; /*7TH--12TH*/ if T0217 in (101,102,110) or T0221 = 2 then TLEV_2CAT = 1; /*ELEMENTARY*/ else TLEV_2CAT = 2; /*SECONDARY*/ end; end; else if sum(of T0201--T0206) gt /*K--5TH*/ sum(of T0208--T0213) then TLEV_2CAT = 1; /*7TH--12TH*/ else if sum(of T0201--T0206) lt /*K--5TH*/ sum(of T0208--T0213) then TLEV_2CAT =2; /*7TH--12TH*/ else if T0217 = 102 then TLEV_2CAT = 1; /*KG & GENL ELEM*/ else if T0217 = 110 and /*special ed*/ T0221 = 3 then TLEV_2CAT = 1; /*self-cont*/ else if T0221 = 2 then TLEV_2CAT = 1; /*elem enrich*/ else TLEV_2CAT = 2; do n = 1 to dim(ray2); if ray2(n) = .T then ray2(n) = 2; end; end; else tlev_2cat = -8; </pre>

Table L-3. List of derived variables

Variable name	Short description	Long description
ACGRADRATE	Adjusted Cohort Graduation Rate for the 2014–15 school year (from <i>EDFacts</i>)	The Adjusted Cohort Graduation Rate (ACGR) for the school as reported in the <i>EDFacts</i> school year 2014–15 Adjusted Cohort Graduation Rate Data File. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. The number of students who graduate within 4 years is then divided by the number of students in the adjusted cohort to obtain the ACGR. Coded as follows: ACGRADRATE = ALL_RATE_1415;
ACGR_COHORT	Total number of students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	The adjusted cohort for 2014–15 graduates. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_COHORT = ALL_COHORT_1415;
ACGR_AIAN	Rate of American Indian/Alaska Native (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of American Indian/Alaska Native (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_AIAN = MAM_RATE_1415;
COHORT_AIAN	Total number of American Indian/Alaska Native (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of American Indian/Alaska Native (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_AIAN = MAM_COHORT_1415;

See note at the end of table.

Table L-3. List of derived variables—Continued

Variable name	Short description	Long description
ACGR_ASIANPI	Rate of Asian/Pacific Islander (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of Asian/Pacific Islander (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year. Includes Asian, Pacific Islander, Native Hawaiian, and Filipino students. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_ASIANPI = MAS_RATE_1415;
COHORT_ASIANPI	Total number of Asian/Pacific Islander (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of Asian/Pacific Islander (non-Hispanic) students within the 4-year adjusted cohort for the 2014–5 school year. Includes Asian, Pacific Islander, Native Hawaiian, and Filipino students. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_ASIANPI = MAS_COHORT_1415;
ACGR_BLACK	Rate of Black (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of Black (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_BLACK = MBL_RATE_1415;
COHORT_BLACK	Total number of Black (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of Black (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_BLACK = MBL_COHORT_1415;
ACGR_HISP	Rate of Hispanic students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of Hispanic students who graduated within the 4-year adjusted cohort for the 2014–15 school year. Includes Hispanic, Latino, and Puerto Rican students. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_HISP = MHI_RATE_14

See note at the end of table.

Table L-3. List of derived variables—Continued

Variable name	Short description	Long description
COHORT_HISP	Total number of Hispanic students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of Hispanic students within the 4-year adjusted cohort for the 2014–15 school year. Includes Hispanic, Latino, and Puerto Rican students. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_HISP = MHI_COHORT_1415;
ACGR_MULTI	Rate of students of Two or more races (non-Hispanic) who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of students of Two or more races (non-Hispanic) who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_MULTI = MTR_RATE_1415;
COHORT_MULTI	Total number of students of Two or more races (non-Hispanic) within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of students of Two or more races (non-Hispanic) within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_MULTI = MTR_COHORT_1415;
ACGR_WHITE	Rate of White (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of White (non-Hispanic) students who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_WHITE = MWH_RATE_1415;
COHORT_WHITE	Total number of White (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of White (non-Hispanic) students within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_WHITE = MWH_COHORT_1415;

See note at the end of table.

Table L-3. List of derived variables—Continued

Variable name	Short description	Long description
ACGR_DISABL	Rate of students with disabilities who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of students with disabilities who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_DISABL = CWD_RATE_1415;
COHORT_DISABL	Total number of students with disabilities within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of students with disabilities within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_DISABL = CWD_COHORT_1415;
ACGR_DISADV	Rate of economically disadvantaged students who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of economically disadvantaged students who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_DISADV = ECD_RATE_1415;
COHORT_DISADV	Total number of economically disadvantaged students within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of economically disadvantaged students within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_DISADV = ECD_COHORT_1415;
ACGR_LEP	Rate of students with limited English proficiency who graduated within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Rate of students with limited English proficiency who graduated within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: ACGR_LEP = LEP_RATE_1415;

See note at the end of table.

Table L-3. List of derived variables—Continued

Variable name	Short description	Long description
COHORT_LEP	Total number of students with limited English proficiency within the 4-year adjusted cohort for the 2014–15 school year (from <i>EDFacts</i>)	Total number of students with limited English proficiency within the 4-year adjusted cohort for the 2014–15 school year. This is referred to as “adjusted” because, from the beginning of 9th grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country, or die. Coded as follows: COHORT_LEP = LEP_COHORT_1415;
DISCPLN_FL	Flag indicating an alternative school designed to meet the needs of students with discipline problems	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school is an alternative school designed for students with discipline problems. Categories include: 1 = Alternative school for students with discipline problems; 2 = Not a school designed for discipline problems; -9 = Missing. Coded as follows: if UPCASE (SCH_ALTFOCUS) in ("DISCIPLINE", "BOTH") then DISCPLN_FL = 1; else if SCH_ALTFOCUS in ('ACADEMIC', '-9') then DISCPLN_FL = 2; else DISCPLN_FL = -7;
MAGNET_FL	Flag indicating whether school is a magnet or operates a magnet program	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school is a magnet or operates a magnet program. Categories include: 1 = Magnet; 2 = Not a magnet; -9 = Missing. Coded as follows: If UPCASE(SCH_STATUS_MAGNET) = "YES" then MAGNET_FL = 1; Else if UPCASE (SCH_STATUS_MAGNET) = "NO" then MAGNET_FL = 2; else if sch_status_magnet ne '9' then magnet_fl = -7; Else MAGNET_FL = -9;
SCHWMAG_FL	Flag indicating a schoolwide magnet program	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school has a schoolwide magnet program. Categories include: 1 = Schoolwide magnet program; 2 = Magnet program, not schoolwide; 3 = Magnet, program type unknown; 4 = School does not have a magnet program; -9 = Missing. Coded as follows: if MAGNET_FL = 1 then do; if UPCASE (SCH_MAGNETDETAIL) = "YES" then SCHWMAG_FL = 1; else if UPCASE(SCH_MAGNETDETAIL) = "NO" then SCHWMAG_FL = 2; else SCHWMAG_FL = 3; end; else if MAGNET_FL = 2 then SCHWMAG_FL = 4; else if MAGNET_FL = -7 then SCHWMAG_FL = -7; else if MAGNET_FL = -9 then SCHWMAG_FL = -9;

See note at the end of table.

Table L-3. List of derived variables—Continued

Variable name	Short description	Long description
GIFTED_FL	Flag indicating whether school has students enrolled in any gifted/talented programs	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school has students enrolled in any gifted or talented programs. Categories include: 1 = Students enrolled in gifted/talented program; 2 = No students enrolled in gifted/talented program; -9 = Missing. Coded as follows: If UPCASE(SCH_GT_IND) = "YES" then GIFTED_FL = 1; Else if UPCASE(SCH_GT_IND) = "NO" then GIFTED_FL = 2; else if sch_gt_ind ne '-9' then gifted_fl = -7; Else GIFTED_FL = -9;
IB_FL	Flag indicating whether school has students enrolled in the International Baccalaureate Diploma Programme	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school has students enrolled in the International Baccalaureate Diploma Programme (IB). Categories include: 1 = Students enrolled in IB program; 2 = No students enrolled in IB program; -8 = Valid skip; -9 = Missing. Coded as follows: If UPCASE(SCH_IBENR_IND) = "YES" then IB_FL = 1; Else if UPCASE(SCH_IBENR_IND) = "NO" then IB_FL = 2; Else if UPCASE(SCH_IBENR_IND) = "-9" then IB_FL = -8; Else IB_FL = -7;
AP_FL	Flag indicating whether school has students enrolled in Advanced Placement courses	A flag based on the 2013–14 Civil Rights Data Collection (CRDC) data, which indicates whether the school has students enrolled in Advanced Placement (AP) courses. Categories include: 1 = Students enrolled in AP courses; 2 = No students enrolled in AP courses; -8 = Valid skip; -9 = Missing. Coded as follows: If UPCASE(SCH_APENR_IND) = "YES" then AP_FL = 1; Else if UPCASE(SCH_APENR_IND) = "NO" then AP_FL = 2; Else if UPCASE(SCH_APENR_IND) = "-9" then AP_FL = -8; Else AP_FL = -7;

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Appendix M. Weighting Adjustment Cells

A detailed listing of the weighting classes or cells are contained in this appendix. Presented first are the school level adjustments. Next are the school principal level adjustments. Finally, the teacher level adjustments are presented. Refer to chapter 8 on weighting for a more general description of the weighting procedure.

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Table M-1. CHAID cell definitions for nonresponse adjustment factor for schools (SNIAF): 2015–16 NTPS

CELL	CLOCRT ¹	CATPERMN NWHT ²	CENREG ³	GRDRT ⁴	T1PRGSTAT ⁵	POVRT ⁶	TOTENR ⁷	ADJ_TYPE ⁸	TOTFTE ⁹
01	3	1, 2, 3, 4, 5	2	1					
02	3	1, 2, 3, 4, 5	2	2, 3					
03	3	1, 2, 3, 4, 5	3		2				
04	3	1, 2, 3, 4, 5	3		1, 3				
05	3	1, 2, 3, 4, 5	1, 4		1, 2				
06	3	1, 2, 3, 4, 5	1, 4		3				
07	3	6				1			
08	3	6				2			
09	2		2		2				
10	2		2	2, 3	1, 3				
11	2		2	1	1, 3				
12	2	1, 2, 3, 4, 5	4						
13	2	6	4			1			
14	2	6	4			2			
15	2	1, 2, 3, 4, 5	1, 3		2, 3	1	1, 2, 3		
16	2	6	1, 3		2, 3	1	1, 2, 3		
17	2		1, 3		2, 3	2	1, 2, 3		
18	2		1, 3		2, 3		4, 5		
19	2		1, 3		1		1, 2, 3		
20	2		1, 3		1		4, 5		
21	1							6	
22	1	1, 2, 3, 4, 5	2, 3					1	
23	1	1, 2, 3, 4, 5	1, 4					1	
24	1	6	4					1	
25	1	6	3					1	1, 2, 3
26	1	6	1					1	1, 2, 3
27	1	6	1, 3					1	4, 5
28	1	6	2					1	
29	1							2, 3, 4, 5	

¹ Collapsed Locale for Raking/Trimming- 1: Central City, 2: Suburban, 3: Town and Rural.² Percent Hispanic or Nonwhite- 1: Less than 5 percent, 2: 5 percent-10 percent, 3: 10 percent-20 percent, 4: 20 percent-30 percent, 5: 30 percent-50 percent, 6: 50 percent or more.³ Census Region- 1: Northeast, 2: Midwest, 3: South, 4: West.⁴ Grade Level for Raking/Trimming- 1: Primary, 2: Middle, 3: High or Combined.⁵ Title I Program Status- 1: Not Title I Eligible, 2: School Wide Title I, 3: Title I, but not School Wide.⁶ Collapsed Poverty for Raking/Trimming- 1: Low, Medium/Low, or Medium/High Poverty, 2: High Poverty.⁷ Enrollment- 1: Less than 200, 2: 200–500, 3: 500–750, 4: 750–1000, 5: 1000 or more.⁸ Adjusted School Type- 1: Noncharter Regular, 2: Noncharter Special Education, 3: Noncharter Vocational, 4: Noncharter Other/Alternative, 5: Noncharter Reportable Program, 6: Charter.⁹ Full-Time Teacher Equivalents- 1: Less than 10, 2: 10–25, 3: 25–50, 4: 50–75, 5: 75 or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School and Principal Weighting Specification,” 2015–16.

Table M-2. CHAID cell definitions for noninterview adjustment for principals (ANIAF): 2015–16 NTPS

CELL	CLOCRT ¹	CATPERMN NWHT ²	CENREG ³	GRDRT ⁴	TIPRGSTAT ⁵	POVRT ⁶
01	3	1, 2, 3, 4, 5	2	1		
02	3	1, 2, 3, 4, 5	2	2, 3		
03	3	1, 2, 3, 4, 5	3		2	
04	3	1, 2, 3, 4, 5	3		1, 3	
05	3	1, 2, 3, 4, 5	1, 4		2	
06	3	1, 2, 3, 4, 5	1, 4		1, 3	
07	3	6				1
08	3	6				2
09	2		2	2, 3		
10	2		2	1		
11	2	1, 2, 3, 4, 5	4			
12	2	6	4			
13	2	1, 2, 3, 4, 5	1, 3		2	
14	2	1, 2, 3, 4, 5	1, 3		3	
15	2	6	1, 3		2, 3	1
16	2	6	1, 3		2, 3	2
17	2		1, 3		1	
18	1	1, 2, 3, 4, 5	2, 3			
19	1	1, 2, 3, 4, 5	1, 4			
20	1	6	4			1
21	1	6	4			2
22	1	6	3	1		
23	1	6	3	2, 3		
24	1	6	1, 2			

¹ Collapsed Locale for Raking/Trimming- 1: Central City, 2: Suburban, 3: Town and Rural.

² Percent Hispanic or Nonwhite- 1: Less than 5 percent, 2: 5 percent–10 percent, 3: 10 percent–20 percent, 4: 20 percent–30 percent, 5: 30 percent–50 percent, 6: 50 percent or more.

³ Census Region- 1: Northeast, 2: Midwest, 3: South, 4: West.

⁴ Grade Level for Raking/Trimming- 1: Primary, 2: Middle, 3: High or Combined.

⁵ Title I Program Status- 1: Not Title I Eligible, 2: School Wide Title I, 3: Title I, but not School Wide.

⁶ Collapsed Poverty for Raking/Trimming- 1: Low, Medium/Low, or Medium/High Poverty, 2: High Poverty.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “School and Principal Weighting Specification,” 2015–16.

Table M-3. CHAID cell definitions for the teacher list nonresponse adjustment factor (TLNRAF): 2015–16 NTPS

CELL	CLOCRT ¹	ADJ_TYPE ²	CENREG ³	GRDRT ⁴	TIPRGSTAT ⁵	POVRT ⁶	CATPERMN_NWHT ⁷
1	3	1	2	1			
2	3	1	2	2, 3			
3	3	1	3	2, 3	2	1	
4	3	1	3	1	2	1	
5	3	1	3		2	2	
6	3	1	3				
7	3	1	1, 4	1, 2			
8	3	1	1, 4	3			
9	3	2, 3, 4, 5, 6					
10	1, 2			2, 3	3		1, 2, 3, 4, 5
11	1, 2			1	3		1, 2, 3, 4, 5
12	1, 2				3		6
13	1, 2	1	4		2	1	
14	1, 2	1	4		2	2	
15	1, 2	1	2		2		1, 2, 3, 4, 5
16	1, 2	1	3		2		1, 2, 3, 4, 5
17	2	1	2, 3		2	1	6
18	2	1	2, 3		2	2	6
19	1	1	3		2		6
20	1	1	2		2		6
21	1, 2	1	1		2	1	
22	1, 2	1	1		2	2	
23	1, 2	2, 3, 4, 5, 6			2		
24	1, 2		2		1		
25	1, 2		4		1		1, 2, 3, 4, 5
26	1, 2		4		1		6
27	1, 2		1		1		
28	1, 2		3		1		1, 2, 3, 4, 5
29	1, 2		3		1		6

¹ Collapsed Locale for Raking/Trimming- 1: Central City, 2: Suburban, 3: Town and Rural.

² Adjusted School Type- 1: Noncharter Regular, 2: Noncharter Special Education, 3: Noncharter Vocational, 4: Noncharter Other/Alternative, 5: Noncharter Reportable Program, 6: Charter.

³ Census Region- 1: Northeast, 2: Midwest, 3: South, 4: West.

⁴ Grade Level for Raking/Trimming- 1: Primary, 2: Middle, 3: High or Combined.

⁵ Title I Program Status- 1: Not Title I Eligible, 2: School Wide Title I, 3: Title I, but not School Wide.

⁶ Collapsed Poverty for Raking/Trimming- 1: Low, Medium/Low, or Medium/High Poverty, 2: High Poverty.

⁷ Percent Hispanic or Nonwhite- 1: Less than 5 percent, 2: 5 percent–10 percent, 3: 10 percent–20 percent, 4: 20 percent–30 percent, 5: 30 percent–50 percent, 6: 50 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Teacher Weighting Specification,” 2015–16.

Table M-4. CHAID cell definitions for teacher within school nonresponse adjustment factor (TNIAF): 2015–16 NTPS

CELL	CENREG ¹	CATPERMN_NWHT ²	TOTFTE ³	CLOCRT ⁴	GRDRT ⁵	TSTRATUM ⁶	TIPRGSTAT ⁷	POVRT ⁸	TOTENR ⁹	ADJ_TYPE ¹⁰
1	2	1, 2, 3, 4, 5	1, 2, 3	2	1					
2	2	1, 2, 3, 4, 5	1, 2, 3	2	2, 3	A, B, C, D				
3	2	1, 2, 3, 4, 5	1, 2, 3	2	2, 3	E				
4	2	1, 2, 3, 4, 5	1, 2, 3	3	1, 2	A, B, D				
5	2	1, 2, 3, 4, 5	1, 2, 3	3	3	A, B, D				
6	2	1, 2, 3, 4, 5	1, 2, 3	3	1	E	2			
7	2	1, 2, 3, 4, 5	1, 2, 3	3	1	E	1, 3			
8	2	1, 2, 3, 4, 5	1, 2, 3	3	2, 3	E	1			
9	2	1, 2, 3, 4, 5	1, 2, 3	3	2, 3	E	3			
10	2	1, 2, 3, 4, 5	1, 2, 3	3	2, 3	E	2			
11	2	1, 2, 3, 4, 5	1, 2, 3	3		C				
12	2	1, 2, 3, 4, 5	1, 2, 3	1			2, 3			
13	2	1, 2, 3, 4, 5	1, 2, 3	1			1			
14	2	1, 2, 3, 4, 5	4, 5	3			2			
15	2	1, 2, 3, 4, 5	4, 5	1, 2			2			
16	2	1, 2, 3, 4, 5	4, 5	3			1			
17	2	1, 2, 3, 4, 5	4, 5	2		A, B, C, D	1			
18	2	1, 2, 3, 4, 5	4, 5	2		E	1			
19	2	1, 2, 3, 4, 5	4, 5	1			1			
20	2	1, 2, 3, 4, 5	4, 5				3			
21	2	6		2, 3				1	1, 2, 3	
22	2	6		2, 3				2	1, 2, 3	
23	2	6		2, 3					4, 5	
24	2	6		1				1		
25	2	6		1				2	1, 2, 3	
26	2	6		1				2	4, 5	
27	3	1, 2, 3, 4, 5	1, 2, 3	3	1	A, D, E	1			
28	3	1, 2, 3, 4, 5	1, 2, 3	3	1	A, D, E	2, 3	1		
29	3	1, 2, 3, 4, 5	1, 2, 3	3	1	A, D, E	2, 3	2		
30	3	1, 2, 3, 4, 5	4, 5	3	1	A, D, E				
31	3	1, 2, 3, 4, 5		3	1	B, C				
32	3	6		3	1					
33	3			3	2	A, B, D				
34	3			3	2	C				
35	3	1, 2, 3, 4, 5		3	2	E				
36	3	6		3	2	E				
37	3			3	3		1, 3		1, 2, 3	
38	3			3	3		1, 3		4, 5	
39	3			3	3	A, B, D	2	1	1, 2, 3	
40	3			3	3	C, E	2	1	1, 2, 3	
41	3	1, 2, 3, 4, 5		3	3		2	1	4, 5	
42	3	6		3	3		2	1	4, 5	
43	3			3	3		2	2		
44	3			1, 2	1	A, B, D				
45	3	1, 2, 3, 4, 5	1, 2, 3	2	1	E	1, 3	1		
46	3	1, 2, 3, 4, 5	1, 2, 3	2	1	E	2	1		
47	3	1, 2, 3, 4, 5	1, 2, 3	1	1	E		1		
48	3	6	1, 2, 3	1	1	E		1		
49	3	6	1, 2, 3	2	1	E		1		
50	3		4, 5	1, 2	1	E	2	1		
51	3		4, 5	1, 2	1	E	1, 3	1		

See notes at end of table.

Table M-4. CHAID cell definitions for teacher within school nonresponse adjustment factor (TNIAF): 2015–16 NTPS—Continued

52	3		1, 2, 3	1	1	E		2		
53	3		1, 2, 3	2	1	E		2		
54	3		4, 5	1, 2	1	E		2		
55	3			1, 2	1	C				
56	3			1, 2	2	A				
57	3			1, 2	2	B, D				
58	3	1, 2, 3, 4, 5		1, 2	2	C, E			1, 2, 3	
59	3	1, 2, 3, 4, 5		1, 2	2	C, E			4, 5	
60	3	6		1, 2	2	C				
61	3	6		1, 2	2	E			1, 2, 3	
62	3	6		1, 2	2	E			4, 5	
63	3	1, 2, 3, 4, 5		1	3		1, 3			
64	3	1, 2, 3, 4, 5		2	3		1, 3			
65	3	6		1, 2	3		1, 3			
66	3			1, 2	3	A, B, D	2	1		
67	3			1, 2	3	A, B, D	2	2		
68	3	1, 2, 3, 4, 5		1, 2	3	C, E	2			
69	3	6		2	3	C, E	2			
70	3	6		1	3	C, E	2	1		
71	3	6		1	3	C, E	2	2		
72	4			3		A, D				
73	4			3	1, 2	E	2, 3	1		
74	4			3	1, 2	E	1	1		
75	4			3	1, 2	E		2		
76	4			3	3	E				
77	4			3		B, C				
78	4	1, 2, 3, 4, 5	1, 2, 3	2	1		1			
79	4	1, 2, 3, 4, 5	1, 2, 3	2	2, 3		1			
80	4	6	1, 2, 3	2			1			
81	4	1, 2, 3, 4, 5	1, 2, 3	2			2, 3			
82	4	6	1, 2, 3	2			2, 3	1	1, 2, 3	
83	4	6	1, 2, 3	2			2, 3	2	1, 2, 3	
84	4	6	1, 2, 3	2			2, 3		4, 5	
85	4		4, 5	2		A, B, D	1, 3			
86	4	1, 2, 3, 4, 5	4, 5	2		C, E	1, 3			
87	4	6	4, 5	2		C, E	1, 3			
88	4		4, 5	2			2			
89	4		1, 2, 3	1		B, D				
90	4		4, 5	1		B, D				
91	4			1		A				
92	4	1, 2, 3, 4, 5		1	1	E	1, 3			
93	4	6		1	1	E	1, 3			
94	4			1	1	E	2	1		
95	4			1	1	E	2	2		
96	4			1	3	E				
97	4			1	2	E				
98	4			1		C				
99	1			3	3				1, 2, 3	
100	1			3	1		2		1, 2, 3	
101	1			3	1		1, 3		1, 2, 3	
102	1			3	2				1, 2, 3	
103	1			3					4, 5	
104	1			2						2, 3, 4, 5, 6

See notes at end of table.

Table M-4. CHAID cell definitions for teacher within school nonresponse adjustment factor (TNIAF): 2015–16 NTPS—Continued

105	1	1, 2, 3, 4, 5	1, 2, 3	2	1, 3		3			1
106	1	1, 2, 3, 4, 5	4, 5	2	1, 3	A, C, D	3			1
107	1	1, 2, 3, 4, 5	4, 5	2	1, 3	B, E	3			1
108	1	6		2	1, 3		3			1
109	1			2	2		3			1
110	1	1, 2, 3, 4, 5		2	2, 3		2			1
111	1	1, 2, 3, 4, 5		2	1		2			1
112	1	6	1, 2, 3	2			2			1
113	1	6	4, 5	2			2			1
114	1		1, 2, 3	2			1			1
115	1		4, 5	2			1			1
116	1		1, 2, 3	1	1			1		
117	1		1, 2, 3	1	1			2		
118	1		1, 2, 3	1	2, 3					
119	1		4, 5	1			2, 3	1		
120	1		4, 5	1			2, 3	2		
121	1		4, 5	1			1			

¹ Census Region- 1: Northeast, 2: Midwest, 3: South, 4: West.

² Percent Hispanic or Nonwhite- 1: Less than 5 percent, 2: 5 percent–10 percent, 3: 10 percent–20 percent, 4: 20 percent–30 percent, 5: 30 percent–50 percent, 6: 50 percent or more.

³ Full-Time Teacher Equivalents- 1: Less than 10, 2: 10–25, 3: 25–50, 4: 50–75, 5: 75 or more.

⁴ Collapsed Locale for Raking/Trimming- 1: Central City, 2: Suburban, 3: Town and Rural.

⁵ Grade Level for Raking/Trimming- 1: Primary, 2: Middle, 3: High or Combined.

⁶ Teacher Subject- A: Math, B: Science, C: English/Language Arts, D: Social Studies, E: All Other.

⁷ Title I Program Status- 1: Not Title I Eligible, 2: School Wide Title I, 3: Title I, but not School Wide.

⁸ Collapsed Poverty for Raking/Trimming- 1: Low, Medium/Low, or Medium/High Poverty, 2: High Poverty.

⁹ Enrollment- 1: Less than 200, 2: 200–500, 3: 500–750, 4: 750–1000, 5: 1000 or more.

¹⁰ Adjusted School Type- 1: Noncharter Regular, 2: Noncharter Special Education, 3: Noncharter Vocational, 4: Noncharter Other/Alternative, 5: Noncharter Reportable Program, 6: Charter.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Teacher Weighting Specification,” 2015–16.

Table M-5. CHAID cell definitions for teacher adjustment factor (TAF): 2015–16 NTPS

CELL	CENDIV ¹	TOTENR ²	TOTFTE ³	CLOC ⁴	CATPERMN_NWHT ⁵	TIPRGSTAT ⁶	POVSTAT ⁷	DIST_FLG ⁸	GRDREC ⁹	CENREG ¹⁰
1					2					
2					1				1	
3					1				2	
4					1				3	
5					3					1
6					3					2
7					3					3
8					3					4
9	01				4					
10	02				4					
11	04				4					
12	05				4					
13	06				4					
14	08				4					
15					6	3				
16			1, 4		1				4	
17			2		1				4	
18			3, 5		1				4	
19	03	1, 5			4					
20	03	2, 3, 4			4					
21	07	2, 3, 4			4					
22	07	3, 5			4					
23	09	1, 4, 5			4					
24	09	2			4					
25	09	3			4					
26					5	1	3, 4			
27				2	5	2				
28				4	5	2				
29			1, 2		5	3				
30			3, 4		5	3				
31			5		5	3				
32					6	1	1			
33					6	1	2			
34					6	1	4			
35	01				6	2				
36	02				6	2				
37	04				6	2				
38	06				6	2				
39	09				6	2				
40					5	1	1		3, 4	
41	01, 06, 09				5	1	2			
42	02, 03, 04, 05, 07, 08				5	1	2			
43	01, 02, 04, 06, 07, 08, 09			1	5	2				
44	03, 05			4	5	2				
45	02, 08, 09			3	5	2				
46	03, 05			3	5	2				
47	01, 04, 06			3	5	2				

See notes at end of table.

**Table M-5. CHAID cell definitions for teacher adjustment factor (TAF): 2015–16 NTPS—
Continued**

48	07			3	5	2				
49			1, 3		6	1	3			
50			2		6	1	3			
51			4, 5		6	1	3			
52	03				6	2		1		
53	03				6	2		2		
54	05		4		6	2				
55	07			1	6	2				
56	07			2	6	2				
57	07			3	6	2				
58	07			4	6	2				
59	08	3, 4, 5			6	2				
60	01, 02, 03, 06, 07, 08				5	1	1		1, 2	
61	04, 05, 09				5	1	1		1, 2	
62	05	1, 4	1, 2, 3, 5		6	2				
63	05	3	1, 2, 3, 5		6	2				
64	05	5	1, 2, 3, 5		6	2				
65	08	1, 2			6	2			1, 2	
66	08	1, 2			6	2			3, 4	
67	05	2	1, 2, 3, 5	1	6	2				
68	05	2	1, 2, 3, 5	2	6	2				
69	05	2	1, 2, 3, 5	3, 4	6	2				

¹ Census Division – 1: New England, 2: Middle Atlantic, 3: East North Central, 4: West North Central, 5: South Atlantic, 6: East South Central, 7: West South Central, 8: Mountain, 9: Pacific.

² Enrollment – 1: Less than 200, 2: 200-500, 3: 500-750, 4: 750-1000, 5: 1000 or more.

³ Full-Time Teacher Equivalents- 1: Less than 10, 2: 10-25, 3: 25-50, 4: 50-75, 5: 75 or more.

⁴ Locale – 1: Central City, 2: Suburban, 3: Town and Rural.

⁵ Percent Hispanic or Nonwhite- 1: Less than 5 percent, 2: 5 percent-10 percent, 3: 10 percent-20 percent, 4: 20 percent-30 percent, 5: 30 percent-50 percent, 6: 50 percent or more.

⁶ Title I Program Status- 1: Not Title I Eligible, 2: School Wide Title I, 3: Title I, but not School Wide.

⁷ Poverty Status (used for sorting) – 1: High Poverty, 2: Medium/High Poverty, 3: Medium/Low Poverty, 4: Low Poverty.

⁸ District Flag – 1: Special District, 2: Not Special District.

⁹ Grade Level – 1: Primary, 2: Middle, 3: High or Combined.

¹⁰ Census Region- 1: Northeast, 2: Midwest, 3: South, 4: West.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Teacher Weighting Specification,” 2015–16.