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ABSTRACT

This paper outlines an agenda of research on teachers and schooling utilizing the National Center for Education Statistics Schools and Staffing Survey (SASS). SASS focuses on teachers and schools, and consists of linked surveys of schools, districts, principals, and teachers. The primary purpose of this paper is to revisit the genesis of SASS in order to provide an agenda and outline of research issues for which SASS data could be used. Section 1 explains the rationale for SASS, which grew out of the national school reform movement of the 1980s and the need for information and data on U.S. schools and teachers. Section 2 examines the design of SASS (teacher and school samples, multiple respondents, state data, triennial cycle, and supplements). Section 3 describes research using SASS, noting the research agenda and specific research topics: teacher shortages, teacher demand and recruitment, teacher turnover and attrition, problems and prospects of beginning teachers, sources and qualifications of new teacher hires, teacher compensation, teaching as a profession, teacher evaluation, school size, international comparisons of teachers, school administration, public versus private schools, control and influence in schools, school community, at-risk and problem schools, merit pay programs, and school librarians and libraries. Section 4 describes how the report provides a basis for an agenda and outline of important research issues that SASS could be used to address in the future. (Contains 77 references.) (SM)

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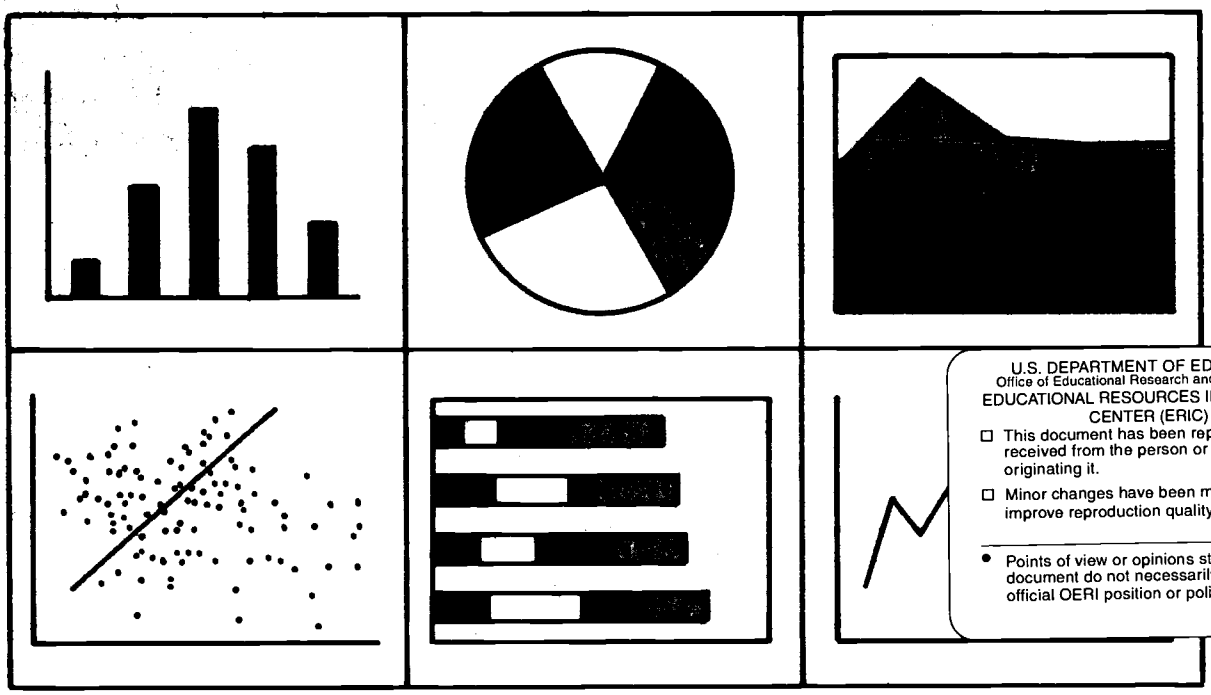
Working Paper Series

An Agenda for Research on Teachers and Schools:

Revisiting NCES' Schools and Staffing Survey

Working Paper No. 95-18 November 1995



U.S. Department of Education
Office of Educational Research and Improvement

An Agenda for Research on Teachers and Schools:

Revisiting NCES' Schools and Staffing Survey

Working Paper No. 95-18 November 1995

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November 1995

Foreword

Each year a large number of written documents are generated by NCES staff and individuals commissioned by NCES which provide preliminary analyses of survey results and address technical, methodological, and evaluation issues. Even though they are not formally published, these documents reflect a tremendous amount of unique expertise, knowledge, and experience.

The *Working Paper Series* was created in order to preserve the information contained in these documents and to promote the sharing of valuable work experience and knowledge. However, these documents were prepared under different formats and did not undergo vigorous NCES publication review and editing prior to their inclusion in the series. Consequently, we encourage users of the series to consult the individual authors for citations.

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An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey

Richard M. Ingersoll

November 1995

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Introduction

This paper outlines an agenda of research on teachers and schools utilizing NCES' Schools and Staffing Survey. SASS is an unusual education survey. Unlike most major large—scale nationally representative surveys, SASS does not focus on students, nor on feature measures of student achievement and student outcomes. Instead, SASS focuses on teachers and schools. Indeed, it is probably the largest and most comprehensive survey of teachers in existence. SASS consists of linked surveys of schools, districts, principals, and teachers. It has obtained a wealth of information on teachers—their backgrounds, training, attitudes, behavior—and on schools—their principals, working conditions, contexts, characteristics, processes, and climate.

NCES developed SASS in the late 1980s in order to gather and analyze information on a number of crucial education policy issues. This paper revisits these purposes and rationales. It reviews what SASS was originally intended to accomplish and the kinds of studies, analyses, and projects SASS was designed to support. This paper does not, however, seek to evaluate or catalog existing SASS-based research. Its primary purpose is to revisit the genesis of SASS in order to provide an agenda and outline of research issues that SASS data could be used to address in the next several years. The objective of this paper is to review the purposes of SASS in order to guide and assist NCES in its planning for the future of SASS.

This paper begins with a brief review of the background and rationale for SASS. It then summarizes some of the features and strengths of the design of SASS. Finally, it turns to a closer examination of the kinds of specific studies that have been and could be undertaken utilizing SASS data.

1 The Rationale for SASS

The idea for a new major national survey of teachers and schools arose in the context of the national school reform movement of the 1980s. This movement and its numerous blue-ribbon commissions, national studies, and well-publicized reports focused renewed attention on both the importance of and problems besetting teachers and schools in the U.S. (National Commission on Excellence in Education 1983; Holmes Group 1986; Carnegie Forum 1986; National Governor's Association 1987). This movement also brought recognition of the dearth of information and data on the nation's teachers and schools. This recognition, in turn, led to increased demands on NCES, as the leading provider of national education data in the United States. The development of SASS was one of NCES' responses to these demands.

One major education problem to surface in this period was the threat of teacher shortages. A great deal of alarm ensued upon the publication of several studies in the early 1980s predicting the occurrence of widespread shortages of elementary and secondary school teachers in the United States by the 1990s (e.g., Darling-Hammond 1984; Good and Hinkel 1983). These predictions came as a complete surprise to many. Throughout much of the 1970s, there appeared to be a surplus of school teachers. Indeed, reductions in the teaching force through layoffs had been common to many schools and districts in the United States. However, analysts of teacher supply and demand made a compelling case that teacher supply was drastically decreasing, while demand for new teachers was steadily increasing. Without proper counter measures, they predicted, widespread shortages would result.

According to this view, fewer and less qualified college graduates were choosing to teach, while more children of the "baby boom" generation were entering the school system, driving up enrollments and, hence, hiring. Moreover, a growing imbalance between supply and demand was being exacerbated, according to this view, because of problems of teacher retention. A high level of teacher attrition, these analysts argued, was a large source of demand for new teachers and a key factor behind the predicted shortages (e.g., Grissmer and Kirby 1987; Murnane et al. 1992; National Academy of Sciences 1987). These analysts stressed, however, that understanding these imbalances was severely hampered by a lack of data and information on many of the key components and aspects of teacher supply, demand, and quality (e.g., Darling-Hammond and Hudson 1990; Murnane and Raizen 1988; Shavelson, McDonnell, and Oakes 1989; Grissmer and Kirby 1987).

For example, the necessary data were not available to either profile the nation's teaching force or to assess the condition of teaching in the nation's schools. More specifically, the necessary data were not available for making accurate aggregate counts of teachers, nor for making disaggregated counts of teachers by sector, field, state, or location. Few data existed on the qualifications or demographic characteristics of teachers. Moreover, national data on teachers' working conditions, their workloads, their salaries, their family incomes, and career and work histories and plans did not exist. Researchers were also unable to determine the sources of teacher supply, the mobility patterns of teachers, or the levels, reasons for, and destinations of teacher turnover and attrition. As a result of these gaps in information, policy analysts were unable to answer many pressing questions surrounding teacher supply, demand, and quality.

The problem of potential teacher shortages was, of course, only one of many education problems to resurface in the 1980s. Along with increased recognition of the importance of data and research on the characteristics of the teaching workforce, there was a parallel trend towards schools and school districts among both researchers and policymakers.

For policymakers, a growing national interest in school reforms, such as school-based management, school choice, and educational restructuring, led to increasing attention to the nature and consequences of the organizational, managerial, and administrative aspects of schools. Moreover, for researchers, a continuing interest in the nature of "school effects," as opposed to the effects of student, community, and family background characteristics on student outcomes, led to increasing attention to the character and characteristics of schools.

As a result, over the past decade there has been an upsurge of interest in understanding what about schools themselves fosters improved student learning and maturity. Interest has also increased in understanding how schools collectively function as organizations and as workplaces and how to improve these levels (e.g., Coleman and Hoffer 1987; Rosenholtz 1989; Hill 1990; Grant 1988).

However, just as in the case of research on teacher supply, demand, and quality, research on schools has also been hampered by a lack of national data. In order to address these growing needs for information on both teachers and schools, NCES developed SASS.

In the mid-1980s, NCES contracted with a team of researchers at the Rand Corporation to help think through the design of the new survey.[1] The Rand research team recommended that the new survey be designed to meet three requirements. First, the survey must be able to provide a broad overall portrait of the nation's schools and teaching workforce. It must, for example, be able to assess the existence and severity of staffing problems across the nation. Second, SASS must also be able to provide disaggregated information on particular states, particular kinds of locales, and particular kinds of schools. This would, for example, allow researchers and policy analysts to gauge the consequences of various programs and reforms initiated in response to school and staffing problems.

The Rand team also stressed, however, that problems of both teacher staffing and a lack of information on the teaching force are not unique to the 1980s. The teacher labor market has long been characterized by a "boom and bust" cycle, with abrupt shifts between periods of shortage and those of surplus. As a result, interest in and data on the teaching workforce have also been cyclic. With each new threat of teacher shortages comes a renewal of interest in obtaining information on the workforce on the part of teacher training institutions, school officials, and policymakers. With each new threat of shortages also comes recognition by the same groups of the dearth of data. As a result, education policy analysts have never been in the position to accurately predict future teaching workforce needs. For these reasons, the Rand team recommended that data on the teacher workforce be gathered on a sustained and ongoing basis, rather than simply in times of crisis.

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[1] For the Rand report describing and justifying in detail the development of SASS, see Haggstrom, Darling-Hammond, and Grissmer (1988).

NCES, working with the Rand team, expanded and integrated several of its existing surveys into a new unified comprehensive survey on both schools and staffing—SASS. In the winter of 1987-88, the Bureau of the Census, under contract with NCES, undertook the first wave of data collection for SASS.

2 The Design of SASS

There are a number of specific features and characteristics of SASS that make it, by design, particularly well suited to address the kinds of teacher and school issues discussed above. This section summarizes several of these features and characteristics.

Teacher Sample

SASS has an unusually large and comprehensive sample of teachers. Most other NCES surveys, of course, also include teacher samples in their data collection. This is true, for example, for the National Assessment of Educational Progress (NAEP), the National Educational Longitudinal Survey of 1988 (NELS:88) and High School and Beyond (HS&B). Students, however, are the primary focus of these surveys. Information on teachers is included primarily to understand student outcomes, behavior, and achievement. NELS:88, for example, has a large teacher sample (about 45,000 in the base year), but the teacher sample in NELS:88 is not representative; students are the representative sample in NELS, and teachers were included for each sampled student. Different students could, for instance, have the same teachers and, hence, teachers could be counted more than once. Moreover, the student sample and, hence, also the teacher sample in NELS, does not include elementary schools; NELS solely focuses on 8th, 10th and 12th grades.

SASS takes an opposite approach. It was not designed to provide explanations of student outcomes, and, therefore, it does not include an array of measures of student progress. Instead, it focuses on teachers and schools. Other information is included, but only in order to broaden our understanding of these. Accordingly, the teacher sample is large—about 50,000 teachers. It is also comprehensive—it permits national and state estimates of teachers by any number of characteristics, including their field, race, sex, age, education, experience, and whether they are bilingual.

NCES is, of course, not the only organization that collects national teacher data. There are, for example, two other well-known, ongoing national surveys of teachers: the Carnegie Foundation for the Advancement for Teaching's survey, The Condition of Teaching: A State by State Analysis, and The Metropolitan Life Survey of the American Teacher. Neither of these surveys, however, includes private school teachers. Moreover, although representative, each is based on a small teacher sample—fewer than 2,000 teachers. As a result, neither sample permits extensive disaggregation by social characteristics. In contrast, SASS represents all elementary and secondary level U.S. teachers and permits extensive disaggregation.

School Sample

SASS has an unusually large and comprehensive sample of schools. Most other NCES surveys, of course, also include school questionnaires in their data collection. But again, the purpose of school data in most surveys is to provide contextual information to understand student outcomes, behavior, and achievement.

For example, one of the best known and most commonly used databases on schools is the NCES Administrator and Teacher Survey (ATS) of the High School and Beyond (HS&B) Study. The ATS is a subset of schools from the original 1980 base year of HS&B for which additional information was collected from teachers and principals in 1984. The ATS was developed specifically to provide national data on the issue of school effectiveness; prior to the ATS, such measures were not available in any national dataset. In particular, the ATS was designed to facilitate research on the relationships between particular school characteristics and student outcomes by linking ATS information to the 10th- and 12th-grade student achievement data in HS&B.

As a result, much of the best known research conducted since the early 1980s on school effects has been based on the ATS. This has been particularly true for the major studies of the differences between public and private schools (e.g. Coleman and Hoffer 1987; Bryk et al. 1994; Chubb and Moe 1990). Although the ATS has been used a great deal, it has important limitations. For example, the ATS actually has a relatively small sample of schools: the usable sample size is only about *350 schools*. It does not include elementary schools and, moreover, although it includes different types of private schools, only its Catholic school sample is of sufficient size for most analyses of the private sector (see, for instance, Lee et al. 1991 or Rowan et al. 1991). Hence, the ATS is an excellent resource to examine the effects of school characteristics on students, but it is less useful to explore differences among types of schools.

The opposite is true for SASS. It is an excellent resource for examining the range of differences among various kinds of schools, but it is less useful to explore the effects of schools on students. In contrast to the ATS, the usable SASS sample is very large—it includes about *12,000 schools*—and very comprehensive. SASS supports national estimates by any number of different school characteristics, including sector, level, state, percent minority student population in the school, urbanicity, and school size. Moreover, the SASS sample is capable of providing national estimates for at least 18 different types of private schools, including several subtypes of Catholic schools, and a range of nonsectarian, independent, and other religious private schools.

Multiple Respondents

SASS has obtained information from a number of different types of respondents at different levels of the school system. Prior to SASS, NCES administered separate surveys at separate occasions for public and private schools, for districts, and for principals. These were brought together and linked in SASS. As a result, SASS allows examination of the relations between different variables at different levels. Teachers' perceptions, for instance, can be linked to school types, administrator characteristics, or the characteristics of the overall district environment. Data from multiple respondents also make it possible to compare and, hence, evaluate different types of respondents' views of similar issues.

State Data

In addition to national data, SASS also provides public sector data that are representative at the state level. As a result, in addition to providing a national portrait of the teaching workforce and of the school population, SASS also permits state profiles of the teaching workforce and the school population. It is thus possible to compare the characteristics of public schools, teachers, and districts across and among the 50 states. A prime example of this is *SASS by State* (Blank et al. 1994). This handbook of state-level data on schools, student characteristics, teacher qualifications, principal characteristics, and school working conditions was produced by NCES in collaboration with the Council of Chief State School Officers and the National Science Foundation. The purpose of this handbook is to give state and local educators state-by-state data that are not available through state administrative records.

Triennial Cycle

SASS was designed to provide an ongoing and consistent source of data on the teaching workforce and school population. To date, NCES has conducted 3 cycles of SASS: 1987-88, 1990-91, and 1993-94. A core of identical questionnaire items in each cycle allows the examination of trends and changes in the teaching force and the school population during an intense period of education debate and reform—from the late 1980s to the mid 1990s. Besides examining population trends, it is also possible to explore changes that particular schools may have undergone during this period. Each cycle separately and independently sampled the national population of schools, but both the 1990-91 and the 1993-94 school samples also substantially overlapped with the previous cycle's sample. The overlap was substantial; in each case, about one-third or about 3,000 schools were twice selected, making it possible to track these schools over time.[2]

Supplements

SASS is a multipurpose database. In addition to including an ongoing and consistent battery of core questions, it also includes supplements designed to obtain additional information on selected topics and from specific groups.

The Teacher Followup Survey. Each cycle of SASS has included a longitudinal supplement: the Teacher Followup Survey (TFS). The TFS was developed primarily to obtain teacher attrition rates by type of teacher, by type of school, and by state, and to compare teachers who left teaching with teachers who stayed in teaching. The TFS is administered to a subset from the SASS teacher sample one year after the administration of the original questionnaire. The TFS includes two separate questionnaires: one for a sample of former teachers and one for a sample of continuing teachers. The TFS is the best national database available for analysis of the determinants of attrition and turnover of teachers.

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[2] For a discussion of the advantages and uses of large-scale nationally representative longitudinal data on schools, see Baker, Alsalam, and Smith (1994).

Student Supplement. The 1993-94 SASS included a student component designed to obtain data on a nationally representative sample of students from public, private, and Bureau of Indian Affairs schools. An average of six students from each of 1,700 schools were sampled. The information on each student was obtained from school administrative records. This includes data on students' demographic characteristics, course work, disabilities, attendance, college plans, special education program participation, suspensions, grade retention, and grade-point averages.

By adding this important information on students to the teacher and school samples, SASS provides the opportunity to link students to their teachers and schools, allowing the opportunity to explore student assignment and behavior patterns across a wide range of teachers and schools.

Library Supplement. Both the 1990-91 and 1993-94 cycles of SASS included supplements on school librarians and school library media centers. The SASS library supplements were designed to provide updated information on school library media centers in order to inform current federal legislative efforts. The 1990-91 SASS obtained basic information on the availability, staffing, and role of school library media centers throughout the nation. The 1993-94 SASS followed this initial effort with an expanded survey component, including data collection on the background, training, and attitudes of school librarians and the expenditures, materials, equipment, and services of school library media centers throughout the nation.

Together, these supplements provide the most comprehensive and extensive database on school libraries to be collected since the NCES 1985 Survey of Public and Private School Libraries and Media Centers, the results of which are summarized in *Statistics of Public and Private School Library Media Centers, 1985-86* (Cahalan et al. 1987).

Indian Supplement. A unique feature of SASS is the inclusion of 150 Bureau of Indian Affairs schools and also an additional sample of 450 schools with high (20 percent or more) American Indian enrollment. The education of American Indians has been a contentious policy issue, but one for which there have been few reliable data. This SASS component is intended to provide a detailed information base on American Indian schools, teachers, administrators, students, and programs. A major report presenting these data has recently been completed: *Characteristics of American Indian and Alaska Native Education* (Pavel et al. 1995). This study compares Indian schools with other schools and compares Indian students with students from other racial and ethnic groups.

3 Research Using Sass

The Research Agenda

The above-described characteristics make SASS particularly well suited to address a very wide range of contemporary education policy issues concerned with both teachers and schools. Many of these issues have been addressed using SASS; others remain to be addressed. Since the inception of SASS, NCES has undertaken a number of planning projects which have defined its overall research agenda, in general, and shaped the kinds of analyses conducted utilizing SASS, in particular.

The first of these planning efforts was a conference on teacher supply, demand, and quality. NCES, in collaboration with the National Research Council, convened this meeting in the spring of 1991, just as the first SASS data were becoming available for public use.

The conference brought together a wide spectrum of researchers and policy analysts to clarify and summarize the issues most relevant to education policymakers, school officials, members of the education research community, and others concerned with problems surrounding teacher supply, demand, and quality. The conference presentations were specifically designed to identify the major gaps in existing research, obstacles confronting previous research efforts on these issues, and reasons for widespread inconsistencies in findings and conclusions. The meeting resulted in numerous specific recommendations for data analysis.[3] In particular, participants drew attention to the need to improve identification of the range of sources of teacher supply, monitor the training levels and qualifications of the teaching force, and examine the extent of, and reasons for, teacher turnover and attrition.

Besides formulating specific recommendations, the conference participants also stressed an overall theme to guide future research: the importance of disaggregation. There was consensus that overall national figures on supply, demand, shortage, and turnover or predictions about possible national shortages of teachers are less useful than disaggregated and more specified research efforts directed at issues of immediate practical and policy importance.

For example, the conference participants emphasized the relevance of identifying the effects of different settings and locales on teacher shortages and teacher turnover (see, for example, Planchon 1992). Of specific interest, the conferees pointed out, would be comparisons of data on supply, qualifications, and turnover across different subgroups and types of teachers. For example, do some fields of teaching, such as mathematics, face more significant problems related to the availability of teachers than other fields?

As a result, over the past several years, NCES has undertaken or sponsored numerous reports and publications on teacher supply, demand, and quality issues, utilizing SASS and TFS. These publications include tabular overviews (Hammer and Gerald 1991; Arnold and Bobbitt

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[3] A summary and the conference proceedings are available in a volume published by the National Research Council. See Boe and Gilford (1992).

1993), and comprehensive profiles for both the 1987-88 and 1990-91 waves of SASS (Choy et al. 1992, chapters 3 and 7; Choy et al. 1993a, chapters 3 and 5; Choy et al. 1993b chapters 3 and 7).

NCES has, moreover, published analyses on a number of specific supply and demand topics: the sources of teacher supply (Rollefson 1993; Rollefson and Broughman 1995), the rates and variations in individual teacher attrition (Arnold, Choy, and Bobbitt 1993; Bobbitt, Faupel, and Burns 1991; Bobbitt et al. 1994), the match between the supply of and demand for qualified teachers (McMillen and Bobbitt 1993; Bobbitt and McMillen 1995), the adequacy of teacher supply (Ingersoll 1995), an analysis of school-level teacher turnover (Ingersoll 1995), and an analysis of the determinants of teacher wages (Chambers, forthcoming).

In addition to issues of teacher supply, demand, and quality, NCES has also conducted or sponsored numerous research projects utilizing SASS to examine other issues concerned with the teaching occupation and with schools. Much of the direction and agenda for NCES-sponsored research on teachers and schools has been shaped by three major planning reports: *A Guide to Improving the National Education Data System*, *Education Counts*, and *Filling the Gaps*.[4]

The purpose of each of these reports was to provide an overall review for NCES of the kinds of national education information needed, the kinds of data currently available, and the gaps between the two. In particular, all three reports stressed the need to produce more and better information on the quality and characteristics of both teachers and schools in the United States. In addition, all three recommended that SASS be used to address these kinds of issues. Each, for instance, called for more research on the conditions under which teachers work, such as the availability of basic classroom resources available, the degree to which teachers influence core policies in schools, and the amount of support available for developing the craft of teaching. Moreover, each group called for more research on aspects of the environment within schools, such as the clarity of mission, the degree of orderliness, and the presence of community.

These reports stressed two general types of school research reports that are needed. One type is primarily descriptive and concerns the *characteristics* of schools: who attends them, how large they are, how they are organized, and who administers them. The other type of report is more valuative and concerns the *character* of schools: how well are they run; are they effective; what is the quality of their leadership; which have a sense of community; which schools have the most serious student problems; to what extent does the structure of schools help or hinder the education process.

To this end, over the past few years NCES has undertaken and produced a series of reports on teachers and on both the character and characteristics of schools. Among these reports are several tabular overviews presenting basic facts on the size, training, and qualifications of the teaching force, and on the differences in the characteristics of public and private schools and

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[4] *A Guide to Improving the National Education Data System* was produced in 1990 by the National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics, an organization, created in 1989, of a range of both government agencies and independent associations responsible for collecting, reporting, and using national education information. *Education Counts* was produced in 1991 by the Special Study Panel on Education Indicators, a second group, chartered in 1989 by the Department of Education. *Filling the Gaps* was produced in 1992 by Bobbitt, Quinn, and Dabbs of NCES as a detailed followup of the most significant gaps in the national education system.

teachers (Ancarrow and Gerald 1990; Hammer and Gerald 1990a; Hammer and Gerald 1990b). In addition, NCES has produced two comprehensive profiles of the teaching workforce and of the school population for the 1987-88 and 1990-91 waves of SASS (Choy et al. 1992; Choy et al. 1993b). Finally, NCES has produced a major overview of the teaching profession as a whole, using the 1987-88 SASS and other sources. Entitled *America's Teachers: Profile of a Profession*, this is one of the most comprehensive reports available on teachers, covering a wide range of topics: teacher qualifications, compensation, attitudes, education levels, demographics, working conditions, and instructional practices (Choy et al. 1993a).

Specific Research Topics

Many other issues concerned with teachers and schools have been or could be addressed using SASS data. The following section describes in more detail a number of specific research topics that are consistent with or expand upon the research agenda outlined above. The list of topics described is not exhaustive. The purpose of this section is to propose a selected set of issues that are relevant to current education policy and that have been and/or could be addressed using SASS.

Teacher Shortages. SASS data could be used to address the ongoing debate as to whether there are shortages of teachers in the United States. Each of the waves of SASS has obtained a rich array of information on issues at the heart of the shortage debate: the numbers and fields of teaching position vacancies in schools; the degree to which schools experienced difficulties in filling vacancies; the numbers of unfilled positions; the methods that schools use to respond to difficulties in filling vacancies; and the characteristics and qualifications of newly hired and already employed teachers.

Recent work sponsored by NCES on teacher supply indicates that in order to cope with difficulties in filling their teaching vacancies, school officials have often hired underqualified candidates or have misassigned existing staff (Choy et al. 1993b). Hence, these data suggest that there may be no shortages in this country because schools have been able to expand the supply of teacher candidates by reducing standards of qualification.

SASS could be used to bring the facts to bear on this debate. Such a project could examine in detail which schools have had difficulties in hiring additional staff, how principals have coped with such difficulties, and what effects these strategies have had on school programs and staffing adequacy. The breadth of the SASS samples would allow the analysis to pinpoint which kinds of teachers, in which fields, in which kinds of schools, and in which kinds of settings have been subject to shortage problems. The use of all three cycles of SASS would allow the analysis to examine whether these problems have decreased or increased over time, whether they are a chronic fact of life in schools, or whether they are emergency responses to problems of supply.

Teacher Demand and Recruitment. Little is known about the demand side of the teacher labor market, in particular, the processes whereby teacher candidates are linked to teaching positions. Recent research conducted by Ballou and Podgursky, using the Recent

College Graduates Surveys, shows that teachers of higher academic ability and subject-area knowledge do not fare appreciably better in the teacher labor market (1994). This is somewhat surprising, given that it is with respect to such indicators that the teaching work force has been found wanting (Holmes Group 1986; National Commission on Excellence in Education 1983). What, then, determines who is offered a teaching job?

One way of addressing this question would be to examine the procedures schools and districts follow to recruit and select prospective teachers. Anecdotal information (as in the work of Murnane et al. 1992) suggests that practices greatly differ across districts and schools. However, little or no systematic research has been done on these procedures.

SASS is unusual in that it has obtained data on the selection criteria schools and districts use in considering applicants for teaching positions. Public district administrators and private school headmasters were asked to indicate whether they used passage of teacher examinations, professional credentials, or majors in fields to be taught in the selection of new teachers. These data could be usefully analyzed to examine what is valued by administrators and how this differs across districts and schools.

The Determinants of Teacher Turnover and Attrition. SASS and the TFS could be used to examine the rates of and reasons for teacher turnover and attrition—an issue central to the teacher supply and demand debate.

NCES has already sponsored several multivariate analyses of teacher turnover: one using the TFS to examine the predictors and levels of individual-level teacher attrition (Arnold, Choy, and Bobbitt 1993), a second using SASS to examine the predictors and levels of school-level teacher turnover (Ingersoll 1995; see also Rollefson 1992), and a third using SASS to examine the predictors of beginning teachers' plans to remain in teaching (Sclan 1993).

A next step would be to undertake a comprehensive analysis and examination of teacher turnover at both the teacher and the school levels. Such an analysis would fully exploit the strengths of the TFS. This may a topic for which multilevel analytic techniques, such as Hierarchical Linear Modeling, could be useful (see Bryk and Raudenbush 1992). Such an analysis could examine the relationships among school characteristics, teacher characteristics, and teacher turnover. In particular, it could examine whether the effects of teacher characteristics on teacher turnover interact with those of school characteristics. For example, does the rate at which different types of teachers exit depend on the type of school in which they teach? Alternatively, does the rate of turnover in different types of schools depend on the types of teachers they employ?

The Problems and Prospects of Beginning Teachers. The problems confronting new teachers in their jobs are of great interest in current education research. Researchers have consistently shown that new teachers leave the occupation at very high rates. Hence, researchers and reformers have advocated a range of reform efforts, such as mentoring, apprenticeship, and induction programs, designed to aid new teachers and cut down on their high attrition rates.

SASS specifically oversampled beginning teachers in order to foster analyses of this group. As a result, SASS is especially well-suited both to examine the problems confronting new teachers and to describe the programs designed to help them. For example, Sclan (1993) has analyzed the planned attrition rates of new teachers using the 1987-88 SASS, and Bobbitt is currently examining the availability of programs for new teachers using the 1990-91 SASS. Other work could be done. Moreover, a recent examination of the adequacy of high school staffing in the United States (Ingersoll 1995) has drawn attention to an overlooked set of problems confronting new teachers—their distinctly higher levels of out-of-field teaching (i.e., teaching in fields that do not match their training). This raises questions for further research—why are new teachers more often assigned out of field, and what effect does it have on them and their students?

The Sources and Qualifications of New Teacher Hires. There is considerable interest in the sources and characteristics of new teachers. How many new teachers enter the teaching workforce directly from training institutions? How many are former teachers re-entering the workforce after a hiatus? How many new teachers are and are not trained, that is, have passed through a formal program of certification? Which schools are more likely to hire noncertified teachers, particularly at the secondary level? How many new teachers hold temporary or emergency certificates? Finally, what are the implications of these sources and levels of qualifications of new hires for their attitudes, commitment, and retention?

SASS is an excellent resource to examine the flows of teachers into and out of the school system. In two reports, Rollefson (1993) and Rollefson and Broughman (1995), for example, examined the types, demographic characteristics, and qualifications of new hires using both the 1987-88 and 1990-91 waves of SASS. Their analyses included data on the proportions of new teachers who were newly qualified, delayed entrants, transfers or re-entrants, and the extent to which these proportions varied across school sectors.

In a similar analysis, Ingersoll (1995) depicted the major flows of teachers into, through, and out of elementary and secondary schools, both public and private, using the 1990-91 SASS. The analysis provided an overview of the teaching workforce—who constitutes the teaching workforce, where teachers come from when they enter the teaching workforce, and where they go when they leave the teaching force. The data presented indicated the magnitude of teacher movements among and between these various components and their relationships to one another. The analysis showed that only 18 percent of the newly hired came directly from higher education training institutions, such as colleges and universities. Nine percent of the newly hired came from other (noneducation) occupations, while 8 percent hired came from nonteaching jobs within the field of education. Six percent of the newly hired came from the ranks of full-time parents or family caregivers. Many of these newly hired teachers were re-entrants—former teachers who were returning or delayed entrants—trained teachers who did not seek a position immediately after their schooling. However, by far the largest source of hires was the school system itself. Fifty-one percent of the newly hired were "movers": those who transferred or migrated from teaching positions in other schools.

One way of building on these analyses would be to look at the extent to which teachers from different backgrounds and with different kinds of training differ in terms of their attitudes, commitment, and effectiveness. Moreover, with the availability of the 1993-94 SASS data, it

will be possible to examine trends in teacher flows; have the prime sources of new teachers changed over time?

Teacher Compensation. Teacher compensation is another topic of great interest and relevance in education research and policy circles. Teacher salaries comprise over half of the cost of education in the United States, and in recent years salaries have substantially increased and have been the subject of numerous reform initiatives, such as merit and performance pay schemes.

SASS is especially well suited to examine teacher compensation because it includes information both on the salaries of individual teacher-respondents and on district-wide salary schedules. NCES is currently sponsoring a detailed and comprehensive econometric analysis of the determinants of teacher wages, using the 1990-91 SASS (see Chambers, forthcoming).

It would also be illuminating to examine changes (in real dollars) of teachers' starting, mid-career, and maximum salary schedules across the three waves of SASS and across different kinds of schools. This could pinpoint which teachers, in which schools, have been the recipients of higher salaries.

Teaching as a Profession. A topic of increasing significance to education researchers and policymakers is teacher professionalization. What is the current standing of teaching as a profession? In what ways has teaching achieved or been granted professional status and in what ways has it not? Has the professionalism of teaching improved in recent years and if so, with what effects?

Over the past decade, education reformers and policymakers have increasingly recognized that improvements in the education system will require improvements in the quality of teachers and teaching. Researchers and policymakers have argued that a major source of problems in teaching has been the lack of professional status for teachers; hence, a key to improving the quality of teaching lies in improving the professional status and standing of teaching. This upsurge in public and national recognition of the importance of teachers recently came to a head in the form of a national education goal formulated by Congress and formalized in the Goals 2000 federal legislation that specifically calls for support for the professional development of teachers.

As a result, recent reform has been directed toward upgrading and improving a host of aspects of teachers and their work, such as recruitment, training, accountability, pay, professional autonomy, assessment, new teacher induction, and decisionmaking influence. Many of these efforts have been local- or state-based. Others have been piecemeal or targeted to specific schools or teachers (e.g., urban, poor, public schools; mathematics and science teachers). As a result, it is unclear how extensive and comprehensive these different reforms have been. That is, it is unclear how professionalized teaching has become and to what extent this varies across different types of schools. Moreover, it is unclear what effect, if any, the many reforms have had.

To address these questions, NCES has funded two reports that will examine the levels, impact, and effects of key indicators of teacher professionalism, using the 1990-91 SASS

(Ingersoll, forthcoming-b and c). These analyses are designed to build on the earlier *Profile of a Profession* overview report produced by NCES using the 1987-88 SASS. These analyses could be supplemented with data from the 1993-94 SASS, which includes a series of new items on professional development programs. Moreover, all three waves of SASS could be used to assess to what extent, and in which kinds of schools, teacher professionalization has or has not changed.

International Comparisons of Teachers. A subject that will undoubtedly become more prominent in the future is comparison of teachers across different countries. To this end, the international education indicators project (INES) of the Organization for Economic Cooperation and Development (OECD) is currently developing a range of measures of teachers—their qualifications, training, working conditions, and salaries—for use in their international data collection and publication efforts (see Ingersoll, forthcoming-d).

SASS is the instrument best equipped to provide U.S. data for such international-level comparisons, because it is the only survey which represents all U.S. teachers—a point made by Grissmer and Kirby (1993) in a recent paper on the possible roles of large-scale surveys of U.S. teachers. This has already been partly recognized; the NCES report, *Profiles of a Profession*, included international data on teacher training and teacher salaries alongside SASS data.

SASS is in a good position to provide direction to the indicator development process being undertaken by OECD. Currently, there are very few international data on teachers, and future data collection efforts must confront issues of definition and comparability. SASS can provide a template for use by OECD on what to measure, how to measure it, and in what ways to analyze it.

Teacher Evaluation. Most new teacher contracts include a probationary period of 2 to 3 years before tenure is granted. However, little research has been done on how much use school systems make of this period to assess the skills of their new teachers and to dismiss those whose performance is not promising. This issue becomes all the more important given the well-publicized difficulty school districts have in dismissing ineffective teachers once they become tenured.

A possible future supplement to SASS might ask principals how often they have declined to renew an untenured teacher's contract because of poor performance. To put these numbers in perspective, they could be compared to the numbers of new teachers hired in total over the same period. Along the same line, SASS could ask how often principals or department heads evaluate new teachers, whether new teachers are assigned experienced mentors or placed in teaching teams, and what remedial measures the school takes when a new teacher is not performing well.

The Effects of School Size. Another important debate in education policy research concerns the relative advantages and disadvantages of smaller and larger schools. Until recently, the view that "large is efficient" was prominent among many education policy researchers. These analysts argued that consolidation of smaller schools into larger units was a more efficient and effective manner of utilizing resources because of economies of scale (e.g., Conant 1959). Currently, a counter view that "small is beautiful" has gained popularity among many education policy researchers. In this view, school effectiveness is deeply affected by the degree of cohesion

and belongingness among students and staff within schools. These analysts argue that large schools are more impersonal, alienated, inflexible, and bureaucratic. Smaller schools are held to be far better places for students to work, learn, and grow.

Existing SASS-based research suggests that there may be both advantages and disadvantages to small and large schools. Small schools have, for instance, far higher rates of teacher turnover and more assignment of teachers to fields that do not match their training (Ingersoll 1995). On the other hand, larger schools, for example, are more centralized and have more internal conflict (Ingersoll 1994; forthcoming-a). These findings suggest that SASS could be used to effectively re-examine the school size debate by examining its wealth of data on organizational characteristics. In addition, this is a topic for which the student supplement data in the 1993-94 SASS cycle could be usefully analyzed. Such an analysis could examine differences between larger and smaller schools in student course-taking patterns, student absenteeism, and rates of suspensions.

Comparing Public and Private Schools. Over the past decade, there has been an upsurge of interest among both education researchers and policymakers in comparing public and private elementary and secondary schools in the United States. Numerous researchers, for instance, have sought to carefully isolate key differences between public and private schools and explore what impact these differences have on student outcomes (e.g., Coleman and Hoffer 1987; Bryk et al. 1994; Chubb and Moe 1990). The primary emphasis of much of this research has been to separate out the effects of schools, of student characteristics, and of family background on student performance. Although highly contested, many have come to the conclusion that, in important ways, private schools are distinctly different from public schools and, in general, are better places for student growth and learning. As a result, numerous reformers and policymakers have increasingly advocated reforms aimed at promoting privatization as a solution to school problems. For example, reforms such as choice and vouchers have sought to increase funding and support for private schools (Clune and Witte 1990).

The policy debate over the relative merits of public and private schooling has, however, often been highly partisan and pervaded by oversimplifications and stereotypes. Confusion surrounding the public-private debate has been exacerbated by a dearth of nationally representative data and research on a number of important aspects of private schools and how they may differ from public school settings. For example, very few national data are available with a truly representative sample of the range of private schools in the United States. Hence, much of the debate overlooks the diversity within the private sector. Moreover, most of the debate has focused on the student perspective of schooling; there has been much less examination of how public and private schools differ as workplaces and from the viewpoint of teachers.

SASS is especially well suited to revisiting the differences between public and private schools precisely because of its large teacher and school samples. To this end, NCES has produced a series of tabular overviews on the differences between public and private schools (Ancarrow and Gerald 1990), the differences between public and private school school administrators (Hammer and Gerald 1990b), and the differences between public and private school teachers (Hammer and Gerald 1990a),

Moreover, the work of Ballou and Podgursky of the Economics Department of the University of Massachusetts utilizing the 1987-88 and 1990-91 waves of SASS provides a good example of research examining some important but overlooked aspects of public and private school differences. They use the market-bureaucratic model of school organization, popularized in the recent work of Chubb and Moe (1990). Among the school issues Ballou and Podgursky investigate are merit pay, teacher effort, teacher performance, and teacher quality (see all Ballou and Podgursky citations in the References section).

NCES has also sponsored several projects that focus and bring to light differences *among* private schools, using the 1990-91 SASS. These projects include both a tabular overview (McMillen, Rollefson, and Benson 1992) and a major comprehensive profile of private schools (McLaughlin, O'Donnell, and Ries 1995). The latter examines a large range of aspects of 18 different types of private schools, including admissions, size, tuition, student demographics, teacher demographics, graduation requirements, and programs. These two reports each show that much research on private schools underemphasizes diversity within the private sector and, hence, oversimplifies arguments about school sectors and school effects. As a followup, Baker (forthcoming) has recently begun a project using the 1990-91 SASS to take a more detailed look at the degree of organizational variation across a wide range of schools, both public and private.

Control and Influence in Schools. The issue of organizational hierarchy and the distribution of influence in schools are sources of great debate in the realms of both education policy and research. Are schools centralized or decentralized; to what extent does this differ among different kinds of schools; and what difference does it make for life inside schools? Two opposing views dominate the policy debate.

Traditionally, a large number of policymakers and researchers have held schools to be the epitome of inefficient public sector institutions. Schools, this view claims, lack appropriate levels of control, coordination, and accountability, especially when it comes to their primary productive activity: the work of teachers. In this traditional view, school systems are too disorganized and too decentralized, and teachers have too much autonomy.

A second and antithetical view of the education system, popular among a different group of policymakers and researchers, finds schools to be the epitome of top-down undemocratic bureaucracies. Recently, a growing group has extended this argument specifically to the working conditions of teachers, arguing that factory-like schools unduly deprofessionalize and disempower teachers. In this reform view, school systems are too controlled and too centralized, and teachers have too little autonomy.

SASS has a wide range of data on the distribution of school policymaking and decisionmaking influence, the degree of teacher autonomy in classrooms, and the hierarchy of authority. The 1987-88 SASS has been used to address some aspects of this debate (see Ingersoll 1994, forthcoming-a; Anderson 1993). Further analyses might examine which groups control school decisionmaking, how the authority structures in different kinds of schools vary, and the consequences of these levels of control for the climate within schools.

School Administration. With or without school-based management, school-level leadership in matters relating to the instructional program is an important factor for ensuring a coherent approach to teaching and learning. Principals are the most prominent school leaders, but their efforts must be supported by teachers to affect classroom practice. Analyses of principal training and prior experience and the extent to which principals share their visions and decisionmaking responsibilities with their colleagues will be among the topics of greatest interest as reforms calling for school-based governance structures become more popular.

NCES has recently sponsored a comprehensive report on school administrators using all three cycles of SASS (Curtin and Fiore 1995). This report primarily focuses on *principals*—their characteristics, training, roles, compensation, and attitudes. SASS could also be used to examine school *administration,* that is, to examine in what ways and how well schools are managed.

School Community. Determining what makes schools effective is a central topic in current education research. Currently, there is near consensus that one of the most important indicators of the effective school is the presence of a sense of community (e.g., Coleman and Hoffer 1987; Bryk et al. 1990; Kirst 1989). Community refers to the shared frame of reference of individuals who live or work together. In the context of schools, community involves effective communication and active participation on the parts of teachers and principals in the educational process—from deciding on the curriculum to establishing rules for dealing with students. Community also involves shared vision concerning goals and a sense of common purpose as reflected in consensus on the relative priorities of goals.

Conventional wisdom holds that large, urban public schools serving poorer student populations are more often found to lack a sense of community. On the other hand, smaller schools and private schools are both held to be far better places to work and learn because of their more communal, personal climates and their sense of continuity, cohesion, and belongingness. But, how prevalent is this?

The extensive school sample in SASS could be used effectively to examine a wide range of indicators of school community and how these vary or covary across schools. This is also a topic for which the SASS student supplement data on student behavior could be fruitfully analyzed.

At-Risk and Problem Schools. One of the national education goals formulated by Congress and formalized in the Goals 2000 federal legislation specifically calls for increased support for the improvement of orderliness, internal climate, and safety of schools. Which schools are most at risk of failing to achieve this essential education goal? Are they schools serving large numbers of poor students? Are they schools in urban centers? Are they schools that find it most difficult to hire and retain qualified staff in core curriculum areas?

These issues could be addressed with SASS data on principals' and teachers' perceptions of school climate, as well as with data from the student supplement on student behavior. Using these data to provide national estimates of school and student problems can help inform special initiatives intended, for example, to curb violence, increase student engagement, or maintain schools as drug-free settings. Examination of those types of schools in which the problems are

greatest can also help in understanding some of the conditions and factors that contribute to these situations.

The Use of Merit Pay Programs. There is continuing interest in the use of some form of merit or performance-based pay to improve the incentives of teachers and administrators (e.g., Hanushek 1995, Chapter 6). The 1987-88 SASS produced the somewhat surprising finding that the majority of teachers were not opposed to merit pay. Even higher percentages of teachers favored career ladders and school-wide bonuses awarded for higher performance. Ongoing interest in this policy issue suggests that SASS could fruitfully seek more information about incentive pay. A future supplement to SASS might include the following kinds of questions:

(a). Is there a merit pay program at the teacher's school?
(b). What type is the plan (individual merit pay, career ladder, school-wide bonus)?
(c). Has the teacher participated (sought an award)?
(d). Has the teacher received incentive pay at this school within the past 3 years?
(e). How large was the award?
(f). Does the teacher intend to seek an award in the future?

School Librarians and Libraries. School library media centers have become a topic of increasing interest and concern to a number of education policymakers and researchers over the past decade. Interest has centered in general on the contribution school library media centers ought to make to the current education reform movement and, in particular, to their potential contribution to the expanding role of computer- and technology-based education. Concern among education policymakers has stemmed from the perception that school library media centers have suffered from inadequate support in recent years. A number of policy analysts have argued that as a result of inadequate funding, the availability of services provided by and staffing levels of school library media centers have declined over the past decade.

In order to provide background information to these issues, NCES included supplements on school librarians and library media centers in both the 1990-91 and 1993-94 cycles of SASS. Together, these supplements provide the most comprehensive and extensive database on school libraries since the NCES 1985 Survey of Public and Private School Libraries and Media Centers.

A recent report sponsored by NCES, *School Library Media Centers in the United States: 1990-91,* presents results from the 1990-91 SASS (Ingersoll and Han 1994). This report specifically focuses on three issues: the numbers of schools with library media centers, the levels at which these library media centers are staffed, and the role library media centers and their staff play in schools. It could not, however, address a number of other important issues, such as the background, training, and attitudes of school librarians, and the expenditures, materials, equipment, and services of school library media centers. These topics can be addressed with data from the 1993-94 SASS, which included a more detailed supplement on school libraries.

The 1993-94 SASS obtained a wealth of information on the funding, facilities, collection, technology, and organization of school library media centers in the United States. For example, for each library, the survey obtained information on three important outcomes: numbers of students using the library, books and materials checked out of the library, and students' attitudes

towards library use. Multivariate techniques could be used to determine which factors (e.g., the training of the librarians, the size of the collections, the availability of technology, the hours open, and so forth) are associated with increases in these outcomes.

4 Conclusion

This paper has revisited the initial purposes behind the development of the NCES Schools and Staffing Survey and has reviewed what SASS was originally intended to accomplish. By doing so, it has sought to provide the basis for an agenda and outline of important education research issues that SASS could be used to address in the next several years and to guide and assist NCES in its planning for the fourth cycle of SASS.

Comments and More Information

SASS and TFS data tapes, survey questionnaires, and user's manuals are available from NCES at the address listed below. Comments and questions are welcome.

Schools and Staffing Survey
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, NW
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Listing of NCES Working Papers to Date

Number	Title	Contact
94-01	Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association	Dan Kasprzyk
94-02	Generalized Variance Estimate for Schools and Staffing Survey (SASS)	Dan Kasprzyk
94-03	1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report	Dan Kasprzyk
94-04	The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey	Dan Kasprzyk
94-05	Cost-of-Education Differentials Across the States	William Fowler
94-06	Six Papers on Teachers from the 1990-91 SASS and Other Related Surveys	Dan Kasprzyk
94-07	Data Comparability and Public Policy: New Interest in Public Library Data Papers Presented at Meetings of the American Statistical Association	Carrol Kindel
95-01	Schools and Staffing Survey: 1994 papers presented at the 1994 Meeting of the American Statistical Association	Dan Kasprzyk
95-02	QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates	Dan Kasprzyk
95-03	Schools and Staffing Survey: 1990-91 SASS Cross-Questionnaire Analysis	Dan Kasprzyk

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95-04	National Education Longitudinal Study of 1988: Second Follow-up Questionnaire Content Areas and Research Issues	Jeffrey Owings
95-05	National Education Longitudinal Study of 1988: Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors	Jeffrey Owings
95-06	National Education Longitudinal Study of 1988: Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data	Jeffrey Owings
95-07	National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts	Jeffrey Owings
95-08	CCD Adjustments to the 1990-91 SASS: A Comparison of Estimates	Dan Kasprzyk
95-09	The Results of the 1993 Teacher List Validation Study (TLVS)	Dan Kasprzyk
95-10	The Results of the 1991-92 Teacher Follow-up Survey (TFS) Reinterview and Extensive Reconciliation	Dan Kasprzyk
95-11	Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work	Sharon Bobbitt & John Ralph
95-12	Rural Education Data User's Guide	Samuel Peng

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Number	Title	Contact
95-13	Assessing Students with Disabilities and Limited English Proficiency	James Houser
95-14	Empirical Evaluation of Social, Psychological, & Educational Construct Variables Used in NCES Surveys	Samuel Peng
95-15	Classroom Instructional Processes: A Review of Existing Measurement Approaches and Their Applicability for the Teacher Follow-up Survey	Sharon Bobbitt
95-16	Intersurvey Consistency in NCES Private School Surveys	Steven Kaufman
95-17	Estimates of Expenditures for Private K-12 Schools	Steve Broughman
95-18	An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey	Dan Kasprzyk

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