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An Exploratory Analysis of the Content and Availability of State Administrative Data on Teacher Compensation

Research and Development Report

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Foreword

The Research and Development (R&D) series of reports at NCES has been initiated to

- share studies and research that are developmental in nature. The results of such studies may be revised as the work continues and additional data become available;
- share the results of studies that are, to some extent, on the "cutting edge" of methodological developments. Emerging analytical approaches and new computer software development often permit new and sometimes controversial analyses to be done. By participating in "frontier research," we hope to contribute to the resolution of issues and improved analysis; and
- participate in discussions of emerging issues of interest to educational researchers, statisticians, and the federal statistical community in general. Such reports may document workshops and symposia sponsored by NCES that address methodological and analytical issues or may share and discuss issues regarding NCES practices, procedures, and standards.

The common theme in all three goals is that these reports present results or discussions that do not reach definitive conclusions at this point in time, either because the data are tentative, the methodology is new and developing, or the topic is one on which there are divergent views. Therefore, the techniques and inferences made from the data are tentative and subject to revision. To facilitate the process of closure on the issues, we invite comment, criticism, and alternatives to what we have done. Such responses should be directed to

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Executive Summary

Introduction

Salaries and benefits for instruction are the largest component of school operating costs for public schools (U.S. Department of Education 2007). The level and structure of this compensation can play an important role in the recruitment and retention of a high-quality teaching workforce. Thus, detailed and reliable data on teacher pay and benefits are important in making informed education policy. Unfortunately, available data do not readily permit reliable comparisons of teacher pay between states or accurate estimates of changes over time. While the sophistication of data systems maintained by states is growing rapidly, no systematic inventory of state-level data collection on teacher compensation has been undertaken. This report identifies state education agencies (SEAs) that maintain records on pay for public school teachers, the comparability of these records, and whether the data might be available to the research community.

Selected Findings

Based on a initial feedback from 40 SEAs, follow-up telephone conversations, and internet searches, the following was found:

- At least 34 states maintain teacher-level records with earnings and other teacher characteristics, such as teacher demographics, experience, and educational attainment, that are linkable over time (figure 1).
- At least 25 states indicate a willingness to share these data with researchers using appropriate confidentiality safeguards (figure 2).
- Most states with teacher salary data also collect basic employment data, such as job title (100 percent) and full-time-equivalent (FTE) status (91 percent) (derived from figure 5).

It is feasible to use teacher employment and compensation data collected by SEAs to conduct large multistate comparative studies of teacher pay. These studies would not only permit overall comparisons of pay, but also comparisons of teacher pay at various points along typical career trajectories (e.g., bachelor's degree with no experience, master's degree with 10 years' experience), with breakdowns by teacher demographics and state or district characteristics.

For research purposes, data on teacher characteristics and pay from pension systems are likely inferior to data in SEA systems. Because their primary focus is on calculating retirement benefits, pension funds do not uniformly collect some data elements, such as teaching experience and educational attainment, in a manner that would allow for comparisons of teacher compensation.

Acknowledgments

This report reflects the contributions of many individuals. The authors gratefully acknowledge the efforts of all those who provided assistance and guidance. At the National Center for Education Statistics (NCES), Frank Johnson leads the effort to collect and analyze data on teacher compensation, which formed the starting point for this work. This report was produced through the Education Statistics Services Institute, which is funded by NCES and composed of staff from the American Institutes for Research (AIR) and several partner organizations. Zeyu Xu and Jed Tank, formerly of AIR, each provided helpful technical comments and suggestions on early drafts of the report. Martin Hahn copyedited this report, while Steve Honegger, Alison Slade, and Sandy Eyster conducted meticulous reviews of this report and provided valuable technical assistance.

Finally, we also wish to thank all of the representatives of the state education agencies who agreed to answer our questions and provide the information on which this report is based.

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I. Introduction

The "Highly Qualified Teacher" requirements of the No Child Left Behind Act (2002) have stimulated increased interest in the level and structure of teacher pay and benefits. National survey data on these variables are available from a variety of sources, including the Decennial Census, the American Community Survey (ACS), the Current Population Survey (CPS), and the Schools and Staffing Survey (SASS). SASS collects data specific to education and was developed by the National Center for Education Statistics (NCES), while the other surveys are conducted by the Census Bureau and collect data about the employment and earnings of household members.

Data collected via these household or teacher surveys generally include information that may be used to control for teacher education and experience; such information is critical when comparing teacher pay. Labor force surveys, such as those conducted by the Census Bureau, also permit teacher and nonteacher pay comparisons. However, these surveys are not without shortcomings. For example, the like the Decennial Census and the ACS, the CPS allows for proxy reporting, which may affect the accuracy of reports of earnings. Additionally, income is reported for a 12 month period, making it impossible to separate salary for teaching from salary from teaching or other secondary employment in the summers. Finally, the earnings data may have considerable reporting error and may yield biased estimates because a large and increasing share of respondents fail to report pay. In these cases, earnings are imputed. However, when nonteacher earnings are used to impute teachers' earnings, the utility of these data for teacher-nonteacher comparisons is compromised. There is no easy fix for nonreporting of earnings in labor force surveys, and the problem is growing.

Many state education agencies (SEAs)⁴ collect data about individual school employees. These state administrative data, collected directly from school districts, have the potential to produce more comprehensive and more accurate estimates of teacher pay. They often include variables at the teacher level that reflect teaching assignments, base pay, earnings supplements or extra-duty pay, experience, and demographics. There are clear advantages to SEA administrative data in analyzing teacher compensation. First, because these data are collected directly from districts (often from district payroll offices), they are more accurate than data collected from household surveys. Second,

¹ For example, in the Current Population Out-Going Rotation Group file (derived from the Current Population Survey), the percentage of college-educated nonteachers with imputed earnings rose from 12 percent in 1980 to 32 percent in 2003; for public school teachers, the percentage rose from 11 to 26 percent over the same period (Podgursky and Tongrut 2006, table 5).

² Earnings data from the CPS are imputed using information on age, race, sex, major occupation recode, educational attainment, and usual hours worked (U.S. Department of Labor 2002). The major occupation recode variable used contains 14 broad occupational categories, resulting in public school teachers being included with a number of non-teaching positions, as well as private school teachers (U.S. Bureau of the Census 2008).

³ For general studies concerning the accuracy of CPS earnings data, see Bollinger (1998) and Hirsch and Schumacher (2004); for studies concerning CPS reports of teacher pay, see Podgursky and Tongrut (2006). A contrary view may be found in Allegretto, Corcoran, and Mishel (2004).

⁴ SEAs are the agencies of the states with the primary responsibility for coordinating and supervising public instruction, including the setting of standards for elementary and secondary instruction programs.

they are available for the entire universe of public school teachers, not just a sample. This makes possible reliable disaggregated comparisons across subgroups (e.g., districts or teaching fields).

This report explores the feasibility of using teacher-level administrative data maintained by SEAs for interstate or interdistrict studies of teacher pay. In particular, the report attempts to answer the following questions:

- Which states collect teacher-level data on earnings?
- Are teacher-level data available to the research community?
- What teacher-level data are collected?
- What comparisons are feasible given current SEA practices?

II. Methodology

The goal of this research was to determine whether teacher earnings data are currently collected by states and whether these data are comparable across states. To that end, the following steps were followed. First, a review was conducted of responses from a concurrent NCES project concerning teacher pay data collected by SEAs. Second, a search was conducted for relevant technical documentation on agency websites. Third, follow-up telephone discussions were conducted with relevant SEA contacts. Finally, the results and conclusions were submitted to the SEAs for validation. These steps are described in more detail below.

State education agencies annually report data to NCES on all public schools, public school districts, and the agencies themselves through the NCES Common Core of Data (CCD). SEAs exist for all 50 states, the District of Columbia, Puerto Rico, and the four outlying areas of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands. This report limits the focus to those SEAs from the 50 states and the District of Columbia. Reporting by SEAs to NCES is voluntary.

NCES Common Core of Data Feasibility Study

NCES contracts with SEAs for their input to the quality and improvement of CCD data. Related to this, in July 2006 NCES sought feedback from SEAs on the availability of teacher level data required to compute comparable average teacher salaries within and across states. To this end, NCES asked 14 questions about the availability of 17 data elements for each certified teacher (see appendix A). The data elements included teacher characteristics as well as compensation information (e.g., base annual salary, retirement contributions from the district/state). The results from the feasibility study are used as a starting point for this report.

Internet Search for SEA Technical Documentation

Internet searches were used to confirm or elaborate upon results obtained from the CCD feasibility study and the follow-up discussions, as well as to identify any additional sources of data. All SEAs have websites with general organizational information and

access to publications. The online search took place immediately prior to contacting each SEA by telephone and was used to identify materials that describe and specify details of district data reporting requirements and procedures. These materials often include data dictionaries and downloadable forms that provide information on the types of data that school districts report to state agencies. Although many SEAs do not make electronic documentation on data collection publicly accessible,⁵ the online search provided a useful complement to the other methods of gathering information. The information provided through the online search was useful for determining the consistency of SEA definitions for data items. In addition, in the case of two states (Maryland and North Dakota), the researcher was directed to specific documentation on the SEA website that formed the basis of the data collected for this report.

Telephone Follow-up Discussions With NCES Data Contacts

While the results from the CCD feasibility study provided a great deal of information, it was not designed specifically to answer the questions that are the focus of this study. Also, a number of SEAs did not respond to the study. Thus, an additional data collection was necessary to obtain data from the nonresponding SEAs, as well as to supplement information from the CCD feasibility study with the additional items that are the focus of this research. For SEAs that provided information through the CCD feasibility study, the contact persons were recontacted to schedule follow-up discussions. SEAs that did not participate in the feasibility study were contacted through the CCD data coordinator information posted on the NCES website (http://nces.ed.gov/ccd/contact.asp). (See appendix A for an example of the e-mail sent to the two groups of SEAs.) Telephone discussions occurred between October 2006 and March 2007.

A protocol was developed to structure the telephone discussions (see appendix A). Each conversation verified whether the state agency collects employment and salary data from school districts for individual teachers. SEAs that do not collect individual teacher data were asked to indicate when, if ever, they plan to collect such data and to describe the calculation process used to generate average teacher salaries reported for their state. Other questions sought more detailed information about critical variables necessary for calculating comparable measures of teacher compensation, including job titles, full-time equivalency (FTE), the nature of salary variables (total, base, and supplemental pay), teaching experience, and educational attainment. Some SEAs

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⁵ Relevant online data documentation was located for 24 states.

⁶ See exhibit A-1 for the definition of a teacher in the CCD feasibility study. The telephone follow-up discussion used a broader definition, allowing representatives to define the term themselves. Notable differences include that the CCD feasibility study specifically excluded teaching assistants, librarians, etc., and teachers without teaching certificates. Given the exploratory nature of the analysis, and the additional questions asked about data file details (including job title), it is not believed that these differences substantially affected the findings.

⁷ Some states that do not directly collect teacher-level salary data are able to report teacher salary data. For example, the California SEA collects teacher-level data other than salary and uses these data to impute estimated salaries from known salary rate tables.

provided additional information from other sources that was included with data collected directly through the telephone discussion.⁸

Validation of Results by SEAs

A preliminary draft of this report was sent to all data contacts in late March 2007. Contacts were asked to validate the information reported for their state, with a particular focus on the information presented in table C-2 (see appendix A for an example of the letter accompanying the draft of the report that was sent to SEAs). Twenty-three SEAs provided feedback (see table B-1), with a small number of recommended corrections to table C-2.

Summary

Collecting data about teacher pay from multiple sources allowed researchers to confirm results, clarify questions about responses to the CCD feasibility study, and, in general, substantiate whether each SEA collects teacher compensation data and the characteristics of specific variables. The telephone discussions and the documents found on the Internet were especially helpful for probing more deeply about variables that are essential to comparing teacher pay and compensation across states; the conversations were the only means available for inquiring how researchers might gain access to SEA-maintained data.

Response Rates

SEAs varied in their participation with the different collection methods. Response rates ranged from 61 percent for the CCD feasibility study to 45 percent for the SEA validation request. However, by taking advantage of multiple approaches, reasonable coverage was achieved. Overall, 82 percent of the 51 SEAs included in this research responded to at least one of the data collections (including having information available on their website). Forty of the 51 SEAs (78 percent) responded to either the CCD feasibility study or the telephone discussion, and 22 (43 percent) responded to both. One state did not participate in the CCD feasibility study, the telephone discussion or the SEA validation, but information was found on the SEAs website. One state did not participate in the CCD feasibility study, the telephone discussion, and no information was found on the SEA website; however, this SEA did respond to the validation request. Only 9 SEAs (18 percent) were nonresponders to all of the data collections.

Reconciling Data Across Collection Methods

As one would expect when data are collected on the same topic using different collection methods, results within a state were occasionally inconsistent.

⁸ As previously stated, two states directed the researchers to data documentation on the SEA websites; a third SEA sent data documentation.

Inconsistencies could occur because different individuals interpreted the questions differently, slightly different questions were asked, facts changed between collection efforts, or for other reasons. Responses from the CCD feasibility study and the telephone discussion were generally consistent. In situations where the information from the telephone discussion could not be fully clarified (i.e., "undetermined" status in tables C-2 and C-3), information from the feasibility study took precedence. The SEA validation phase also provided another opportunity to resolve data inconsistencies. SEAs generally provided explanations for their recommended changes, and the changes were incorporated into this report. 9

When evaluating responses to questions on data availability on the CCD feasibility study and telephone discussion, some inconsistent answers within SEAs were found and merit attention. There are several possible reasons why these different responses were given in the two data collections. First, the wording of the question on data availability in the CCD feasibility study and the telephone discussion is different. In the feasibility study SEA contacts were asked, "When would you be able to send us a complete data file with all of the data items requested?" In the discussion, respondents were asked, "Would you be able to release a research version of the teacher data that does not permit identification of individual teachers, but that can be used to analyze teacher turnover, mobility, pay and other labor market factors?" Other explanations for these inconsistencies could include that the information was collected at different points in time or that the respondents to the two collections were not the same person, and one or neither of the respondents may be the individual in charge of determining data availability. Despite these inconsistencies, the individual and overall determinations of availability do provide meaningful information about the likelihood of the SEA to make these data available to NCES and/or the research community.

III. Findings

There are two sets of findings. First, the number of SEAs that reported collecting teacher-level compensation data (in either the CCD feasibility study or the telephone discussion) is presented, as well as the number of SEAs willing to make the data available for research purposes. Second, the variables that are important for making valid comparisons of teacher compensation between states and districts are identified and the number of SEAs that collect such data is reported.

States Collecting Teacher-Level Compensation Data

In both the CCD feasibility study and the follow-up discussions, SEA representatives were asked whether the state collected and maintained teacher-level data. In the CCD feasibility study, SEAs were asked whether they could distinguish between teachers

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⁹ Corrections to information on data availability, length of contract, and teacher identifiers and demographics were recommended by SEAs during the validation phase. Overall, there were relatively few discrepancies in the data or recommendations for changes made by the SEAs.

¹⁰ See exhibit A-1 for the listing of requested items in questions 2 and 4 of the CCD feasibility study.

¹¹ See exhibit A-4 for the protocol used during the telephone discussion.

and other instructional staff and whether information could be provided on various teacher characteristics. In the telephone discussion, SEA representatives were asked whether the SEA maintains individual teacher records with salary information, with follow-up questions about other data that may also be collected (for specific question wording, see appendix A). Based on the feasibility study and follow-up discussions, 34 of 40 reporting SEAs indicated that they collect earnings data on individual teachers (figure 1). An additional four states (California, Michigan, Montana, and Virginia) collect teacher-level data, but not salary information, 12 and two states (Massachusetts and New Hampshire) collect no teacher-level data at all. While New Hampshire does not plan to collect any individual data in the near future, Massachusetts' new data collection system, fully implemented in 2007, will keep individual records for teachers but will not include salary data.

Number of SEAs 40 34 35 30 25 20 15 11 10 6 5 0 Data collected by state Data not collected by state No response Compensation data status

Figure 1. Number of SEAs collecting teacher compensation data: 2006 and 2007

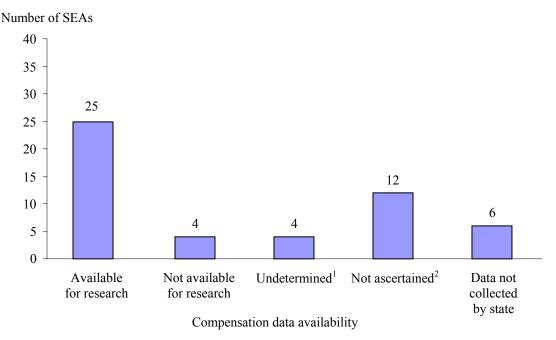
SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Next is the question of whether data collected by SEAs are available to researchers. In the CCD feasibility study, SEAs were asked when they might be able to send a teacher data file to NCES; in the telephone discussion, representatives were asked whether the SEA would be able to release a research version of the teacher data file (for specific question wording, see appendix A). As figure 2 shows, 25 of the SEAs indicated that the data could be made available, 4 indicated that the data would not be made

¹² While these states do not collect teacher-level salary data, they do maintain other teacher-level data. For example, the California SEA collects detailed teacher-level information, which can be combined with state teacher pay scale information to compute estimates of individual teachers' regular salaries.

available, ¹³ and 4 were unable to indicate whether their data would be made available. ¹⁴ Of the remaining 18 states, 6 did not collect these data and 12 did not respond. ¹⁵

Figure 2. Number of SEAs collecting teacher compensation data, by data availability for research: 2006 and 2007



¹ These SEAs do collect data, but their answers to whether the data were available to researchers were not definitive.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

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² These SEAs were nonrespondents to either the CCD feasibility study or the telephone discussion or to all questions pertaining to data availability.

¹³ The Arizona, Texas, Utah, and Washington SEAs each indicated in the CCD feasibility study that the data would not be available. The Arizona, Texas, and Washington SEAs did not respond to the telephone follow-up discussion, while the representative from Utah indicated uncertainty, in the telephone discussion, whether the data would be made available. See appendix C-3 for details on the determination of availability.

¹⁴ The Maryland, North Dakota, and West Virginia SEAs did not respond to the CCD feasibility study, and respondents to the telephone follow-up discussion were uncertain whether the data would be available. The Illinois SEA indicated no in the CCD feasibility study and respondents to the telephone discussion were uncertain whether the data would be available. Because during the SEA validation phase, the representative reiterated that data availability was undetermined, the decision was made to keep this case classified as undetermined.

¹⁵ Eleven states were nonrespondents to both the feasibility study and the telephone discussion, while one state was an item nonrespondent to the feasibility study question about data availability and a nonrespondent to the telephone discussion.

Among those SEAs that indicated that the data could be made available, the results from the discussions suggest that ease of access varies considerably by state. For example, some state agencies reported they have already made their data available to researchers. Missouri makes a version of its teacher data, with encrypted identifiers, available through a data center housed at a state university, and Alaska and Tennessee confirmed having made their data available both for research and lawsuits. Florida's data can also readily be made available for research; the state agency has already used its extensively detailed data to produce a comparative study of teacher pay involving 14 other states (Florida Department of Education 2006). In response to the CCD feasibility study, two states indicated that they would not provide the data; however, during the telephone discussion, Maine's SEA indicated that its data have been made available for research or lawsuits, and Idaho's SEA indicated that the data could be made available as long as Social Security numbers were not included. In contrast, Oklahoma's SEA indicated that it will provide its data to researchers only through cooperation with NCES.¹⁶

Critical Data Elements for Comparing Teacher Pay Within and Between States

Prior to the telephone discussions, several variables were identified as being essential for comparing teacher pay within and between states.¹⁷ These variables are those commonly considered in policy studies of teacher supply and demand and reflect the most important factors influencing teachers' pay: job title, contract length, FTE, type of pay (base salary, salary supplements, and total salary), years of experience, education level, and additional demographics such as race/ethnicity and gender. In addition, the ability to track teachers over time to examine changes in job location and pay requires the use of a unique and static identifier for each teacher record in the administrative datasets. The availability and definitions of these critical data elements are summarized in this section of the report.¹⁸

Base and Total Salary, and Salary Supplements. Differences in salary structures (e.g., contract length and teaching duties) require that a detailed analysis of teacher compensation account for total salary, including base salary and supplements to the base. In general, the definition of these variables is the same in all data systems: base salary corresponds to the salary specified in the teacher's contract for a given number of months (usually 9 or 10), salary supplements are additional sources of income, ¹⁹ and total salary is the sum of the base salary and all other salary supplements. While many states collect data only on base salary or total salary, some collect data on additional salary measures, such as pay for supplemental duties, summer pay, or bonus pay. The CCD feasibility study asked SEAs whether they collect data on base and total salary;

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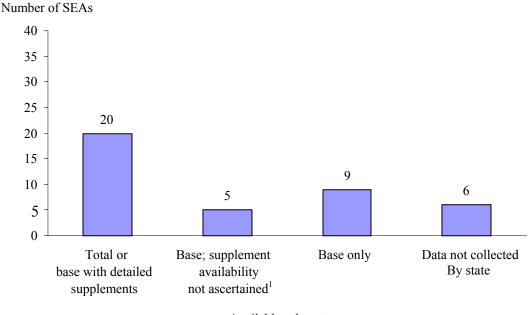
¹⁶ The Oklahoma respondent to the telephone discussion indicated that the data would only be made available to researchers if they were working with or for NCES. Despite the issues of ease of access, these states are classified as "available."

¹⁷ Variables were identified through literature reviews and through conversations with NCES staff. ¹⁸A detailed listing by state of which critical data elements are included in administrative records is included in table C-2.

¹⁹ Salary supplements include compensation for activities or factors as varied as holding National Board Certification, teaching Advanced Placement courses, achieving career ladder steps, sponsoring school clubs and organizations, coaching, performance pay, or other types of bonuses and extra compensation.

the telephone discussion asked about base and total salary, as well as salary supplements and bonuses. While there may be differences in the way states collect these data, the interrelationship between base, supplemental, and total salary allows for relatively simple manipulations to increase comparability across states. For example, data from states that report base and supplemental salary are comparable to data from states that report total salary because the separately collected components (base and supplements) can be summed to arrive at total salary.

Figure 3. Number of SEAs collecting teacher compensation data, by availability of total salary or base salary with supplemental pay, or base salary: 2006 and 2007



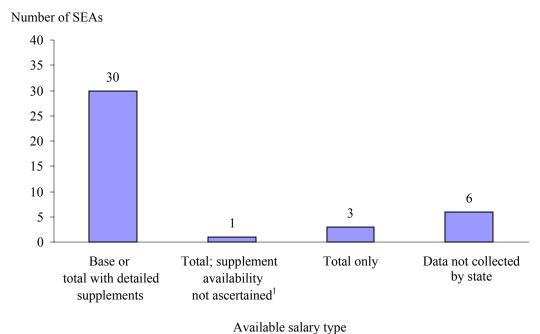
Available salary type

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Figures 3 and 4 summarize findings concerning the types of salary information contained in SEAs' teacher databases. Of the 34 states that collect teacher earnings data, 20 states collect either total salary or base salary with detailed supplements (which can be summed to equal total salary) (figure 3). In 9 states, only base salary is collected; in another 5 states, base salary is collected, but total salary is not, and it was not ascertained whether supplements are collected. When considering base salary (figure 4), 30 states collect either base salary or total salary with detailed supplements (which can be used to compute base salary). In 3 states, only total salary is collected; in one state, total salary is collected, but base salary is not, and it was not determined whether detailed supplements are collected.

¹ These SEAs did not participate in the telephone discussion; therefore, they were never asked if data on supplemental pay are collected.

Figure 4. Number of SEAs collecting teacher compensation data, by availability of base salary or total salary with supplemental pay, or total salary: 2006 and 2007



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

While total, base, and supplemental pay are clearly defined, these definitional distinctions are not always maintained in these SEA collections. In many instances, these concepts are confounded. For example, some states report that they collect only base salary; however, a closer look at their data dictionaries reveals that what is considered to be "base salary" includes all supplemental payments, stipends, or salaries paid for extra activities directly related to the teacher's primary duties (e.g., department chair). The amount is not considered a total salary because it does not include payments for teaching summer classes, for example, or other extracurricular activities (e.g., coaching). Although it is believed that a total salary measure would be largely consistent across states, it can not be ascertained whether they are entirely consistent based on the analyses conducted for this report. Researchers should take care to examine file documentation closely to understand the definitional issues related to salary in any analyses conducted.

School or district identifier. In order to make comparisons across districts or to control for district characteristics, a data file must contain school or district identifying information. The CCD feasibility study asked about the collection and availability of the NCES school ID (which can be used to identify the district); the telephone discussion did not ask about school or district identifiers. Of the 27 respondents to the

¹ One SEA did not participate in the telephone discussion; therefore, it was never asked if data on supplemental pay are collected.

CCD feasibility study who indicated that the SEA had teacher salary data, all reported having information on the NCES school ID.

Job title, FTE, and contract length. Since the SEA data may contain information for all district employees, job titles are necessary to distinguish between teachers and other professionals. In both the CCD feasibility study and the telephone discussions, SEAs were asked if they could distinguish between teachers and other professionals. All 34 states with teacher-level salary information collect information on job titles and are able to distinguish between teachers and other professionals, such as counselors or principals, in their administrative files.

Teachers can be defined in many ways. A restrictive definition may include classroom teachers only—that is, only those part- or full-time staff²⁰ with a classroom teaching assignment. A broader definition could incorporate all instructional staff, including classroom teachers, personnel providing student services (e.g., guidance counselors and psychologists), media specialists, classroom aides, and persons with other specified job titles. Results from the telephone discussions and SEA website reviews indicated that SEAs maintain detailed assignment codes for all certified staff, making it possible to use these codes to produce a consistent definition of "teacher."

To properly analyze and compare teacher compensation, teachers' length of contract and FTE status must be known. The CCD feasibility study asked about FTE, but not about contract length. The telephone discussion included questions about both contract length and FTE status. ²¹ Eighteen of the 26 SEAs with teacher data that participated in the telephone discussion reported that they collect information about the length of each teacher's contract in terms of days or months.

Most SEAs with teacher-level data collect FTE status, a measure of the time spent by each teacher performing his or her given duties. In 31 of the 34 states that report collecting teacher compensation data, employment records link FTE to specific teaching assignments or positions, which is important when an individual has multiple positions in a school.²² In the remaining 3 cases, only the total FTE is collected, even if some of the teacher's time is spent on nonteaching assignments, such as media specialist or school administrator. Tying FTE to specific assignments allows "apples-to-apples" comparisons of compensation for the same job.

A comprehensive analysis of teacher salary requires the ability to classify teachers according to job title, FTE status, and contract length simultaneously; thus, the most valuable data files will contain all three of these variables. Figure 5 shows the availability of these three basic employment variables in state agencies' data systems.

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²⁰ In Maine, New York, and Pennsylvania, part-time teachers are excluded from the definition.

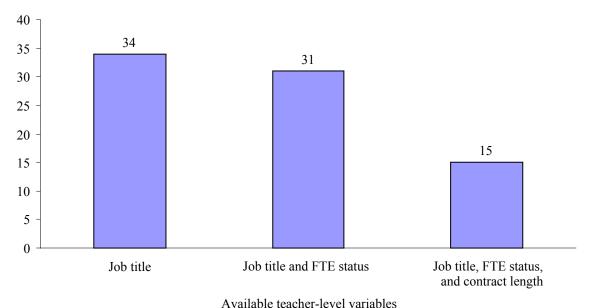
²¹ Nine states responded to the CCD feasibility study, but not to the telephone discussion; therefore, they are not included in figure 5 as collecting data on contract length. Thus, it is possible that the number of SEAs that collect contract length data is higher.

²² There are two notable exceptions: Florida and Ohio use a binary variable that qualifies a teacher's status as part time or full time.

While most SEAs databases include information on both job title and FTE, ²³ fewer SEAs report including contract length as well. Fifteen of the 18 states that report collecting data on contract length also collect data on job title and FTE status.

Figure 5. Number of SEAs collecting teacher compensation data, by availability of job title, full-time equivalent (FTE) status, and contract length: 2006 and 2007

Number of SEAs



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Teacher Experience and Education. These variables are highly relevant to teacher salary measures, and both the CCD feasibility study and the telephone discussion asked questions about the SEA's collection of data on teaching experience and the teacher's highest degree attained. All of the SEAs that reported collecting teacher salary data also reported collecting data on teacher experience and education. All of the states that collect teacher pay data also collect one or more measures of experience. District experience, the primary determinant of base pay, is reported by many SEAs.²⁴ The number of years of teaching experience is reported either as a total and/or specific to a location (e.g., in a state or school district). Highest degree is usually reported in several categories, including bachelor's, master's, or doctorate degree.

²³ It should also be noted that most SEAs are able to break down FTE by position (or assignment) to account for actual time spent on teaching.

²⁴ The CCD feasibility study and telephone discussions asked SEAs about "teaching experience." Results from the review of SEA documentation, as well as some of the information provided by participants in the telephone discussions suggested that many SEAs report "district experience." Some SEAs also collect state or total experience as well.

Teacher Demographics. The CCD feasibility study asked SEAs whether they collected data on additional teacher characteristics, such as teacher race and gender. Thirty-four SEAs provided information relevant to these items;²⁵ of these SEAs, 32 indicated that race and/or gender data were collected.²⁶

Teacher Identifiers. A unique teacher identifier makes it possible to link individual records over time for longitudinal studies such as analyses of turnover and mobility. It would also form the basis of meaningful comparisons across states. There have been numerous single-state studies of teacher turnover and mobility (e.g., Murnane and Olsen 1990; Hanushek, Kain, and Rivkin 2004; Podgursky, Monroe, and Watson 2004), and they implicitly assume that teachers have quit teaching when they disappear from the state administrative data system. In fact, these teachers may reappear in another state's public school system; however, the authors of this report are aware of no studies that have used state administrative data for interstate labor market analyses.

The CCD feasibility study did not ask about specific teacher identifiers, while the telephone discussion asked whether the data were linkable over time and, if so, how individual teachers were identified. Of the 34 SEAs that collect teacher compensation data, 20 identify teachers by their Social Security number. Eight others use a teacher license number or a randomly generated number. All of these SEAs can conduct longitudinal studies of teachers within their own states. The use of the Social Security number allows for longitudinal tracking of teachers even if they move between states, and would make it possible to study mobility between states as well. Confidentiality could be maintained by using a common algorithm to encrypt teachers' Social Security numbers.

Combinations of data elements. One of the goals of this study is to investigate the feasibility of using SEA administrative data to make interstate and interdistrict teacher salary comparisons while controlling for the influence of all of the critical variables discussed above, plus personal and/or school characteristics. Of particular interest is how many states can be involved in such comparisons and how extensively researchers will be able to control for covariates. Results from these analyses suggest that meaningful comparisons involving either total salary or base salary can be made across many states (see table 1). For example, base salary can be analyzed in 21 states, controlling for district characteristics and teacher demographics, experience, and education. A similar analysis, involving total salary, is possible in 18 states.

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²⁵ In addition to the respondents to the CCD feasibility study, two states, during the telephone discussion, directed the researcher to review materials on the SEA website containing this information; five SEAs provided this information during the SEA validation phase.

provided this information during the SEA validation phase.

The New York SEA collects data on gender, but not race. Upon the request of the SEA representative, New York's response is recorded as a "no."

²⁷ In addition to the 26 respondents to the CCD feasibility study, two SEAs included information on teacher identifiers in their response to the validation request.

Table 1. Number of SEA databases with available variables, by type of salary collected: 2006 and 2007

Available variables	Total	Base
Teacher ¹ and district characteristics	18	21
District characteristics only	18	23
No selected characteristics	20	30

¹ Teacher characteristics include teacher experience, education, and demographics.

Note: Questions on teacher demographics and school or district identifiers were asked only of respondents to the CCD feasibility study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Summary

While a detailed analytic model would include teacher salary data for all states, we find that the current number of SEAs with available data should be able to facilitate meaningful analyses. Additionally, more SEAs (e.g., Massachusetts) are beginning to implement data collection systems. The number of states that use Social Security numbers as a record identifier suggests the potential for a secure, unique identifier across states and over time. If SEAs are able and willing to coordinate with each other and a third party to develop this unique identifier, there is great potential for interstate and/or longitudinal analyses of teachers.

IV. Potential Uses and Limitations of Existing Data

Given their coverage and content, the SEA data systems can potentially be used to provide useful insights on teacher labor markets utilizing both cross-sectional and longitudinal designs. We consider examples of each in turn.

(a) Average Teacher Salary and Career Salary Growth

It is possible to compare experience and education-adjusted teacher pay across states. This could be done for base or total pay, taking into account the definitional issues discussed in the previous section. One option would be to compare relative pay at different points in teachers' careers (e.g., bachelor's degree, master's degree plus 10 years' experience, master's degree plus 20 years' experience). One would want to do this for several years to assess trends. It is also possible to factor in district or school characteristics, such as urban areas/rural areas, high poverty/low poverty, and other covariates. Such descriptive exercises would permit analysis of how relative salaries change when the concept of pay varies. For example, one could examine whether the association between teacher career trajectory and pay differs when considering base and total salary. Researchers would also be able to determine how much bias arises when one does not control for covariates. Finally, for states with linkable records, researchers could compare career growth in pay across states and districts.

(b) Teacher Turnover and Mobility

As with studies that use SASS's Teacher Follow-Up Survey (TFS), researchers would be able to use SEA teacher compensation data to track mobility by experience levels. However, the SEA data would allow for a much more detailed analysis. TFS, for example, does not allow an analysis of teacher "stop out" behavior (i.e., temporary exits). As a result, teacher replacement needs are often overestimated. Multiyear studies using state data systems would permit analyses of the return of teachers after temporary exits.

Researchers could also disaggregate these turnover and mobility data by race, gender, and other district or market characteristics (e.g., they could report values for specific large urban districts), which cannot be done with data from the TFS because of the study's small sample size. In addition, these multistate data would permit interstate comparisons of teacher retirement behavior. Other studies could shed light on the possible effects of policy interventions. For example, a large, multistate longitudinal teacher data file would make it possible to examine the effects of statewide or districtwide policies on teacher retention and mobility.

It would be possible to examine interstate teacher mobility by linking records across the state systems.²⁹ For example, if all states using Social Security numbers as a teacher identifier agreed to use a standard encryption algorithm, it would be possible to track teacher mobility across those states.

While there are many possible uses for these teacher-level compensation data, there are several limitations. For example, only 34 states report that they collect these data, and only 25 of these states indicated that they are currently willing to make the data available to NCES and/or researchers. Additionally, given that there are no requirements that SEAs collect or report these data, participation by states may fluctuate over time, making longitudinal analyses difficult. Similarly, the fact that not all states would be participating would result in a coverage issue that could limit or bias conclusions based on an analysis of the available data. One of the most powerful potential uses of these data is for longitudinal analyses across states that would allow researchers to investigate the flow of teachers back into teaching after a temporary exit. However, this analysis requires that states uniquely identify teachers, and do so in a uniform manner across all states. Many states already identify teachers using Social Security numbers, which (as previously noted) could be encrypted. This issue is likely

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²⁸ It would also be interesting to link the multistate turnover data to multistate labor market data from the Bureau of Labor Statistics to see how teacher mobility compares to that of the workforce as a whole. In particular, one would like to analyze the relationship between teacher turnover and the overall level of unemployment.

²⁹ However, it should be noted that state confidentiality requirements may hinder interstate mobility record linking.

the most difficult to resolve, as it would require that all states participate, 30 and that they agree on a common encryption system.

Even with these limitations, the results of this research suggest that there is a wealth of teacher compensation data that states currently collect and that a number of states are willing to make these data available for research. Additionally, a majority of states collect salary data in a form that allows for comparability across states, and these data include critical variables that would be required for meaningful analyses. SEA teacher compensation data are a promising source of information that would allow researchers to more fully research a crucial aspect of education policy.

Recent collaboration between states and NCES has confirmed the feasibility of developing this data resource. In 2007, seven states³¹ participated in a pilot data collection, providing teacher compensation data to NCES. In addition to salary information, data submitted by states include many of the critical variables discussed in this report, including school ID, and teacher characteristics such as years of experience, highest degree earned, full-/part-time status, year of birth, and race/ethnicity and gender. States assign a unique identifier to each teacher, allowing for longitudinal tracking of teachers within a state. The 2008 collection is expected to include up to 20 states (including the seven states that participated in 2007), and NCES expects to expand this collection over time.

V. Uses and Limitations of State Teacher Pension Data

Many SEAs collect teacher-level data on compensation as well as on a variety of other teacher characteristics (e.g., age, experience, demographic characteristics). However, not all states collect such data. Moreover, while such data are generally more accurate than household survey data, if some variables are not routinely audited, they may contain reporting errors. In addition, there may be differences in the way states collect data on certain variables, how those variables are defined or created, and what data are included in data files. Thus, it is useful to consider alternative sources of administrative teacher data.

One such alternative that might be used to construct measures of teacher compensation, especially in cases where SEAs do not collect teacher-level data, is teacher pension fund data. Therefore this section provides a brief examination of the feasibility of using such data in teacher labor market studies. In theory, teacher pension funds should track at least some of the variables collected in the SEA teacher compensation data. Since teacher pensions are tied to earned salaries, associated administrative data must also track teacher earnings. Moreover, because benefit formulas use experience to determine retirement benefits, some measure of tenure must be collected as well. For

³⁰ An examination of teacher mobility or turnover is only meaningful if all states participate. With less than full participation, it would not be possible to determine whether a teacher is no longer in the records because of departure from the field or to a non-participating state.

³¹ States that participated in 2007 are Arizona, Arkansas, Colorado, Florida, Iowa, Missouri, and Oklahoma.

this report, several large state pension funds were surveyed about their data collection. Six states were chosen either because they participated in the CCD feasibility study but not the telephone discussion (Alabama and Washington), because they have pension systems specifically for teachers and other K-12 professionals (Arkansas and Missouri), or because their pension systems cover public employees other than teachers (Colorado and New Jersey).32

The administrators of these pension funds were asked about their data systems to determine whether they contained elements similar to those kept by SEAs. In addition to teaching experience and education background, the administrators were asked about job title (i.e., whether teachers can be distinguished from other positions such as principals or central office administrators), total and base salary (as defined above), and length of contract. They were also asked whether they are willing to make their data available for research.

As compared to the data collected by SEAs, the results of the conversations with pension fund administrators suggested a number of significant limitations to the pension data as a data source for the type of research examined in this report. This is not surprising, given that pension fund data are collected for a relatively narrow purpose – providing retirement payments – and not the much broader purposes of the SEAs. For example, two of the pension funds did not collect data on job titles. None of the pension administrators reported that they collect information on teacher education levels, while only three reported collecting a measure of actual teaching experience.³³

Type of salary is reported differently within and across state pension funds. Since state statute and local operating procedures affect salary and contract structures for both certificated and noncertificated staff, type of salary and length of contract are reported in many ways. For example, in Arkansas and New Jersey, pension funds collect data only on base salary (i.e., the amount specified in the contract). By contrast, in Colorado and Missouri, "includable salary" is legally defined and corresponding statutes dictate the information required from employers. In Alabama, salary in the school system is defined by the county (and, thus, is not uniform within the state), and in Washington, the statutory definitions of salary for the purpose of computing pension annuities are complex and do not correspond well to the definitions of total, base, and supplemental pay. In short, direct "apples-to-apples" comparisons of teacher pay may not be possible.

Finally, because pension systems often report to independent boards, they are not necessarily obligated to share data. All six pension systems indicated that they would share data depending on the type of request.

³³ Pension benefits are generally calculated on legally defined years of "pensionable" service, and pension administrators indicated that service years do not, in general, correspond to years of teaching experience.

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³² It may be the case that different data are collected in pension systems just for K-12 professionals as compared to those that enroll a more heterogeneous group of state and local employees.

The analysis of this small sample suggests that, from a research perspective, data on teacher characteristics and pay from pension systems are likely inferior to data from systems maintained by SEAs. However, there is at least one interesting research question to which these data may contribute. Many state pension systems allow educators to return to teaching, either part or full time, after retirement (sometimes termed "double dipping"), while still collecting pension benefits. Merging pension fund data with SEA data may allow researchers to expand measures of total compensation to combine pension benefits with current teaching salaries for a more complete measure of total compensation.

VI. Conclusions

The goal of this project was to learn more about the data collected by state education agencies, specifically, to determine the extent to which individual records of employment and compensation exist for teachers in public schools, how such records might be accessed, and what elements critical for making comparisons are commonly collected. We found that many state education agencies keep fairly detailed records on individual teachers. Specifically, 34 of the 40 participating state agencies indicated that they did maintain individual compensation and employment records of teachers, and many of these states have granted, or indicate a willingness to grant, researchers access to their data.

In some states, procedures to gain access to these data may be relatively simple; in others, the data may not be made available at all. Some agencies have already created research versions of their teacher datasets (with, for example, encrypted identifiers) that are available to researchers for labor market studies. In other states, access may vary according to request, with some data only available to researchers in coordination with NCES. While some SEAs did indicate that their data will not be made available to either NCES or researchers, it is reasonable to expect that over time an increasing number of SEAs will collect and make available data on teacher compensation.

Several critical data elements are common in varying degrees across SEA databases, including job title, contract length, full-time status, base or total salary, and education and experience level. However, definitional issues associated with many of these data elements may require further clarification before true "apples-to-apples" comparisons can be made using data from multiple SEAs' data systems.

Pooling these state teacher files into a large multistate file would permit disaggregated comparative studies of teacher pay. These studies would not only permit overall comparisons of pay, but also comparisons of teacher pay at various points along typical career trajectories (e.g., bachelor's degree with no experience, master's degree with 10 years' experience), with breakdowns by teacher demographics and state or district characteristics. Unique teacher IDs in these files would also permit multistate studies of teacher mobility and turnover.

Finally, analysis of the data elements available in pension fund data from a sample of 6 states suggests that these data do not appear to be as useful as SEA data in making interstate and interdstrict comparisons of teacher pay.

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Appendix A: Data Collection Materials

Exhibit A-1. NCES CCD Feasibility Study

	NCES CCD T	eacher Survey Questionnaire July 2006								
1.	Can you distinguish between teachers (as defined be salary schedule?	below) and other staff that may be on the same								
2.	If you can submit a data file in Spring 2007,	Current Year (CY) Data Prior Year (PY) Data								
	which data items can you report?	Check all that apply.								
	•	1. NCES School ID (CY) 9. NCES School ID (PY)								
		2. FTE Current Year (CY) 10. FTE Prior Year (PY)								
		☐ 3. Base Salary (CY) ☐ 11. Base Salary (PY)								
		4. Highest Degree (CY) 12. Total Salary (PY)								
		5. Teaching Experience (CY) 13. Defined benefit from LEA (PY)								
		6. Race Current Year (CY) 14. Defined benefit from State (PY								
		7. Gender (CY) 15. Contributions to 403(b) (PY)								
		8. Program (CY) 16. Health & Hospitalization (PY)								
3.	If you have data for each teacher but do not feel you can send it to NCES, please tell us why?	17. All Other Benefits (PY)								
4.	Which data items will be difficult to collect?	Current Year (CY) Data Prior Year (PY) Data								
		Check all that apply.								
		1. NCES School ID (CY) 9. NCES School ID (PY) 2. FTE Current Year (CY) 10. FTE Prior Year (PY)								
		□ 2. FTE Current Year (CY) □ 10. FTE Prior Year (PY) □ 3. Base Salary (CY) □ 11. Base Salary (PY)								
		11. Dase Salary (P1) 12. Total Salary (PY)								
		5. Teaching Experience (CY) 13. Defined benefit from LEA (PY)								
		6. Race Current Year (CY) 14. Defined benefit from State (PY)								
		7. Gender (CY) 15. Contributions to 403(b) (PY)								
		8. Program (CY) 16. Health & Hospitalization (PY)								
		17. All Other Benefits (PY)								
	When would you be able to send us a complete dat data items requested? Are there data items that you would like to see	ta file with all of the 2007 2008 2009 Never								
7.	added to this collection? When would be the best time of year for NCES to									
	collect these data	☐ Fall ☐ Winter ☐ Spring ☐ Summer								
8.	What could NCES do to make it easier to report these data?									
9.	What information system(s) in your agency maintains these data?									
10.	Please provide the name and contact information for the best person to gather and send these data to us. (name, phone number and e-mail address).									
11.	For your teacher FTE data, is it possible for a single	e teacher to be more than 1.0 FTE?								
12.	How do you recognize extra hours of work in your FTE count?									
13.	Can you report the actual number of years of teach (as opposed to where he or she is on the salary softhe district gives credit for in determining the teacher	nedule or the number of years								
14.	NCES would like to do a pilot collection this Fall. W the pilot collection?	ould you be willing to participate in ☐ Yes ☐ No								
	Teacher Definition Only data for teaching staff should be included in this survey. Teachers are defined as: full-time or part-time public school teachers of children prekindergarten through grade 12, including ungraded classes. Include only teachers with a teaching certificate. Include long-term/permanent substitute teachers. Exclude teaching assistants and aides, adult education teachers, short-term subtitute teachers, librarians, guidance counselors, and other school staff. If a teacher teaches in more than one school, then either code them to the school in which they teach the most time, or code them to a school district only. There should only be one record for each teacher. Send to: Frank Johnson. E-mail: frank.johnson@ed.gov Phone: 202-502-7362 FAX: 202-502-7475									
l	J.S. Department of Education, National Center for Ed	ducation Statistics, 1990 K St. NW, Suite 900, Washington, DC 20006-565								

Exhibit A-2. Follow-Up E-Mail to CCD Feasibility Study Respondents

Dear	,

We are working with Frank Johnson and other staff at NCES to learn more about state data on teacher compensation. Your name was listed as the contact person for information on teacher compensation data on a survey recently completed for Frank. We appreciate your agency's prompt reply to Mr. Johnson's survey and would like to follow up with you to make sure we have an accurate understanding of your state's data.

We are compiling a database on the types of data that are collected on teacher compensation by state. Our first step was to research your agency's web site to find reporting instructions for school districts. We found the document(s) listed below that are related to district reporting of teacher and teacher compensation data.

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document 1 – URL – short description document 2 – URL – short description
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. . .

Please let us know if there are other documents we should be examining.

Finally, we would appreciate it if you could schedule a time to talk with us on the phone about the teacher and compensation data your agency collects. Simply reply to this email with one or two good times for us to call and we'll confirm the time and then call you.

Thank you very much for your assistance.

Michael Podgursky Professor of Economics

Michel-Ange Pantal, Ph.D. Research Assistant Professor

Exhibit A-3. Follow-Up E-Mail to CCD Feasibility Study Nonrespondents

Dear,
We are working with Frank Johnson and other staff at NCES to learn more about data on teacher compensation collected by the states. The NCES is investigating the feasibility of pooling data from the states to construct better measures of the level and trends of teacher pay (e.g., controlling for teacher experience, locale). We have written to you because you are shown as the contact person in your agency for questions related to the Common Core of Data.
In particular, we are interested in whether your agency collects teacher-level data on compensation and other teacher characteristics. We are compiling a database on the types of data that are collected on teacher compensation by state. Our first step was to research your agency's web site to find reporting instructions for school districts. We found the document(s) listed below that are related to district reporting of teacher and teacher compensation data.
document 1 – URL – short description document 2 – URL – short description
Please let us know if there are other documents we should be examining.
Finally, we would appreciate it if you could schedule a time to talk with us on the phone about the teacher and compensation data your agency collects. Simply reply to this email with one or two good times for us to call and we'll respond to confirm the time and then call you.
Your assistance in this important endeavor is appreciated.
Sincerely,
Michael Podgursky Professor of Economics

Michel-Ange Pantal, Ph.D. Research Assistant Professor

Exhibit A-4. Teacher Compensation Discussion Protocol

We are trying to determine which states would be able to calculate average base salary and average total salary for all full-time teachers using a common set of definitions. We have reviewed information on your department's web site about the kinds of data that districts report to you and want to clarify answers to a few questions.

- 1. Are you able to distinguish between teachers and non-teachers in your data file?
- 2. Do you have individual teacher records with data on base salary and/or total salary? (If the answer is no, does your agency have plans to collect such data in the near future? If so, when? How do you calculate average teacher salaries? How do you decide which teachers to include or exclude in your calculations?)
- 3. Are you able to identify full-time teachers in your database? (FTE = 1.0)
- 4. Is it possible for you to break the FTE down by assignments?
- 5. What type of data do you collect about the length of teachers' contracts?
- 6. Do your teacher records include total years of teaching experience? Years of experience in the district?
- 7. Are you able to report each full-time teacher's highest degree as a bachelors, masters or doctorate?
- 8. What kind of data do you collect on salary supplements and bonuses? Can you explain any differences between base salary and total salary?
- 9. Are these teacher wage records linkable over time?
- 10. How far back do these data go?
- 11. Would you be able to release a research version of the teacher data that does not permit identification of individual teachers, but that can be used to analyze teacher turnover, mobility, pay and other labor market factors?

Do you have any questions for us?

Thank you for your time

Exhibit A-5. SEA Validation Request Letter

Thank you again for your assistance.

Michael Podgursky Professor of Economics

Dear

Michel-Ange Pantal, Ph.D. Research Assistant Professor

Appendix B: Sources of Information

Table B-1. Sources of information, by state: 2006 and 2007

	CCD		SEA			CCD		SEA	
	feasibility	Telephone	website	SEA		feasibility	Telephone	website	SEA
State	study	discussion	search	validation	State	study	discussion	search	validation
Total	31	31	24	23	Missouri	Yes	Yes	Yes	Yes
Alabama	Yes	No	Yes	No	Montana	Yes	Yes	No	Yes
Alaska	Yes	Yes	Yes	Yes	Nebraska	Yes	No	Yes	Yes
Arizona	Yes	No	No	No	Nevada	Yes	Yes	No	Yes
Arkansas	Yes	Yes	Yes	No	New Hampshire	No	Yes	No	Yes
California	Yes	Yes	No	Yes					
					New Jersey	Yes	Yes	Yes	Yes
Colorado	Yes	No	Yes	Yes	New Mexico	No	No	Yes	No
Connecticut	No	Yes	Yes	Yes	New York	Yes	Yes	Yes	No
Delaware	Yes	Yes	No	Yes	North Carolina	No	No	No	No
District of Columbia	No	No	No	No	North Dakota	No	Yes	Yes	No
Florida	Yes	Yes	Yes	No					
					Ohio	No	Yes	Yes	Yes
Georgia	No	Yes	Yes	Yes	Oklahoma	Yes	Yes	No	Yes
Hawaii	No	No	No	Yes	Oregon	No	Yes	No	Yes
Idaho	Yes	Yes	Yes	No	Pennsylvania	No	Yes	Yes	Yes
Illinois	Yes	Yes	Yes	Yes	Rhode Island	No	No	No	No
Indiana	No	No	No	No					
					South Carolina	No	No	No	No
Iowa	Yes	Yes	No	No	South Dakota	No	No	No	No
Kansas	Yes	Yes	Yes	No	Tennessee	Yes	Yes	No	No
Kentucky	Yes	Yes	Yes	Yes	Texas	Yes	No	Yes	No
Louisiana	Yes	Yes	Yes	Yes	Utah	Yes	Yes	No	No
Maine	Yes	Yes	Yes	Yes					
					Vermont	No	No	No	No
Maryland	No	Yes	No	No	Virginia	Yes	No	No	No
Massachusetts	Yes	Yes	No	Yes	Washington	Yes	No	Yes	No
Michigan	Yes	Yes	No	Yes	West Virginia	No	Yes	No	No
Minnesota	Yes	No	Yes	No	Wisconsin	Yes	No	No	No
Mississippi	No	No	No	No	Wyoming	No	No	No	No

Note: "Yes" indicates information gathered through source.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Appendix C: Data Tables

Table C-1. States with teacher-level compensation data: 2006 and 2007

	Teacher-level		Teacher-level
State	compensation data	State	compensation data
Total	34		
Alabama	Yes	Missouri	Yes
Alaska	Yes	Montana	No
Arkansas	Yes	Nebraska	Yes
Arizona	Yes	Nevada	Yes
California	No	New Hampshire	No
Colorado	Yes	New Jersey	Yes
Connecticut	Yes	New Mexico	_
Delaware	Yes	New York	Yes
District of Columbia	_	North Carolina	_
Florida	Yes	North Dakota	Yes
Georgia	Yes	Ohio	Yes
Hawaii	_	Oklahoma	Yes
Idaho	Yes	Oregon	Yes
Illinois	Yes	Pennsylvania	Yes
Indiana	-	Rhode Island	_
Iowa	Yes	South Carolina	_
Kansas	Yes	South Dakota	_
Kentucky	Yes	Tennessee	Yes
Louisiana	Yes	Texas	Yes
Maine	Yes	Utah	Yes
Maryland	Yes	Vermont	_
Massachusetts	No	Virginia	No
Michigan	No	Washington	Yes
Minnesota	Yes	West Virginia	Yes
Mississippi	_	Wisconsin	Yes
		Wyoming	_

[–] Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

Table C-2: Data elements in state education agency teacher compensation databases: 2006 and 2007

	Teacher	District			Teaching	Highest	Demo-	Base	Total	Pay	Contract	Available for
State		identifier	Job title	FTE	experience	degree	graphics	salary	salary	supplements	length	research
Total	28	27	34	31	34	34	32	30	20	11	18	25
Alabama	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	_	_	Yes
Alaska	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Arizona	_	Yes	Yes	Yes	Yes	Yes	No	Yes	No	_	_	No
Arkansas	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
California	†	†	†	†	†	†	†	†	†	†	†	†
Colorado	SSN 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	_	_	Yes
Connecticut	SSN	_	Yes	Yes	Yes	Yes	Yes 1	No	Yes	No	Yes	Yes
Delaware	State ID	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
District of Columbia	_	_	_	_	_	_	_	_	_	_	_	_
Florida	SSN	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Georgia	SSN	_	Yes	Yes	Yes	Yes	Yes 1	Yes	_	_	Yes	Yes
Hawaii	_	_	_	_	_	_	_	_	_	_	_	_
Idaho	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illinois	SSN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Undetermined
Indiana	_	_	_	_	_	_	_	_	_	_	_	_
Iowa	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kansas	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Kentucky	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Louisiana	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maine	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Maryland	SSN	_	Yes	Yes	Yes	Yes	Yes ²	Yes	No	No	Yes	Undetermined
Massachusetts	†	†	†	†	†	†	†	†	†	†	†	†
Michigan	†	†	†	†	†	†	†	†	†	†	†	†
Minnesota	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	<u>-</u>	_	Yes
Mississippi	_	_	_	_	_	_	_	_	_	-	_	_
Missouri	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Montana	†	†	†	†	†	†	†	†	†	†	†	†
Nebraska	SSN 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	_	_	Yes

See notes at end of table.

Table C-2: Data elements in state education agency teacher compensation databases: 2006 and 2007–Continued

Table C-2. Data	Teacher	District			Teaching	Highest	Demo-	Base	Total	Pay	Contract	Available for
State	identifier	identifier	Job title	FTE	experience	degree	graphics	salary	salary	supplements	length	research
Nevada	LN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	_	_	Yes
New Hampshire	†	†	†	†	†	†	†	†	†	†	†	†
New Jersey	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
New Mexico	_	_	_	_	_	_	_	_	_	_	_	_
New York	SSN	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes
North Carolina	_	_	_	_	_	_	_	_	_	_	_	_
North Dakota	LN	_	Yes	_	Yes	Yes	Yes ²	Yes	Yes	Yes	Yes	Undetermined
Ohio	State ID	†	Yes	Yes	Yes	Yes	Yes 1	Yes	No	No	No	Yes
Oklahoma	LN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oregon	State ID	_	Yes	Yes	Yes	Yes	Yes ¹	Yes	No	No	Yes	Yes
Pennsylvania	Random	_	Yes	Yes	Yes	Yes	Yes 1	Yes	No	No	No	Yes
Rhode Island	_	_	_	_	_	_	_	_	_	_	_	_
South Carolina	_	_	_	_	_	_	_	_	_	_	_	_
South Dakota	_	_	_	_	_	_	_	_	_	_	_	_
Tennessee	SSN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Texas	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	_	_	No
Utah	Random	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Vermont	_	Yes	_	_	_	_	_	_	_	_	_	_
Virginia	†	†	†	†	†	†	†	†	†	†	†	†
Washington	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	_	_	No
West Virginia	SSN	_	Yes	_	Yes	Yes	Yes ³	Yes	No	No	Yes	Undetermined
Wisconsin	_	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	_	_	_
Wyoming	_	_	_	_	_	_	_	_	_	_	_	_

Not available.

Note: SSN indicates Social Security number. LN indicates license number. FTE indicates full-time equivalency.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

[†] Not applicable. Teacher compensation data not collected by state.

¹ Information obtained based on feedback received during state education agency (SEA) validation.

² Information obtained based on SEA website search.

³ Information obtained based on data documentation sent by SEA.

Table C-3. Teacher compensation data availability for research, by source and state: 2006 and 2007

	CCD		-		CCD		
	feasibility		Determination of		feasibility		Determination
State	study	discussion	availability	State	study	dicsussion	of availability
Alabama	Yes	_	Yes	Montana	†	†	†
Alaska	Yes	Yes	Yes	Nebraska	Yes	_	Yes
Arizona	No	_	No	Nevada	Yes	Yes	Yes
Arkansas	Yes	Yes	Yes	New Hampshire	†	†	†
California	†	†	†	New Jersey	Yes	Yes	Yes
Colorado	Yes	_	Yes	New Mexico	_	_	_
Connecticut	_	Undetermined	Yes ¹	New York	Yes	Undetermined	Yes
Delaware District of	Yes	Yes	Yes	North Carolina	_	_	_
Columbia	_	_	_	North Dakota	_	Undetermined	Undetermined
Florida	Yes	Yes	Yes	Ohio	_	Yes	Yes
Georgia	_	Yes	Yes	Oklahoma	Yes	Yes	Yes
Hawaii	_	_	_	Oregon	_	Undetermined	Yes ¹
Idaho	No	Yes	Yes	Pennsylvania	_	Yes	Yes ¹
Illinois	No	Undetermined	Undetermined ¹	Rhode Island	_	_	_
Indiana	_	_	_	South Carolina	_	_	_
Iowa	Yes	Yes	Yes	South Dakota	_	_	_
Kansas	_	Yes	Yes	Tennessee	Yes	Yes	Yes
Kentucky	Yes	Yes	Yes	Texas	No	_	No
Louisiana	Yes	Undetermined	Yes	Utah	No	Undetermined	No
Maine	No	Yes	Yes	Vermont	_	_	_
Maryland	_	Undetermined	Undetermined	Virginia	†	†	†
Massachusetts	†	†	†	Washington	No	_	No
Michigan	†	†	†	West Virginia	_	Undetermined	Undetermined
Minnesota	Yes	_	Yes	Wisconsin	_	_	_
Mississippi	_	_	_	Wyoming	_	_	_
Missouri	Yes	Yes	Yes				

[–] Not available.

NOTE: Undetermined means that the respondent was unable to definitively indicate whether the data would be available. These responses are not included in the total.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD) feasibility study, 2006; and telephone discussions with state education agency (SEA) representatives, 2007.

[†] Not applicable. Teacher compensation data not collected by state.

Determination made on the basis of feedback received during SEA validation.