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NATIONAL CENTER FOR EDUCATION STATISTICS

Working Paper Series

Coordinating NCES Surveys: Options, Issues, Challenges, and Next Steps

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Foreword

In addition to official NCES publications, NCES staff and individuals commissioned by NCES produce preliminary research reports that include analyses of survey results, and presentations of technical, methodological, and statistical evaluation issues.

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**Coordinating NCES Surveys:
Options, Issues, Challenges, and Next Steps**

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February 2000

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Executive Summary

The National Center for Education Statistics (NCES) collects data on schools, colleges, universities, students and their parents, teachers, and school administrators in an effort to track the health and progress of our nation's education system. With responsibility and oversight for planning, conducting, and disseminating the results of scores of large-scale surveys, the agency faces the continual challenge of determining the best methods for coordinating its survey efforts. This paper discusses the connections between NCES surveys, presents a conceptual framework for thinking about survey coordination, identifies coordination in current surveys, discusses issues and challenges with three groups of potential survey coordination strategies, and lays out some next steps for NCES to consider for improving survey coordination.

Rationale

NCES surveys share many features, including connections between sampling frames, units of observation, common topics and survey items, as well as common data collection and development schedules. Given these links, a number of compelling reasons exist for coordinating NCES surveys. They include: increasing the analytic potential of NCES surveys to inform education researchers and policymakers; reducing the data collection burden on survey respondents; and lowering data collection costs.

Survey Coordination Strategies

Coordination strategies can be grouped into three broad categories. These strategies range in their ambitiousness and their complexity. They include:

- *Common or coordinated survey administration processes.* NCES can employ common survey administration procedures, such as coordinated scheduling, common coding conventions, or common linking procedures, to improve the ability of analysts to compare and contrast findings across surveys, deal with potential overlap between survey respondents, and streamline survey administration.
- *Common variables, data definitions and questions.* Collecting information on a standard set of key variables can enhance the analytic potential for NCES data by permitting cross-survey comparisons and analyses.
- *Merged/integrated sampling design.* One of the most ambitious coordination options is coordinating the design and/or administration of sample surveys. This option can be thought of as a group of related options, with the options including 1) coordinating relational samples; 2) creating a separate subsample from two overlapping samples; and 3) drawing a subsample from an existing sample.

NCES has done a lot of work to coordinate and link many of its surveys using these strategies. It has devoted considerable resources toward linking sample surveys to universe data collections through the use of common identifiers. Many NCES sample surveys are also linked. In fact, although many of the NCES survey programs are commonly referred to as a single survey (e.g.,

SASS), this is somewhat misleading, since many survey programs are better described as a set of linked surveys than as a single survey.

Issues and Challenges Raised when Coordinating Surveys

Each of the survey or data coordination strategies discussed in this paper raises a set of issues and challenges that NCES must consider and address for a survey coordination effort to be successful. They vary by option and include internal communication issues, measurement issues, logistical issues, and challenges related to developing sampling designs.

Developing common or coordinated survey administration processes is one of the more straightforward ways to coordinate the agency's surveys, and therefore does not raise as many substantive issues as the other coordination strategies. Nevertheless, developing common standards requires that NCES survey teams reach agreement on procedures for dealing with routine processes (e.g., coding missing variables, categorical variables, etc. or developing procedures for dealing with changes in the number and/or types of schools and districts over time, etc.). This option requires NCES to coordinate among the various survey efforts, and associated organizations, to ensure that a common standard is agreed upon and used.

When seeking to employ common variables, data definitions, and questions, NCES must work with statisticians, researchers, educators, and policymakers to develop agreed-upon definitions or questions. In addition, NCES must consider if, and how, definitional changes are likely to affect trend data and whether the advantages to be gained by using a new definition or question outweigh the disadvantages. The anticipated effects of changes on state, local and other data collection efforts that parallel NCES surveys also need to be reviewed.

Coordinating the design or administration of sample surveys raises a number of technical, administrative, and logistical challenges. Examples include: considering whether survey integration will address research questions; making sure that integration efforts do not jeopardize the integrity of future data collection efforts; and assessing the impact of proposed changes on respondent burden and administrative complexity.

While each set of coordination options presents a set of unique challenges and issues, one common challenge is found in all of the survey coordination options discussed in this paper. When pursuing any coordination strategy, NCES must also ensure ways that creative and innovative ideas and methods can be developed through surveys, as these can lead to advances in measurement techniques or survey methodology that have a wide benefit for subsequent work.

Next Steps

The paper concludes with a brief discussion of possible next steps for NCES to consider for better coordinating and integrating its survey efforts. They include: 1) developing web-based references and tools for common administrative processes, and 2) developing a set of common background variables by continuing work on educational attainment, urbanicity, poverty and family income. Both of these options build on recent NCES activities and are relatively small efforts that could have significant payback.

Introduction

The National Center for Education Statistics (NCES) collects data on schools, colleges, universities, students and their parents, teachers and school administrators in an effort to track the health and progress of our nation's education system. With responsibility and oversight for planning, conducting, and disseminating the results of scores of large-scale surveys, the agency faces the continual challenge of determining the best methods for coordinating its survey efforts. Survey coordination efforts offer several potential advantages for improving the power and efficiency of NCES programs, including possible cost reductions, reduced respondent burden, and increased analytical potential.

This paper briefly describes some NCES survey coordination options and their advantages and disadvantages. Coordination strategies include common and coordinated survey administration processes; common variables, data definitions, and questions; and coordinating the design and/or administration of sample surveys. Some of these options could span most NCES program areas, but many apply only to selected sets of surveys, such as elementary/secondary or postsecondary surveys.

The paper begins by discussing the connections among NCES surveys and the background and rationale for coordinating the agency's surveys. The following section outlines some available options and provides examples of recent NCES coordination activities. The next section discusses the challenges that NCES must address when coordinating surveys, and provides some examples of past and current NCES coordination issues. The paper ends by presenting two steps that NCES could undertake to further survey coordination efforts.

Connections Across NCES Surveys

NCES conducts approximately 20 ongoing large-scale survey programs. These surveys gather information for researchers, educators, policymakers, taxpayers, and parents on the size and condition of American elementary, secondary, and postsecondary education. Because of the complex nature of the education system, NCES collects data from a wide assortment of public and private administrative and non-administrative sources. Data are assembled on all aspects of education including students, faculty and staff, finances, schools, colleges and universities, educational achievement, and lifelong learning opportunities. The agency's surveys also gather information from a variety of respondents, including students, school administrators, and parents.

NCES data collection efforts include both universe collections and sample surveys. NCES collects universe data on elementary/secondary schools, postsecondary institutions, and libraries, and sample cross-sectional and longitudinal data on the characteristics of schools, libraries, students, and teachers. These data sets provide high quality education data on a regular basis. For sample surveys, students, schools, or teachers are selected through rigorous methods, which are designed to provide accurate national, state, and/or group estimates. Many other agencies, both within and outside government, collect data on education; however, the availability and quality of these data can vary considerably and can be influenced by program or policy differences.

While each NCES survey has a different focus, the agency's surveys share many connections. Nearly all surveys, for example, collect data on the background characteristics of their

respondents. Many surveys collect data on similar topics. Other connections include common survey design features, such as common units of observation, and overlapping data collection schedules.

Survey instruments that are very closely connected are grouped together in survey programs, and often referred to as a single survey. Rather than consisting of a single survey instrument, survey programs are typically a set of distinct, coordinated instruments, each of which gathers data from different target populations. For example, the Common Core of Data (CCD), the annual universe survey of elementary and secondary schools and school districts, actually consists of five separate components: the public school universe survey, the local education agency universe survey, the state aggregate non-fiscal report, the state aggregate fiscal report, and the school district fiscal report. Together, these separate survey instruments provide basic descriptive data about all public elementary and secondary schools, all local education agencies, and all state education agencies in the United States.

Although the connection between separate survey programs are not as strong as those between the separate survey instruments that make up one of the NCES survey programs, the separate survey programs share many connections as well. Links between the sample and universe surveys form important connections between surveys. Most NCES surveys provide estimates based on statistical samples. The sampling frames for these surveys are usually drawn from other NCES surveys, often the agency's universe surveys—the CCD or Integrated Postsecondary Education Data System (IPEDS)—or large, nationally representative samples of students, such as the National Postsecondary Student Aid Study (NPSAS). As a result, potential links between NCES universe surveys and many sample surveys exist. While confidentiality considerations often prevent NCES from linking these data and making public data sets available, these links to universe surveys provide valuable summary background statistics for many sample surveys.

Common elements, items, or topics are another important connection between surveys. Although each NCES survey program focuses on a particular aspect of the education system, similar data are often collected from respondents in different surveys to provide a fuller picture of the topic in question. For example, both the School and Staffing Survey (SASS) and National Assessment of Educational Progress (NAEP) gather data on teacher education and professional development, although with differing levels of detail. These surveys also collect student outcome data which is similar in content and intent.

In addition, many of NCES surveys have similar units of observation. Thus, two surveys may potentially collect data from the same group of individuals albeit on different topics. Two NCES surveys that focus on postsecondary education provide an illustration. The Beginning Postsecondary Students Study (BPS) and NPSAS both collect data from postsecondary students (BPS is actually a subsample of NPSAS). The two surveys collect data on different topics. BPS collects data on postsecondary education completion, while NPSAS focuses primarily on how students pay for postsecondary education.

Similar data collection schedules also form a bond between surveys. Some surveys are administered annually, some biennially, while others operate on a less regular schedule. Although each survey program has its own independent data collection schedule, these schedules are often coordinated. Coordinating the timing of when different surveys go into the field allows NCES to use the lessons learned from one survey to improve other surveys. In addition, coordinated scheduling of NCES surveys may also reduce the burden on states, districts and schools and enhance the analytic potential of the surveys.

In summary, the numerous survey instruments administered and fielded by NCES share many attributes. First, the individual survey instruments that make up each survey program are often coordinated to obtain data from a variety of sources. Second, NCES sample surveys usually use one of the NCES universe surveys or one of the agency's large, nationally representative sample surveys as a sampling frame. Third, groups of items on a particular subject may also be repeated on different surveys. Fourth, many surveys have similar units of observation. Finally, survey development and fielding schedules also frequently overlap.

Rationale for Coordinating Surveys

The complex nature of the NCES survey programs, along with the fact that NCES surveys share common features, has prompted many to explore the opportunities for coordinating these surveys. For example, a recent evaluation of the National Assessment of Educational Progress (NAEP), recommended that the "Department of Education . . . integrate and supplement the current collections of data about education inputs, practices and outcomes to provide a more comprehensive picture of education in America"(Pellegrino, Jones et al. 1999). NCES currently capitalizes on many of the connections across surveys; however, additional work could promote additional survey coordination efforts. A number of compelling reasons exist for further coordinating NCES surveys, employing common data processing methods, or developing links between surveys. They include:

- Increasing the analytic potential to inform education researchers and policymakers;
- Reducing data collection burden on survey respondents; and
- Lowering data collection costs.

These rationales for coordinating surveys are described briefly below.

Increase Analytic Potential to Inform Education Researchers and Policymakers

Despite the many connections between NCES surveys, differences and gaps between surveys often make it difficult to draw meaningful conclusions across surveys. Survey coordination efforts that develop and promote the use of common data definitions and survey items, as well as those that build links between surveys, can increase the analytic potential of these surveys.

In some cases, common data definitions can permit additional analyses across surveys. Often NCES surveys already collect information on common variables, but differing definitions make it difficult to draw meaningful comparisons. For example, different poverty definitions used in the High School and Beyond (HS&B) survey and National Education Longitudinal Study 1988 (NELS:88) make it impossible to compare these data using school poverty status (Lippman, Burns et al. 1996). In such instances, common data definitions across surveys would improve data analysis by making surveys more easily integrated and allowing NCES and others to generate estimates for comparable groups.

Similarly, coordination of the wording of survey items can permit additional analysis in many cases. Many NCES surveys query respondents on related topics, but survey questions are not always coordinated to permit comparisons across surveys. For example, a recent analysis of survey content in SASS and other large-scale surveys found numerous questions on school reform. However, significant differences existed in the type of data collected. In some cases, one survey collected more detailed data than another. In other cases, questions were overlapping, but each survey worded the question in a slightly different way (Pechman, O'Brien et al. 1997). These differences, while seemingly insignificant, can make it difficult to compare data across surveys. NCES may not want to ask detailed questions on all topics across its surveys, particularly when additional detail may not really be needed for the purposes of the survey. In some situations, however, using common questions on different surveys would make NCES surveys more easily integrated.

Finally, links between NCES data sets that use common identifiers can be used to better inform education researchers and policymakers by providing additional dimensions to existing analyses. Many NCES surveys also collect data on the same states, schools, students, or teachers, but collect these data on different topics or at different times. Additional work to establish these links often has significant paybacks. For example, links between sample surveys and universe data sets can expand the analytic capability of the sample surveys by providing more background data on schools and districts from administrative records. Links of universe data across a number of years permit trend analyses using universe data. Such linkages give researchers a better understanding of changes in the administrative infrastructure that administers, delivers, and governs American education. Links between sample surveys, while more complicated, can also potentially provide a fuller description of the characteristics of American school districts, schools, teachers, and students and, in some cases, how they relate to student achievement.

Reduce the Data Collection Burden on Survey Respondents

Survey coordination may also decrease data collection burdens on survey recipients. When collecting data from schools, teachers, and other groups, NCES and other federal agencies must work to ensure that they are not placing undue burdens on survey respondents, in part because longer questionnaires or repeated surveys may lower participation and response rates and influence the validity of survey results. NCES surveys often collect data on key characteristics of the education system from the same populations more than once. In these cases, survey coordination efforts can reduce the burden placed on survey respondents by better using extant data or building on the existing connections between surveys.

In cases where two surveys are collecting identical or similar data from one group, such as schools with eighth graders, coordinating data collection of the data for these two surveys may reduce the amount of time needed for survey respondents to provide the relevant information. Two examples of past survey coordination considerations illustrate the types of situations where coordination might reduce respondent burden. First, NCES contemplated a possible SASS-NAEP merger when it began SASS as a way to reduce respondent burden for teachers and administrators. In this case, data collection plans called for collecting data on schools and teachers from a sample of all K-12 schools for SASS and data on schools, teachers, and students from three samples of schools for 4th, 8th, and 12th grades for NAEP. Similarly, potential overlaps between the target populations of NELS and NAEP also prompted NCES to consider whether a merger might reduce the data collection burden on schools and administrators. (NELS

longitudinal data were collected from students who were in 8th grade in 1988, while NAEP collected data from a sample of students in schools with 4th, 8th, and 12th grades in 1988 and every subsequent 2 years). Researchers felt that coordinating surveys held the potential to reduce respondent burden in both cases. Nevertheless, in both of the examples provided above, significant differences in the purposes and samples involved in the different surveys prevented complete mergers. (Brown and Faupel 1986; Bayless, Beaton et al. 1987; Burstein and Aschbacher 1987; Center for Education Statistics 1987).

By coordinating surveys, NCES can also potentially reduce respondent burden across surveys by fielding fewer surveys. While in some cases the data collection burden for a particular instrument may increase, the overall burden on schools or states may actually decrease if NCES is able to coordinate its surveys in a way that decreases the number of surveys fielded. In these situations, coordinating surveys may not only reduce respondent burden but also improve response rates, particularly among data collections from schools and states, by increasing overall voluntary participation of the schools and states that participate in multiple NCES data collection efforts.

Lower Data Collection Costs

NCES surveys provide the best national data on elementary, secondary, and postsecondary education as well as adult education, literacy, and lifelong learning, and therefore are used by parents, teachers, districts, states, researchers, and policymakers to monitor and gain a better understanding of education. Yet, there are many areas where data gaps still persist. NCES is constantly being pushed to fill these gaps, often under very tight funding constraints. It is critical that NCES plan and coordinate its surveys to take full advantage of the connections that exist between them.

Integrated or merged surveys can help NCES to reduce federal survey collection or analysis costs by reducing duplication and increasing efficiency. These potential cost savings can be generated in several ways. First, linking existing data sets can lower federal data analysis costs, by eliminating the need for repeatedly re-establishing the same links between separate surveys. Often different analyses link and use the same group of related surveys as those used in previous analyses. However, these links often are not saved in any systematic manner and thus require NCES and outside researchers to replicate the linking processes. Linked databases enable NCES and other federal agencies to easily access rich data sources without replicating work already done for other analyses.

Second, coordinating surveys in ways that take advantage of potential overlaps in sample populations and sampling time frames to collect more extensive data from survey subgroups may save on NCES data collection costs. For example, coordinating the collection of data on two teacher surveys administered by mail may minimize postage costs and lower follow-up phone calls. Rather than sending two separate mailings to the overlapping groups, NCES could send one mailing that would include both surveys to the teachers in both surveys.

Summary

Given the numerous ties between the different NCES surveys, there are several rationales for coordinating the planning, fielding, processing, or analysis of its surveys. First, survey

coordination can potentially provide more insight into key research and policy questions by improving the analytical potential of NCES surveys. Second, by coordinating survey instruments, NCES may reduce the data collection burden placed on respondents. Finally, survey coordination efforts can potentially lower data collection costs. The next section discusses in more detail some of the strategies that can and have been used to coordinate surveys.

Potential Survey Coordination Strategies

This section briefly describes three groups of potential survey coordination strategies. They are: common or coordinated survey administration processes; common variables, data definitions and questions; and integrated/merged sampling design. The first group of options focuses primarily on coordinating administrative, logistical, or technical activities that are somewhat independent of the survey's content or sampling plan. The second group of options involves coordinating the content of different surveys, recognizing the overlaps in the content areas covered by NCES surveys. The third group includes ways that NCES can integrate or merge the sampling design of surveys.

These options take advantage of distinct windows of opportunity for coordination. Some of these opportunities are present when the analytic and sampling plans are being designed, (e.g., when a new survey is being planned, an ongoing survey is going into the field or is being redesigned, or Congress is considering legislation to reauthorize an existing survey or assessment). Others present themselves during the data processing and database construction phases, after NCES has designed and fielded the survey.

NCES has done considerable work to coordinate many of its surveys using these three strategies. Some of this work is routinely conducted between the set of integrated surveys that make up the different NCES survey programs. In addition, NCES works to ensure that proposed surveys are coordinated with ongoing surveys through an internal survey coordination board, which reviews all new or redesigned surveys. One of the board's main objectives is to identify areas of potential overlap, duplication, or inconsistency that proposed surveys might have with other NCES surveys. Other coordination activities begin as special activities or in response to special requests. Current efforts notwithstanding, additional opportunities for coordination of NCES surveys exist. Descriptions and examples of these options are provided below.

Common or Coordinated Survey Administration Processes

Using common or coordinated survey administration processes is one option to coordinate surveys. This survey coordination option takes advantage of the fact that NCES routinely goes through several similar administrative steps when planning, fielding, coding, and processing its surveys. Processes and procedures followed during these survey steps are not dictated exclusively by the content or statistical sampling plan of the survey. Rather, these processes tend to be influenced by factors such as logistical considerations, feasibility issues, and existing practices in the agency or in the survey community. Opportunities for coordinating survey processes or implementing common procedures arise during survey scheduling, data processing, and database construction stages of NCES surveys. Examples of common or coordinated administrative processes include coordinating data collection schedules, using common data processing techniques, and using standard linking procedures. Each of these is discussed below.

NCES can coordinate the fielding of the agency's surveys internally by developing and maintaining a master schedule that allows NCES to be aware of potential overlaps in survey samples. This type of coordination already exists to some extent but is complicated by the fact that multiple contractors are involved in NCES data collection efforts. These coordination efforts also might be enhanced and made more routine. As mentioned earlier, the periodicity of NCES surveys varies, with surveys conducted annually, biennially and at other regular intervals. Scheduling the timing of a survey's data collection phase is often influenced by a complex set of variables. School, college or university calendars, the availability of state, local, school or other institutional data, NCES planned data release dates, budget issues, and staff availability often play important roles. In addition, the timing of other NCES data collection efforts can be important in scheduling when a survey goes into the field. As conflicts become apparent, NCES can plan accordingly, either to avoid overlaps or acknowledge that multiple surveys are being sent to the same respondents within a short time frame. NCES can also follow special procedures to encourage respondent participation in multiple surveys.

NCES also can coordinate the coding of data by using standard data processing procedures. This strategy can potentially reduce survey costs while facilitating analysis of NCES data sets. As data are collected from states, school districts, students, or educators, NCES codes categorical data to make processing, tabulation and analysis less complex. NCES can employ uniform coding conventions for standard categorical variables to simplify this tabulation and analysis. Similarly, standard methods for coding background variables, such as age, enhance the compatibility of data between survey databases. Developing and using common procedures for special cases (e.g., missing variables, legitimate skips, imputations, etc.) also can make data sets easier to use by analysts. For example, uniform treatment of missing variables across NCES surveys has the potential to assist those analyzing multiple data sets, both those merging or integrating data sets and those working on separate analyses. Again, NCES uses standard data processing procedures to some extent, but opportunities exist for further coordination. Figure 1 illustrates the use of uniform coding conventions.

Using standard procedures for linking data sets provides a third example of a way that NCES can coordinate its survey administration processes. NCES surveys are often linked or merged using common identifiers (codes for identifying districts, schools, or students). Links between surveys that collect information on the same set of survey respondents (or on respondents with an established relationship, e.g., students and schools) may enhance the analytic potential of these surveys. In some cases, this may involve linking data from an ongoing survey effort across years (e.g., the CCD). In other cases, it may mean linking data from one of the two NCES universe surveys (the CCD or IPEDS) with data from various NCES sample surveys. For many surveys, common identifiers are already used to link databases. Figure 2 illustrates links between two databases using common identifiers.

Figure 1 –Common Data Coding Techniques

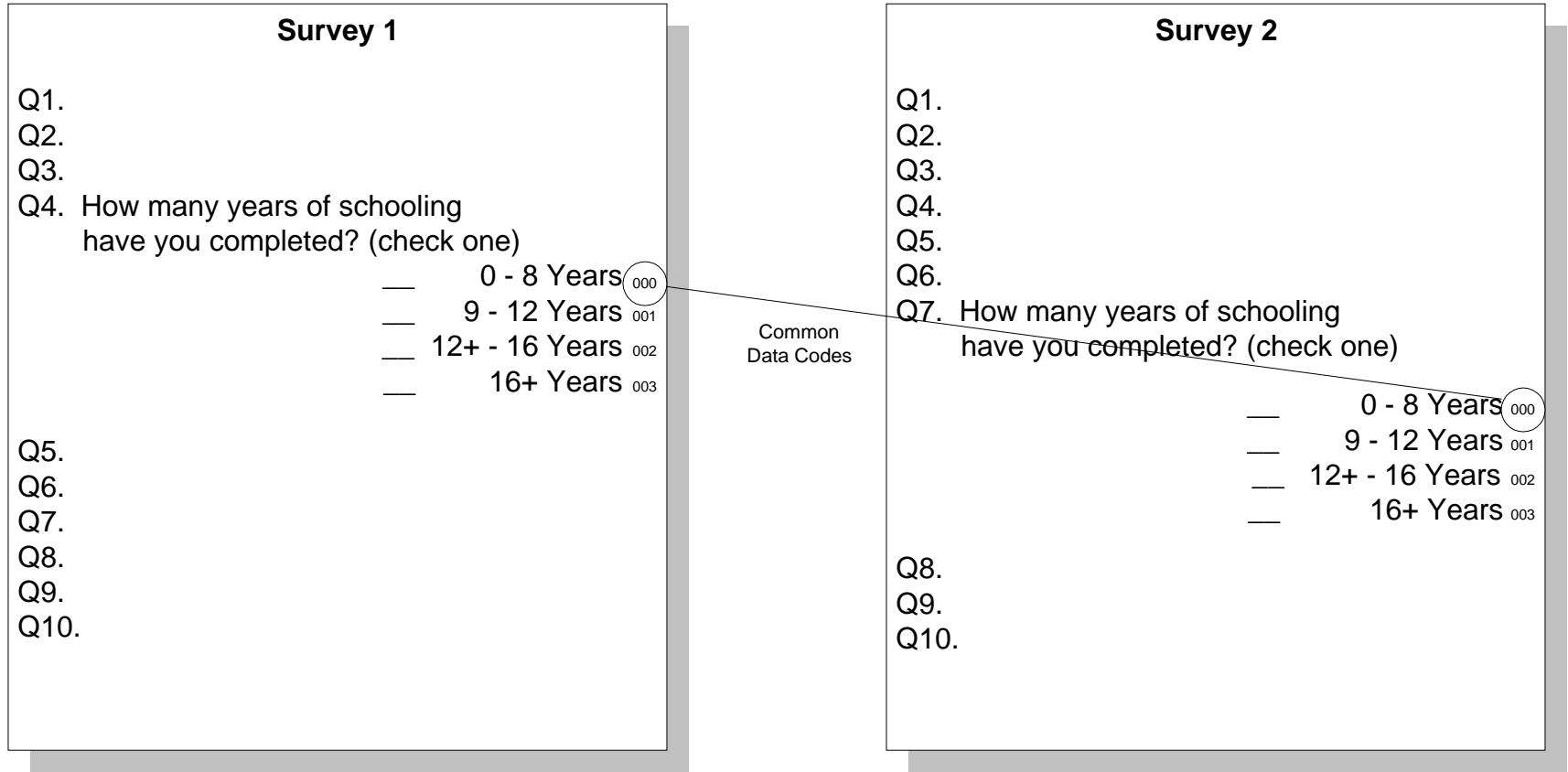
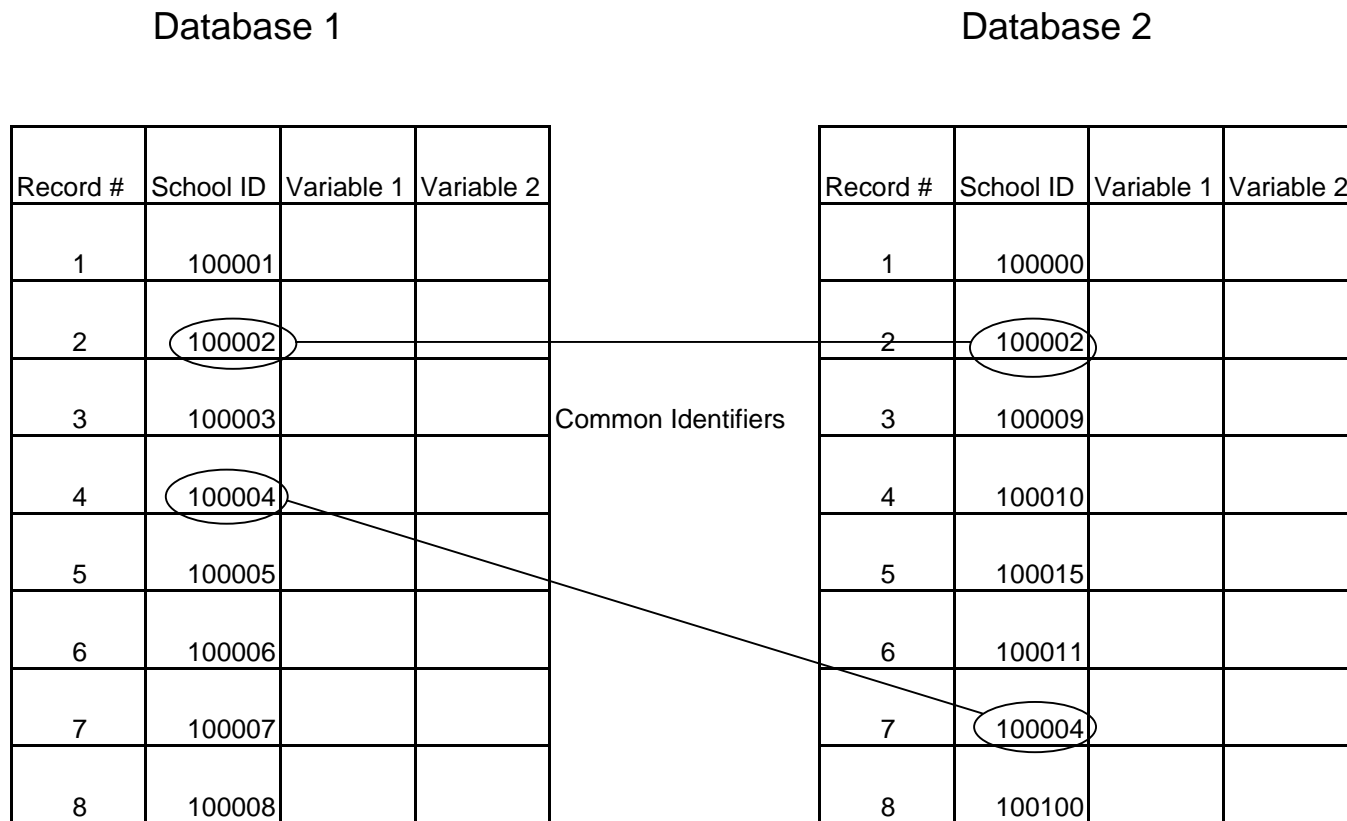


Figure 2 - Linking Data Sets Using Common Identifiers



Notable advances in technology have made linking less difficult and costly in recent years than it has been in the past. As a result, NCES has undertaken more projects to link data sets and has been able to disseminate these data sets more widely. For example, NCES is currently working on a data warehousing project to make data more readily accessible to the public. As part of this project, NCES is seeking to link universe data across years. In addition, NCES will begin linking existing sample to universe databases using common identifiers. Because procedures for linking data sets are not always straightforward, common procedures for dealing with anomalies will ensure comparability across NCES surveys. Furthermore, developing common procedures for including identifiers in databases and addressing confidentiality issues can ensure that links are treated in a similar manner across surveys.

Using standard processes to streamline some of the procedural aspects of survey administration offers NCES the potential to lower administrative costs across the center's surveys and improve the usability of surveys. Similarly, coordinating the implementation of different phases of various surveys, particularly the data collection phase, may improve response rates and reduce respondent burden.

In summary, one set of options for coordinating surveys, using common or coordinated survey administration processes, includes coordinating the timing of fielding NCES surveys and using standard methods for coding data and linking surveys. Unlike the other two sets of options discussed below, this option coordinates processes that tend to be influenced by logistical considerations, feasibility issues, and existing practices in the agency or in the survey community, rather than analytic concepts or sampling and design features.

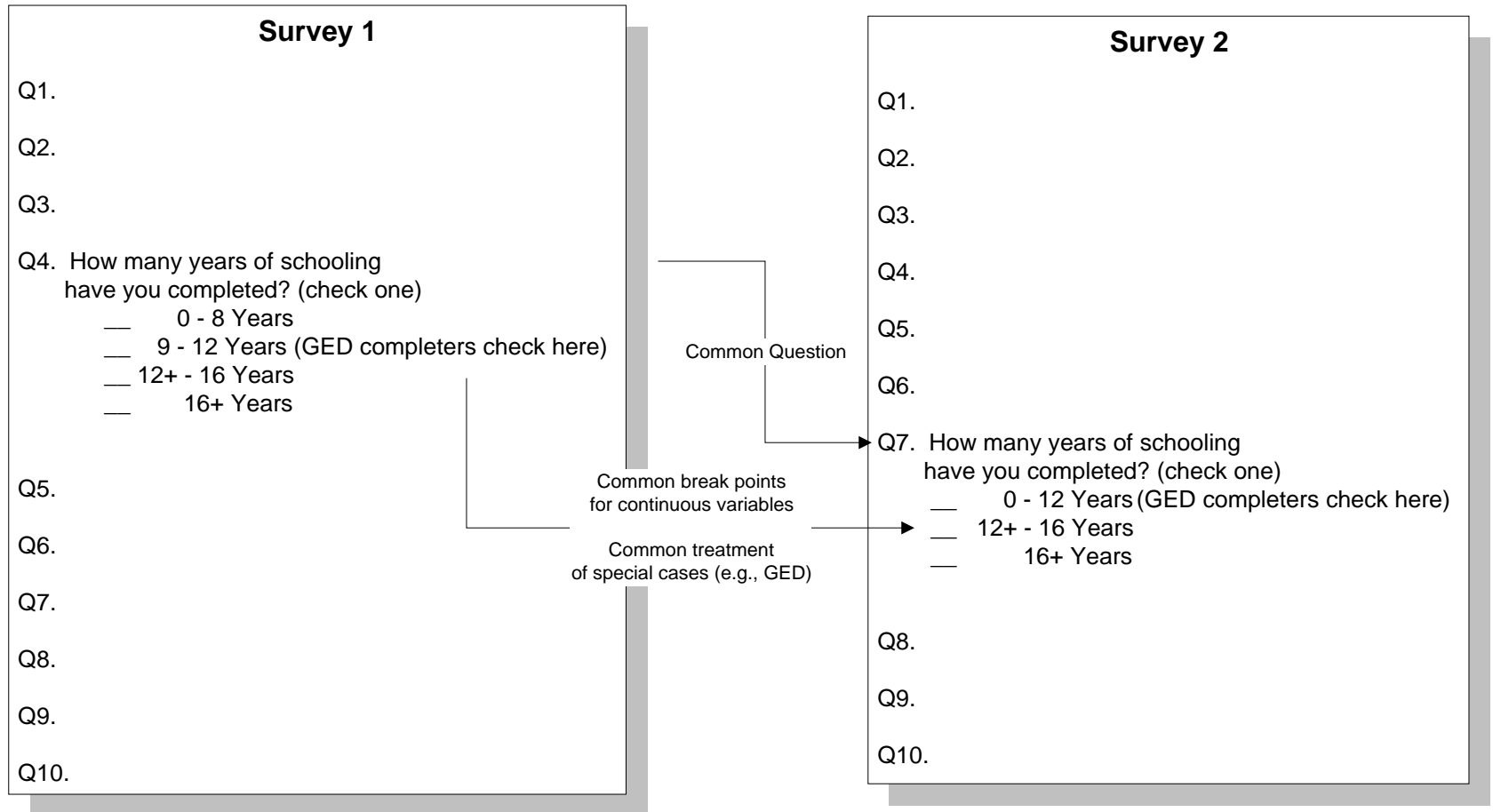
Common Variables, Data Definitions, and Questions

NCES surveys often gather similar information, particularly basic demographic data on students, parents, teachers, or other educators, from survey respondents. Many surveys, for example, collect data on a student's age and race or ethnicity. One simple way to coordinate between NCES surveys, or between NCES and other ED surveys, is to ask common questions or use common data definitions for standard variables, particularly key demographic cuts. Collecting information on a standard set of key variables enhances the analytic capability of NCES data by allowing similar surveys (e.g., all elementary/secondary surveys or all postsecondary surveys) to provide data on variables that are comparable across surveys.

Figure 3 illustrates how different questions on two separate surveys can be coordinated. As illustrated in the example, some surveys may collect more detail than others, but use common questions and some common break points. Standard break points for continuous variables can facilitate comparisons across surveys by allowing researchers and analysts to collapse categories in surveys collecting more detail into categories used in surveys with fewer categories. Similarly, the common treatment of special cases (e.g., classifying GED recipients) can facilitate comparisons across surveys.

Many examples exist that illustrate ongoing NCES efforts to develop common questions, data definitions, or variables. For instance, work is currently underway to develop a standardized set of transcript variables that can be used by NCES and researchers to analyze data using HS&B, NAEP, and NELS:88 and that will also serve as the basis of a transcript taxonomy

Figure 3 – Common Definitions/ Questions



(Alt and Bradby 1999). NCES has also worked to develop common elements between national, state and local data collection efforts. Through its endeavors with the National Forum on Education Statistics, NCES has sought to establish recommended data elements for the student and staff information systems used by state and local education officials.

As educational needs and practices change, NCES must also reevaluate the common categories used for different variables. Data on educational attainment provide an excellent example. Virtually all federal social surveys collect data on educational attainment. However, government surveys collect these data in many different ways. Some ask about years of schooling while others collect data on degrees obtained. Still others gather data on a combination of the two.

Because more consistency in the way these measures are collected would permit greater comparability between analyses, the Interagency Committee on Measures of Educational Attainment, chaired by NCES, is reviewing the different educational attainment measures used, and proposing a set of minimum categories that should be used across agencies (Federal Interagency Committee on Measures of Educational Attainment 1/14/99).

In summary, the second set of options, common variables, data definitions and questions, include options for using common analytic concepts and wording across surveys. This set of options takes advantage of the connections between surveys that cover common topics, as well as the fact that nearly all NCES surveys collect background data on respondents. These options enhance the analytic capability of NCES data by allowing similar surveys to provide data on comparable variables.

Integrated/Merged Sampling Design

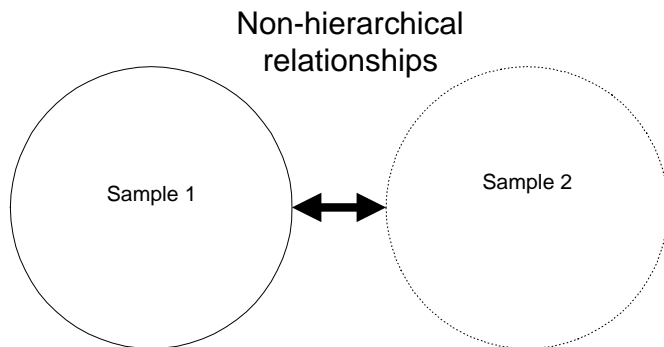
One of the most ambitious coordination options involves integrating or merging the design and/or administration of sample surveys. Overlaps in the sample and/or survey time period of different surveys can offer many opportunities to collect more comprehensive data on students, teachers or schools than would be possible if the two surveys were conducted independently.

Integrating the design and administration of sample surveys can be thought of as one category of options, as NCES may actually consider a range of coordinating options. As illustrated in Figure 4, three options exist:

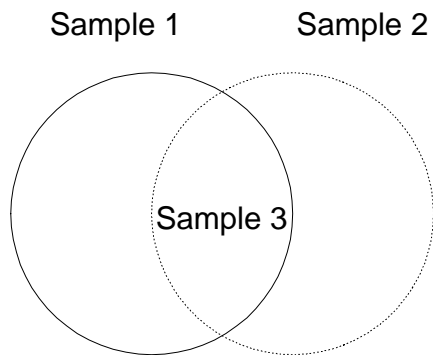
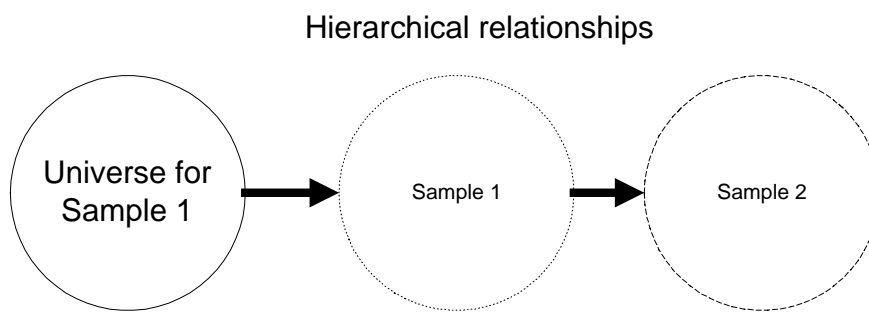
- Coordinating relational samples;
- Creating a separate subsample from two partially overlapping samples; and
- Drawing a subsample from an existing sample.

Each of these options is discussed briefly below.

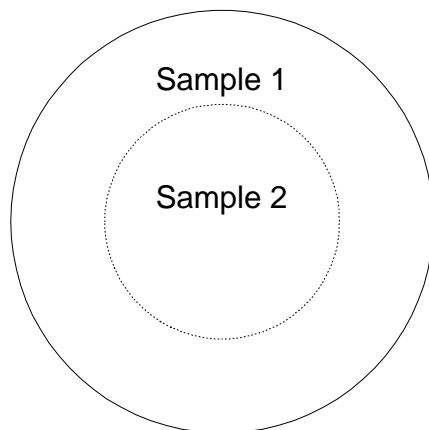
Figure 4- Coordinating Sampling Design



Case I: Relational Samples
Two distinct samples (e.g., teachers and students) are related through common links (e.g., common schools).



Case II: Partially Overlapping Samples
Separate sample formed by overlapping samples.



Case III: Subsamples
One survey is a subsample of another sample survey

Coordinating Relational Samples

The first option, *coordinating relational samples*, draws and coordinates data gathered from samples taken from two separate universes, for example, teachers and schools. As a result, there is no overlap between the two groups of survey respondents. However, a familial or educational relationship exists between the two groups (indicated in Figure 4 by the solid line connecting the two separate samples). This link is significant, as it permits analysts using NCES data to link survey responses using some sort of common identifying link – for example, school ID – to analyze data across multiple dimensions.

As indicated in Figure 4, this link may be hierarchical or non-hierarchical. A hierarchical link requires samples to be drawn in a specific order (e.g., first schools, then teachers, and then students). Data linked with non-hierarchical connections can be generated in either direction, with either sample being generated first.

Creating a Separate Subsample from Two Partially Overlapping Samples

A second option, *creating a subsample from partially overlapping samples*, draws two samples from the same universe (e.g., from schools). However, the samples are designed to overlap and to create a separate subsample with known statistical properties. NCES considered creating this type of link between NAEP and NELS to learn more about student achievement and the different pathways towards postsecondary education or work. This approach, which was not taken, would have required NCES to design the NAEP and NELS samples to be large enough so that the overlapping group (the NAEP/NELS group) would provide reliable estimates.

Drawing a Subsample from an Existing Sample

Under the third option, *drawing a subsample from an existing sample*, the second sample is a sub-set of the first sample. This coordination technique is used by NCES to generate the B&B (Baccalaureate and Beyond) and BPS samples from the NPSAS sample. This approach provided a cost-effective method for identifying a nationally representative sample of postsecondary students to use when collecting data on the experiences of postsecondary students during college (BPS) and after they complete a bachelor's degree (B&B).

Summary

These three options—coordinating relational samples, creating a separate subsample from two partially overlapping samples, or drawing a subsample from an existing sample—all potentially permit NCES to lower respondent burden, reduce cost, and/or increase the analytic capacity of its surveys. To ensure that these surveys can provide reliable estimates, however, the links between sample surveys must often be complex. Because of their complexity, these options are not always pursued. Nevertheless, there continues to be much interest in considering these complex links among existing surveys, particularly as technological advances make more complex tracking procedures easier.

Summary

Methods for coordinating NCES surveys can be thought of as three options: common or coordinated survey administration processes; common variables, data definitions and questions; and integrated/merged sampling design. Each option focuses on coordinating a slightly different aspect of the planning, development and implementation of NCES surveys. The first option focuses on coordinating primarily technical, logistical and administrative processes. The second concentrates primarily on coordinating overlaps in survey content. The third concerns methods for coordinating sampling plans. The issues and challenges associated implementing these options are discussed in the following section.

Issues and Challenges Raised when Coordinating Surveys

Each of the survey or data coordination strategies discussed in the previous section raises a different set of issues and challenges that NCES must consider and address for a survey coordination effort to be successful. This section briefly discusses the challenges raised by the three different survey coordination strategies and provides examples of how NCES has dealt with some of these issues.

Common or Coordinated Survey Administration Processes

Using common or coordinated survey administration processes raises a host of issues. This section discusses the aspects involved in coordinating the fielding of surveys and developing common administrative procedures for coding variables and developing links between existing surveys. It then discusses cross-cutting issues involved in implementing standard administrative processes across the agency or coordinating administrative processes.

In order to coordinate surveys in the field, NCES needs an ongoing project tracking mechanism to identify potential schedule conflicts so that it has sufficient time to make any appropriate arrangements. In cases of potential overlaps, NCES must evaluate whether surveys should be rescheduled, or whether special arrangements should be made to acknowledge that respondents may be asked to participate in multiple surveys.

Developing a common standard for coding different categories of variables (e.g., missing variables, categorical variables, etc.) requires NCES to agree upon implementing standard procedures across different surveys. This is one of the more straightforward ways to coordinate surveys, and therefore does not raise as many issues as other possible coordination strategies.

Any effort to employ common coding conventions in current databases may also involve revising or recoding data in already existing data sets to make them comparable over time. In this case, NCES will need to determine the effects, if any, on current practices and procedures of such a change. For example, recoding an existing data set may require that code books, including electronic codebooks, be updated and rereleased. Or it may require that current algorithms or extraction procedures be rewritten to extract or tabulate data accurately.

Linking data sets with common identifiers can be a relatively straightforward process in some cases. In many cases, however, linking poses several issues. First, for links across annual universe data collections, NCES must develop procedures for dealing with changes in the number and/or types of schools and districts over time. Timing issues often force NCES to deal with these problems when establishing links between universe and sample surveys. For example, the 1993-94 SASS sample was drawn from the 1991-92 CCD and can be easily linked to that survey. For analytic purposes, however, it makes most sense to link the 1993-94 SASS survey with the 1993-94 CCD survey. These links may not be as straightforward, however, because of changes in identifiers, miscodes, etc. In addition, non-standard schools and districts can sometimes pose linking problems. Because of their non-standard nature, they are often coded inconsistently across years by survey respondents, despite the fact that no significant substantive changes have taken place in their functions or operations. (A review of the 1990-91 SASS found inconsistencies between the way school types were reported on the SASS and the CCD (Zhang, Saba et al. 1994)).

NCES may also need to build procedures for dealing with links between surveys that do not have separate fields with common identifiers. Some of the older sample surveys with samples drawn from the CCD or IPEDS do not have separate fields that contain CCD or IPEDS identifiers. The 1987-88 SASS and all NAEP files prior to 1994 do not carry CCD identifiers. While these variables can often be constructed from other variables, NCES must determine the best way to make this match, whether that be through matching programs, indirect links, or via other variables.

Establishing links between databases also can raise confidentiality issues that need to be addressed. Explicit links between sample surveys and administrative data using common identifiers means that individual districts, schools, colleges, or universities can be identified. Maintaining confidentiality can be achieved by using table generators that do not display data when cell sizes are too small or by creating new restricted use files. When linking restricted files, however, NCES must consider what types of linkages make the most sense in light of the various efficiency and analytic considerations. Direct links between entire data sets may produce the greatest analytical improvements because they maximize the amount of information available for analysis, however, simply attaching key variables from one survey onto another may be a better approach to protect respondent confidentiality. Work is being done on a software program that assesses the risk of disclosing individual respondents when these links are made.

Finally, implementing common survey administration processes or coordinating survey schedules requires NCES to deal with a number of significant logistical and coordination issues within NCES and between NCES and its contractors. The principal issue to be considered when using common administrative techniques is how best to coordinate among the various survey efforts to ensure that a common standard is agreed upon and used. Coordinating the administrative processes of multiple surveys, on the other hand, requires developing a way to maintain, and implement an ongoing coordinating mechanism between these surveys. Since NCES surveys are developed by numerous contractors, subcontractors, and government agencies, this may present a considerable challenge.

In summary, coordinating administrative procedures across surveys presents a number of issues and challenges. Coordinating survey schedules requires an efficient method for tracking survey development across survey programs and finding ways to deal with potential conflicts or opportunities as they arise. Coordinating survey coding may involve updating existing data files and codebooks. When linking surveys, procedures for dealing with non-traditional or changing

schools and ways to deal with confidentiality issues are needed. Moreover, coordinating administrative procedures challenges NCES to communicate across the different survey program areas, contractors and government agencies involved in developing, fielding, and coding the agency's surveys.

Common Variables, Data Definitions, and Questions

NCES must consider several issues and challenges when using common data definitions and questions across surveys. First, it must work with statisticians, researchers, educators, and policymakers to develop commonly agreed-upon definitions or questions. As different surveys are designed to answer distinct policy questions, this may involve a lengthy consensus-building process to reach agreement on the best definition or wording of a question. In some cases, agreed-upon standards already exist and are widely used. For example, NCES and other federal surveys use the Classification of Instructional Programs (CIP), the official federal data standard for reporting data on instructional programs, to categorize secondary and postsecondary instructional programs. In many cases, however, standards do not exist. Developing these standards may be a difficult process, especially when trying to create common variables or questions that capture new or complex education phenomena such as state education reforms.

Second, NCES must consider if, and how, definitional changes are likely to affect trend data and whether the advantages to be gained by using a new definition or question outweigh the disadvantages. For example, changes in the definition of race may have significant implications for ongoing surveys by making it difficult to draw any longitudinal conclusions on the racial composition of different groups. In these cases, NCES may need to consider bridging studies or other additional work so that trends across the change can be analyzed. Although new methods of measuring different variables may be troublesome, if the new definitions more accurately capture the concept being measured (e.g., by more accurately describing the racial and ethnic make-up of a group of students), the advantages of making such a change might far outweigh the disadvantages.

Finally, it must be assessed how these changes might affect other data collection efforts outside of NCES. Other agencies and organizations often use NCES surveys as models when developing similar surveys. Many state and local education agencies (LEAs) include questions that parallel NCES items on their sample surveys and local administrative record systems. This allows states and localities that wish to compare themselves with a national total to do so on variables with the same definitions. For example, the use of similar course classifications in NCES administrative records collections (SPEEDE/EXPRESS) and sample-based transcript studies allow LEAs to compare their own coursetaking profiles with national data from the transcript surveys. Thus, changes in the way variables are defined by NCES may cause LEAs to incur significant costs, if LEAs want to maintain comparability.

To summarize, when developing common variables, definitions, and questions, NCES must address a number of issues. First, it must work with researchers, policymakers and others to develop elements, items, or questions that capture the concept being measured. Second, it must assess whether any changes are likely to have negative impacts on trend data. Finally, NCES must evaluate the likely impact of changes to survey variables, data definitions, and survey items on parallel surveys or data collection efforts.

Integrated/Merged Sampling Design

Because of its ambitious nature, coordinating the design or administration of sample surveys raises a number of technical, administrative, and logistical challenges for NCES to consider. Many of these challenges were discussed in the two conferences centered on possible survey mergers between NAEP and SASS or NAEP and NELS (Brown and Faupel 1986; Bayless, Beaton et al. 1987; Burstein and Aschbacher 1987; Center for Education Statistics 1987). The issues raised during these forums are relevant to other efforts to merge or integrate surveys, including current discussions centered on possible NAEP-ECLS or ELS-PISA coordination efforts. Some of these issues are more general and should be considered in any effort to coordinate the design of sample surveys. Other issues only come up under certain circumstances, for example, when trying to merge a cross-sectional survey with a longitudinal survey.

This section briefly summarizes some of the issues and challenges raised during the two conferences. They include:

- Considering whether integration will address research questions;
- Maintaining the integrity of existing data collection efforts;
- Assessing the impact of proposed changes on respondent burden;
- Increasing administrative complexity;
- Ironing out problems with new data collection efforts; and
- Assessing the effect on survey response rates.

These challenges are described briefly below.

Considering Whether Survey Integration Will Address Research Questions

First, NCES must carefully consider whether merged survey efforts will answer important policy or research questions. Combining two sample surveys initially constructed to provide data on different subjects may provide a richer database on the sampled schools, teachers, or students. However, the new database may not be the best, or even an appropriate, way to address related research questions.

Discussions during earlier merger conferences illustrate this point. Many participants in the SASS-NAEP conference questioned the policy or research usefulness of merging the two surveys. Some of this skepticism reflected the lack of clarity over the specific research questions that could be answered by a combined survey effort. Other comments reflected concern that data from an integrated survey would be misinterpreted because questions would not be constructed to address particular research questions. For instance, many felt that if the motivation to integrate or merge data collection efforts was to obtain additional insight into the effects of teaching resources on student achievement, combining the SASS and NAEP surveys would not produce the desired results for a variety of reasons (e.g., insufficient detail on classroom resources, problems with drawing causal relationships with cross-sectional data, etc.). Alternatively, if the objective was to obtain better data on the characteristics of teachers of

students at different achievement levels, conference participants felt that a simpler and less costly way to achieve this objective would be to add additional background questions to the NAEP teacher questionnaire.

Maintaining the Integrity of Existing Data Collection Efforts

A second challenge that NCES must confront when coordinating the data collection for two separate sample surveys is how to ensure that new data will be comparable to already collected data when one or more of the surveys represents an ongoing data collection activity. Researchers and policymakers have expressed concern that mergers between existing data series and other new or existing data series might hinder future comparisons and analyses of time trends.

For example, during previous discussions over the prospects for merging the NAEP and SASS or the NAEP and NELS surveys, many expressed concern that attempts to merge NAEP with other data collection analyses could put too many demands on an already ambitious data collection effort and prevent future comparisons of achievement data across years. In these cases, a merger might have made the survey administration overly complex or prompted NCES to eliminate important questions for trend comparisons. Alternatively, some felt that combining NAEP with NELS could prompt schools to begin “teaching to the test” and thus influence achievement data over time.

Realistically Assessing the Impact of Proposed Changes on Respondent Burden

A third challenge raised when merging sample surveys is assessing the effect of a merger on respondent burden. Depending on the specific sampling strategies of the two surveys to be merged, the merged effort may not reduce respondent burden for the majority of individuals providing survey information. Instead, coordinating surveys may shift data collection burden from two shorter surveys to one slightly longer survey for groups where overlapped collection is planned.

This issue was raised repeatedly during the SASS-NAEP and NELS-NAEP conferences. Many participants expressed concern that merging surveys might not lighten data collection burdens, but rather shift them from one group to another so as to impose heavier burdens on fewer respondents. For example, under the different SASS-NAEP proposals, coordinated data collection efforts were likely to result in increased data collection times, as schools would not only have to administer tests but also complete longer background surveys on staffing resources.

Increasing Administrative Complexity

Fourth, coordinated data collection may have a large impact on the complexity of survey administration. Coordinating sample surveys may greatly increase the administrative complexity of both surveys by requiring survey administrators to implement more complex sampling procedures, track additional respondents, develop and use similar coding schemes, and coordinate with other survey administrators. This increase in administrative complexity may, in turn, increase overall survey costs by increasing the administrative resources needed to coordinate between surveys.

During the SASS-NAEP and NELS-NAEP conferences, participants offered and discussed a variety of creative sampling plans that might best be used to integrate the different surveys. These plans varied in design, but as might be expected, all increased the administrative

complexity of conducting the surveys by requiring contractors to implement more complex sampling procedures and track additional subgroups. As a result, many researchers felt that the increased administrative complexity associated with these mergers was likely to eliminate any cost savings realized by integrating the data collection efforts.

Ironing Out Problems with New Data Collection Efforts

A fifth issue that emerges when coordinating the design and/or administration of sample surveys comes up when one of the surveys to be merged is a new survey. In particular, NCES must figure out how to resolve problems in the new survey while simultaneously merging it with an ongoing survey. And it must try to resolve these issues in a manner that does not have a negative impact on the ongoing survey.

Both the SASS-NAEP and NELS-NAEP conferences examined the possibility of integrating or merging new surveys (in these cases, SASS or NELS) with an ongoing data collection effort (NAEP). Many conference participants felt that potential overlaps in the sample population presented an important opportunity for NCES to consider methods for a merger. However, both groups concluded that the new surveys were likely to encounter unanticipated problems (e.g., with the wording of particular questions, misinterpretation of survey questions, etc.). As a result, both groups recommended that NCES first field the new survey by itself before attempting to integrate survey questions with an existing survey.

Assessing Effect on Survey Response Rates

Finally, NCES might have to address the effect on survey response levels when merging sample surveys. In particular, in some cases, merging two surveys may lower response levels for one or both surveys if integration significantly increases respondent burden. This may require special accommodations if the integrated sampling plan calls for the two surveys to be integrated over time. In other cases, however, survey integration may actually increase response levels by reducing burden. This may be particularly true of administrative level data collection efforts. When integration efforts include both unit-level and administrative level surveys, it may increase response rates for some groups but not for others. For example, merging NAEP-SASS might have a negative effect on some respondents (due to a lengthier survey instrument), but may encourage some states to participate in state NAEP because of increased efficiency.

To ensure that both surveys have adequate sample size to uncover significant results, adjustments would need to be made to the sampling plans to ensure that both: 1) the samples drawn for both surveys are large enough to have sufficient statistical power, and 2) the overlapping sample (between the two surveys) also would have an adequate number of cases. Because of the associated complexity, merging a longitudinal survey with a cross-sectional survey may either jeopardize the generalizability of the cross-sectional survey or increase the costs (by requiring larger sample sizes).

Summary

Strategies to integrate or merge sample design must deal with a number of issues and challenges in order to provide data of value. These include assessing whether integration will provide the relevant data, harm existing or future data collection efforts, increase respondent burden or administrative complexity or effect survey response rates.

Summary

The three survey coordination options present different issues and challenges for NCES to consider and address. The first option, developing common or coordinated survey administration processes, requires NCES to coordinate survey schedules, coordinate data coding, and link non-traditional and changing schools while not ignoring confidentiality issues. Equally important, however, NCES must develop and implement methods for communicating and coordinating proposed changes across its different survey programs and contractors. When pursuing the second option, developing common variables, data definitions and questions, NCES must invest time in developing a set of questions or definitions that will accurately measure the item in question, as well as weigh the tradeoffs involved in losing historical trends when changing current survey items. Numerous issues need to be addressed when considering the third option, integrating or merging the sampling design of two or more surveys. They include considering whether integration will actually address research questions, jeopardize the integrity of existing surveys, increase respondent burden or administrative complexity, harm new data collections, or reduce response rates.

While each of these groups of options presents its own unique set of challenges, one common consideration should be taken into account when contemplating any of these options. In particular, NCES needs to continue to allow its staff and contractors opportunities to develop and incorporate new or innovative survey methods and procedures, as well as opportunities to experiment with new survey elements, items, or questions.

Next Steps

As discussed throughout the paper, NCES has pursued and is continuing to undertake many survey coordination efforts. Throughout these initiatives, NCES staff has grappled with many of the issues and challenges outlined above. Most of these efforts have paid off and been very successful in reducing respondent burden, increasing analytic potential and/or reducing costs through increased coordination. Some promising efforts, however, have not been as successful in securing the sustained attention and commitment necessary from NCES staff to really take hold.

This section discusses two areas where NCES can build on the successes of past efforts. The first area involves coordinating administrative survey procedures by building on past work to *develop web-based references and tools for survey administration processes*. NCES can also continue its investment in defining common variables and *develop a common set of background variables*. These two groups of options are discussed below.

Develop Web-based References and Tools for Survey Administration Processes

NCES work to develop standard administrative procedures is ongoing. These efforts, however, are often not communicated agency wide. As a next step in this area, NCES could develop ways to communicate and disseminate this information more widely, so that they could be implemented agency wide more easily. In particular, NCES could develop:

- *References for common survey administrative processes.* NCES could develop an Internet and Intranet reference containing methods for dealing with common survey administration processes. These references could be posted on a web page that would be available to all NCES staff, and also potentially to contractors. Such a reference area would have the benefit of being easily accessed by all NCES staff members as well as easily updated when new procedures are developed. When NCES staff shift responsibilities, such a reference area would also allow NCES staff to easily identify relevant references. New procedures that are expected to be applicable to other surveys could also be posted here.
- *Tool for tracking surveys.* NCES could develop an agency-wide method for tracking its surveys. Similar to charts in *Program and Plans*, the chart could show past, current, and anticipated data collection schedules for the agency's data collection efforts. To make it a useful planning tool, however, it should be updated regularly and easily accessible to all NCES staff. Regular updates could be completed on a monthly or quarterly basis. As schedules may change due to funding or other considerations, major scheduling changes during the month or quarter could be summarized for users. A web-based tracking mechanism, posted on the NCES web site or on an internal Intranet, might work well for disseminating this information. In addition to the type of information posted in *Programs and Plans*, this tracking system could contain additional detail on other survey development, processing, and dissemination phases. This work could build off work done for the Quality Systems Task Force, and other internal agency tracking mechanisms.

These references and tools could be developed over time, with current standards posted immediately and new standards posted when needed.

Develop a Set of Common Background Variables

As next steps, NCES could develop and promote the use of a set of basic variables for use across NCES surveys and for all major reports. This work would build on and extend current activities in a systematic manner, and could be done gradually. Use of a set of common definitions and reporting categories would facilitate comparison across surveys, and between NCES and other ED surveys as well as between NCES and other federal surveys.

Three variables stand out as excellent candidates for continued work in this area: educational attainment, urbanicity, and poverty/family income. Each of these variables represents a key dimension along which analysis for NCES surveys is commonly performed. For each of these variables, considerable work has been done or is currently being conducted to develop a set of standard definitions and reporting categories; however, the results of these efforts have not yet been incorporated in any systematic manner to the production of NCES products. Thus, additional efforts to promote these variables as core NCES variables would leverage work already done by NCES and other government agencies.

Current practices for defining and reporting these variables, as well as NCES efforts to develop or implement standard definitions, are summarized briefly below:

- *Educational attainment.* Many NCES and other federal surveys collect data on the educational attainment level of a student or household member. Differences in the type of data and the level of detail collected, however, have made it difficult to compare these

data across surveys. For example, some surveys collect data on years of education while others collect data on highest grade or degree obtained. Also, differences in the way data on non-traditional degree recipients (e.g., GED recipients) are collected make it difficult to conduct meaningful comparisons across surveys. NCES is chairing the Federal Interagency Committee on Measures of Educational Attainment to coordinate the way federal agencies collect data on educational attainment across federal surveys. NCES could continue the work of the interagency group once standard definitions and reporting categories were defined.

- *Urbanicity.* One out of four American school children attends school in an urban district. These districts often face competing demands for services, deteriorating infrastructure, high poverty, and other special challenges unique to urban areas. To highlight the differences among these districts, as well as the differences in student outcomes, NCES worked to define and produce data on urban districts for the 1998 *Quality Counts* report by *Education Week* that focused on the state of urban education. The project used Census data on the characteristics of households within a school district to reclassify school districts as urban or non-urban. Under the definition used—urban districts were defined as those where at least 75 percent of the households served are in the central city of a metropolitan area—575 urban school districts were classified as urban districts. Further work in this area could build on the initial work done for the *Quality Counts* report, and help to standardize the reporting of urbanicity NCES reports. Additional work could also be done to develop better urbanicity data at the school level, building on NCES work to construct a measure of urbanicity at the school district level.
- *Poverty and family income.* Some NCES surveys collect and report data on family income. These data are often collected in different ways and with differing levels of detail. As a result, NCES publications report data on family income using inconsistent categories, for example, setting different thresholds for families with low, middle, and high income. Many federal agencies use the Census Bureau’s official poverty threshold to define low-income families. The poverty threshold differs according to family size and composition (e.g., number of adults and children in a family). Although the National Research Council, the Bureau of Labor Statistics, and the Census Bureau are currently exploring alternative poverty measures, the official measure is still widely used and accepted. NCES has done some work to report family income more consistently using the poverty threshold as the cut-off, however, it could extend this work to report family income and poverty more consistently across all of its surveys. This may involve work to standardize survey items so that similar break points can be calculated and reported across surveys, and sufficient data are collected so that poverty status can be calculated and reported. In other cases, it may simply involve selecting a minimum set of consistent thresholds to use when reporting poverty status and family income.

Summary

This paper presents two groups of options, *Developing Web-based References and Tools for Survey Administration Processes*, and *Developing a Set for Common Background Variables*, for NCES to consider as next steps. Both would build on existing efforts, and on the expertise learned from past NCES coordination efforts. As with past efforts, however, for either of these efforts to be successful, it is critical that they receive ongoing support from staff at all levels.

Conclusion

Because NCES surveys provide the best national data on elementary, secondary, and postsecondary education as well as lifelong learning, they are used by parents, teachers, districts, states, researchers, and policymakers to track and gain a better understanding of education. Yet there are many areas where data gaps still exist, and NCES is constantly being pushed to fill these gaps, often under very tight funding constraints. Thus, it is critical that NCES plan and coordinate its surveys to take full advantage of the connections that exist between them.

Connections between NCES surveys include connections between sampling frames, survey items, units of observation, and development and fielding schedules. Procedures for building on these connections through coordination activities between survey programs—developing and implementing common survey administration processes, standardizing data definitions and questions, and integrating or merging sampling designs—can enhance the power and efficiency of NCES surveys. In particular, increased coordination among NCES surveys has the potential to provide better data for educational policymakers, reduce the data collection burden placed on its respondents, and lower the agency’s data collection costs.

Each survey coordination strategy raises a set of statistical, administrative, logistical, or technical issues and challenges that NCES must consider and address as it works to better coordinate its surveys. These challenges differ across options, and include internal communication issues, measurement issues, logistical issues, and challenges related to developing statistical sampling designs. In the case of common or coordinated administrative processes, NCES must reach consensus on some technical issues, such as how to treat non-traditional schools when developing linking procedures, if consensus does not already exist. Perhaps the greater challenge to coordinating administrative processes, however, is developing ways for communicating and coordinating among NCES staff members who are already extremely busy. When developing and using common data definitions or questions, NCES staff must strive to reach consensus on the most appropriate idea to capture or the way to word a survey item, and consider how changes are likely to affect trend analyses. Finally, when merging or integrating sampling designs, NCES must consider a wide range of issues, including the administrative complexity added, the effect on respondent burden and response rates, and how integration will affect trends and research questions.

Several options exist for NCES to pursue further work in this area. The options discussed in this paper are those which would build on current or past activities and which could be undertaken relatively easily. The first option, developing web-based references and tools for survey administration processes, would involve the development of a web-based reference area that could be used by all NCES surveys to provide easy access to NCES standards for common technical processes, such as data coding conventions. In addition, because such a resource could be easily updated and disseminated, it would also provide an excellent method for tracking survey schedules. The second option, developing a set of common background variables for use across all surveys, could have significant analytic and other benefits. Three variables—educational attainment, urbanicity, and poverty/family income—stand out as good options for work in this area because they represent key dimensions for analysis and could leverage work already done by NCES and others.

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No.	Title	NCES contact
Baccalaureate and Beyond (B&B)		
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
Beginning Postsecondary Students (BPS) Longitudinal Study		
98-11	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-15	Projected Postsecondary Outcomes of 1992 High School Graduates	Aurora D'Amico
Common Core of Data (CCD)		
95-12	Rural Education Data User's Guide	Samuel Peng
96-19	Assessment and Analysis of School-Level Expenditures	William J. Fowler, Jr.
97-15	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
97-43	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-03	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
Decennial Census School District Project		
95-12	Rural Education Data User's Guide	Samuel Peng
96-04	Census Mapping Project/School District Data Book	Tai Phan
98-07	Decennial Census School District Project Planning Report	Tai Phan
Early Childhood Longitudinal Study (ECLS)		
96-08	How Accurate are Teacher Judgments of Students' Academic Performance?	Jerry West
96-18	Assessment of Social Competence, Adaptive Behaviors, and Approaches to Learning with Young Children	Jerry West
97-24	Formulating a Design for the ECLS: A Review of Longitudinal Studies	Jerry West
97-36	Measuring the Quality of Program Environments in Head Start and Other Early Childhood Programs: A Review and Recommendations for Future Research	Jerry West
1999-01	A Birth Cohort Study: Conceptual and Design Considerations and Rationale	Jerry West
Education Finance Statistics Center (EDFIN)		
94-05	Cost-of-Education Differentials Across the States	William J. Fowler, Jr.
96-19	Assessment and Analysis of School-Level Expenditures	William J. Fowler, Jr.
97-43	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
98-04	Geographic Variations in Public Schools' Costs	William J. Fowler, Jr.
1999-16	Measuring Resources in Education: From Accounting to the Resource Cost Model Approach	William J. Fowler, Jr.
High School and Beyond (HS&B)		
95-12	Rural Education Data User's Guide	Samuel Peng
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
HS Transcript Studies		
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson

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International Adult Literacy Survey (IALS)		
97-33	Adult Literacy: An International Perspective	Marilyn Binkley
Integrated Postsecondary Education Data System (IPEDS)		
97-27	Pilot Test of IPEDS Finance Survey	Peter Stowe
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
National Assessment of Educational Progress (NAEP)		
95-12	Rural Education Data User's Guide	Samuel Peng
97-29	Can State Assessment Data be Used to Reduce State NAEP Sample Sizes?	Steven Gorman
97-30	ACT's NAEP Redesign Project: Assessment Design is the Key to Useful and Stable Assessment Results	Steven Gorman
97-31	NAEP Reconfigured: An Integrated Redesign of the National Assessment of Educational Progress	Steven Gorman
97-32	Innovative Solutions to Intractable Large Scale Assessment (Problem 2: Background Questionnaires)	Steven Gorman
97-37	Optimal Rating Procedures and Methodology for NAEP Open-ended Items	Steven Gorman
97-44	Development of a SASS 1993-94 School-Level Student Achievement Subfile: Using State Assessments and State NAEP, Feasibility Study	Michael Ross
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
National Assessment of Adult Literacy Survey (NAALS)		
98-17	Developing the National Assessment of Adult Literacy: Recommendations from Stakeholders	Sheida White
1999-09a	1992 National Adult Literacy Survey: An Overview	Alex Sedlacek
1999-09b	1992 National Adult Literacy Survey: Sample Design	Alex Sedlacek
1999-09c	1992 National Adult Literacy Survey: Weighting and Population Estimates	Alex Sedlacek
1999-09d	1992 National Adult Literacy Survey: Development of the Survey Instruments	Alex Sedlacek
1999-09e	1992 National Adult Literacy Survey: Scaling and Proficiency Estimates	Alex Sedlacek
1999-09f	1992 National Adult Literacy Survey: Interpreting the Adult Literacy Scales and Literacy Levels	Alex Sedlacek
1999-09g	1992 National Adult Literacy Survey: Literacy Levels and the Response Probability Convention	Alex Sedlacek
National Education Longitudinal Study of 1988 (NELS:88)		
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
95-12	Rural Education Data User's Guide	Samuel Peng
95-14	Empirical Evaluation of Social, Psychological, & Educational Construct Variables Used in NCES Surveys	Samuel Peng
96-03	National Education Longitudinal Study of 1988 (NELS:88) Research Framework and Issues	Jeffrey Owings
98-06	National Education Longitudinal Study of 1988 (NELS:88) Base Year through Second Follow-Up: Final Methodology Report	Ralph Lee
98-09	High School Curriculum Structure: Effects on Coursetaking and Achievement in Mathematics for High School Graduates—An Examination of Data from the National Education Longitudinal Study of 1988	Jeffrey Owings
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
1999-15	Projected Postsecondary Outcomes of 1992 High School Graduates	Aurora D'Amico

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National Household Education Survey (NHES)		
95-12	Rural Education Data User's Guide	Samuel Peng
96-13	Estimation of Response Bias in the NHES:95 Adult Education Survey	Steven Kaufman
96-14	The 1995 National Household Education Survey: Reinterview Results for the Adult Education Component	Steven Kaufman
96-20	1991 National Household Education Survey (NHES:91) Questionnaires: Screener, Early Childhood Education, and Adult Education	Kathryn Chandler
96-21	1993 National Household Education Survey (NHES:93) Questionnaires: Screener, School Readiness, and School Safety and Discipline	Kathryn Chandler
96-22	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
96-29	Undercoverage Bias in Estimates of Characteristics of Adults and 0- to 2-Year-Olds in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
96-30	Comparison of Estimates from the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-02	Telephone Coverage Bias and Recorded Interviews in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-03	1991 and 1995 National Household Education Survey Questionnaires: NHES:91 Screener, NHES:91 Adult Education, NHES:95 Basic Screener, and NHES:95 Adult Education	Kathryn Chandler
97-04	Design, Data Collection, Monitoring, Interview Administration Time, and Data Editing in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-05	Unit and Item Response, Weighting, and Imputation Procedures in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-06	Unit and Item Response, Weighting, and Imputation Procedures in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-08	Design, Data Collection, Interview Timing, and Data Editing in the 1995 National Household Education Survey	Kathryn Chandler
97-19	National Household Education Survey of 1995: Adult Education Course Coding Manual	Peter Stowe
97-20	National Household Education Survey of 1995: Adult Education Course Code Merge Files User's Guide	Peter Stowe
97-25	1996 National Household Education Survey (NHES:96) Questionnaires: Screener/Household and Library, Parent and Family Involvement in Education and Civic Involvement, Youth Civic Involvement, and Adult Civic Involvement	Kathryn Chandler
97-28	Comparison of Estimates in the 1996 National Household Education Survey	Kathryn Chandler
97-34	Comparison of Estimates from the 1993 National Household Education Survey	Kathryn Chandler
97-35	Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey	Kathryn Chandler
97-38	Reinterview Results for the Parent and Youth Components of the 1996 National Household Education Survey	Kathryn Chandler
97-39	Undercoverage Bias in Estimates of Characteristics of Households and Adults in the 1996 National Household Education Survey	Kathryn Chandler
97-40	Unit and Item Response Rates, Weighting, and Imputation Procedures in the 1996 National Household Education Survey	Kathryn Chandler
98-03	Adult Education in the 1990s: A Report on the 1991 National Household Education Survey	Peter Stowe
98-10	Adult Education Participation Decisions and Barriers: Review of Conceptual Frameworks and Empirical Studies	Peter Stowe
National Longitudinal Study of the High School Class of 1972 (NLS-72)		
95-12	Rural Education Data User's Guide	Samuel Peng
National Postsecondary Student Aid Study (NPSAS)		
96-17	National Postsecondary Student Aid Study: 1996 Field Test Methodology Report	Andrew G. Malizio
National Study of Postsecondary Faculty (NSOPF)		
97-26	Strategies for Improving Accuracy of Postsecondary Faculty Lists	Linda Zimbler
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
2000-01	1999 National Study of Postsecondary Faculty (NSOPF:99) Field Test Report	Linda Zimbler

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Private School Universe Survey (PSS)		
95-16	Intersurvey Consistency in NCES Private School Surveys	Steven Kaufman
95-17	Estimates of Expenditures for Private K-12 Schools	Stephen Broughman
96-16	Strategies for Collecting Finance Data from Private Schools	Stephen Broughman
96-26	Improving the Coverage of Private Elementary-Secondary Schools	Steven Kaufman
96-27	Intersurvey Consistency in NCES Private School Surveys for 1993-94	Steven Kaufman
97-07	The Determinants of Per-Pupil Expenditures in Private Elementary and Secondary Schools: An Exploratory Analysis	Stephen Broughman
97-22	Collection of Private School Finance Data: Development of a Questionnaire	Stephen Broughman
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
Recent College Graduates (RCG)		
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
Schools and Staffing Survey (SASS)		
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
94-06	Six Papers on Teachers from the 1990-91 Schools and Staffing Survey and Other Related Surveys	Dan Kasprzyk
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
95-08	CCD Adjustment 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
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
95-18	An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey	Dan Kasprzyk
96-01	Methodological Issues in the Study of Teachers' Careers: Critical Features of a Truly Longitudinal Study	Dan Kasprzyk
96-02	Schools and Staffing Survey (SASS): 1995 Selected papers presented at the 1995 Meeting of the American Statistical Association	Dan Kasprzyk
96-05	Cognitive Research on the Teacher Listing Form for the Schools and Staffing Survey	Dan Kasprzyk
96-06	The Schools and Staffing Survey (SASS) for 1998-99: Design Recommendations to Inform Broad Education Policy	Dan Kasprzyk
96-07	Should SASS Measure Instructional Processes and Teacher Effectiveness?	Dan Kasprzyk
96-09	Making Data Relevant for Policy Discussions: Redesigning the School Administrator Questionnaire for the 1998-99 SASS	Dan Kasprzyk
96-10	1998-99 Schools and Staffing Survey: Issues Related to Survey Depth	Dan Kasprzyk
96-11	Towards an Organizational Database on America's Schools: A Proposal for the Future of SASS, with comments on School Reform, Governance, and Finance	Dan Kasprzyk
96-12	Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers: Data from the 1989 Teacher Followup Survey	Dan Kasprzyk
96-15	Nested Structures: District-Level Data in the Schools and Staffing Survey	Dan Kasprzyk
96-23	Linking Student Data to SASS: Why, When, How	Dan Kasprzyk

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96-24	National Assessments of Teacher Quality	Dan Kasprzyk
96-25	Measures of Inservice Professional Development: Suggested Items for the 1998-1999 Schools and Staffing Survey	Dan Kasprzyk
96-28	Student Learning, Teaching Quality, and Professional Development: Theoretical Linkages, Current Measurement, and Recommendations for Future Data Collection	Mary Rollefson
97-01	Selected Papers on Education Surveys: Papers Presented at the 1996 Meeting of the American Statistical Association	Dan Kasprzyk
97-07	The Determinants of Per-Pupil Expenditures in Private Elementary and Secondary Schools: An Exploratory Analysis	Stephen Broughman
97-09	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
97-10	Report of Cognitive Research on the Public and Private School Teacher Questionnaires for the Schools and Staffing Survey 1993-94 School Year	Dan Kasprzyk
97-11	International Comparisons of Inservice Professional Development	Dan Kasprzyk
97-12	Measuring School Reform: Recommendations for Future SASS Data Collection	Mary Rollefson
97-14	Optimal Choice of Periodicities for the Schools and Staffing Survey: Modeling and Analysis	Steven Kaufman
97-18	Improving the Mail Return Rates of SASS Surveys: A Review of the Literature	Steven Kaufman
97-22	Collection of Private School Finance Data: Development of a Questionnaire	Stephen Broughman
97-23	Further Cognitive Research on the Schools and Staffing Survey (SASS) Teacher Listing Form	Dan Kasprzyk
97-41	Selected Papers on the Schools and Staffing Survey: Papers Presented at the 1997 Meeting of the American Statistical Association	Steve Kaufman
97-42	Improving the Measurement of Staffing Resources at the School Level: The Development of Recommendations for NCES for the Schools and Staffing Survey (SASS)	Mary Rollefson
97-44	Development of a SASS 1993-94 School-Level Student Achievement Subfile: Using State Assessments and State NAEP, Feasibility Study	Michael Ross
98-01	Collection of Public School Expenditure Data: Development of a Questionnaire	Stephen Broughman
98-02	Response Variance in the 1993-94 Schools and Staffing Survey: A Reinterview Report	Steven Kaufman
98-04	Geographic Variations in Public Schools' Costs	William J. Fowler, Jr.
98-05	SASS Documentation: 1993-94 SASS Student Sampling Problems; Solutions for Determining the Numerators for the SASS Private School (3B) Second-Stage Factors	Steven Kaufman
98-08	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
98-12	A Bootstrap Variance Estimator for Systematic PPS Sampling	Steven Kaufman
98-13	Response Variance in the 1994-95 Teacher Follow-up Survey	Steven Kaufman
98-14	Variance Estimation of Imputed Survey Data	Steven Kaufman
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
98-16	A Feasibility Study of Longitudinal Design for Schools and Staffing Survey	Stephen Broughman
1999-02	Tracking Secondary Use of the Schools and Staffing Survey Data: Preliminary Results	Dan Kasprzyk
1999-04	Measuring Teacher Qualifications	Dan Kasprzyk
1999-07	Collection of Resource and Expenditure Data on the Schools and Staffing Survey	Stephen Broughman
1999-08	Measuring Classroom Instructional Processes: Using Survey and Case Study Fieldtest Results to Improve Item Construction	Dan Kasprzyk
1999-10	What Users Say About Schools and Staffing Survey Publications	Dan Kasprzyk
1999-12	1993-94 Schools and Staffing Survey: Data File User's Manual, Volume III: Public-Use Codebook	Kerry Gruber
1999-13	1993-94 Schools and Staffing Survey: Data File User's Manual, Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebook	Kerry Gruber
1999-14	1994-95 Teacher Followup Survey: Data File User's Manual, Restricted-Use Codebook	Kerry Gruber
1999-17	Secondary Use of the Schools and Staffing Survey Data	Susan Wiley

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Adult education		
96-14	The 1995 National Household Education Survey: Reinterview Results for the Adult Education Component	Steven Kaufman
96-20	1991 National Household Education Survey (NHES:91) Questionnaires: Screener, Early Childhood Education, and Adult Education	Kathryn Chandler
96-22	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
98-03	Adult Education in the 1990s: A Report on the 1991 National Household Education Survey	Peter Stowe
98-10	Adult Education Participation Decisions and Barriers: Review of Conceptual Frameworks and Empirical Studies	Peter Stowe
1999-11	Data Sources on Lifelong Learning Available from the National Center for Education Statistics	Lisa Hudson
American Indian – education		
1999-13	1993-94 Schools and Staffing Survey: Data File User's Manual, Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebook	Kerry Gruber
Assessment/achievement		
95-12	Rural Education Data User's Guide	Samuel Peng
95-13	Assessing Students with Disabilities and Limited English Proficiency	James Houser
97-29	Can State Assessment Data be Used to Reduce State NAEP Sample Sizes?	Larry Ogle
97-30	ACT's NAEP Redesign Project: Assessment Design is the Key to Useful and Stable Assessment Results	Larry Ogle
97-31	NAEP Reconfigured: An Integrated Redesign of the National Assessment of Educational Progress	Larry Ogle
97-32	Innovative Solutions to Intractable Large Scale Assessment (Problem 2: Background Questions)	Larry Ogle
97-37	Optimal Rating Procedures and Methodology for NAEP Open-ended Items	Larry Ogle
97-44	Development of a SASS 1993-94 School-Level Student Achievement Subfile: Using State Assessments and State NAEP, Feasibility Study	Michael Ross
98-09	High School Curriculum Structure: Effects on Coursetaking and Achievement in Mathematics for High School Graduates—An Examination of Data from the National Education Longitudinal Study of 1988	Jeffrey Owings
Beginning students in postsecondary education		
98-11	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
Civic participation		
97-25	1996 National Household Education Survey (NHES:96) Questionnaires: Screener/Household and Library, Parent and Family Involvement in Education and Civic Involvement, Youth Civic Involvement, and Adult Civic Involvement	Kathryn Chandler
Climate of schools		
95-14	Empirical Evaluation of Social, Psychological, & Educational Construct Variables Used in NCES Surveys	Samuel Peng
Cost of education indices		
94-05	Cost-of-Education Differentials Across the States	William J. Fowler, Jr.
Course-taking		
95-12	Rural Education Data User's Guide	Samuel Peng
98-09	High School Curriculum Structure: Effects on Coursetaking and Achievement in Mathematics for High School Graduates—An Examination of Data from the National Education Longitudinal Study of 1988	Jeffrey Owings

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1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
Crime		
97-09	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
Curriculum		
95-11	Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work	Sharon Bobbitt & John Ralph
98-09	High School Curriculum Structure: Effects on Coursetaking and Achievement in Mathematics for High School Graduates—An Examination of Data from the National Education Longitudinal Study of 1988	Jeffrey Owings
Customer service		
1999-10	What Users Say About Schools and Staffing Survey Publications	Dan Kasprzyk
2000-02	Coordinating NCES Surveys: Options, Issues, Challenges, and Next Steps	Valena Plisko
Data quality		
97-13	Improving Data Quality in NCES: Database-to-Report Process	Susan Ahmed
Dropout rates, high school		
95-07	National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts	Jeffrey Owings
Early childhood education		
96-20	1991 National Household Education Survey (NHES:91) Questionnaires: Screener, Early Childhood Education, and Adult Education	Kathryn Chandler
96-22	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
97-24	Formulating a Design for the ECLS: A Review of Longitudinal Studies	Jerry West
97-36	Measuring the Quality of Program Environments in Head Start and Other Early Childhood Programs: A Review and Recommendations for Future Research	Jerry West
1999-01	A Birth Cohort Study: Conceptual and Design Considerations and Rationale	Jerry West
Educational attainment		
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98-11	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
Faculty – higher education		
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2000-01	1999 National Study of Postsecondary Faculty (NSOPF:99) Field Test Report	Linda Zimbler
Finance – elementary and secondary schools		
94-05	Cost-of-Education Differentials Across the States	William J. Fowler, Jr.
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98-01	Collection of Public School Expenditure Data: Development of a Questionnaire	Stephen Broughman
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1999-16	Measuring Resources in Education: From Accounting to the Resource Cost Model Approach	William J. Fowler, Jr.

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Finance – postsecondary		
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Finance – private schools		
95-17	Estimates of Expenditures for Private K-12 Schools	Stephen Broughman
96-16	Strategies for Collecting Finance Data from Private Schools	Stephen Broughman
97-07	The Determinants of Per-Pupil Expenditures in Private Elementary and Secondary Schools: An Exploratory Analysis	Stephen Broughman
97-22	Collection of Private School Finance Data: Development of a Questionnaire	Stephen Broughman
1999-07	Collection of Resource and Expenditure Data on the Schools and Staffing Survey	Stephen Broughman
Geography		
98-04	Geographic Variations in Public Schools' Costs	William J. Fowler, Jr.
Inflation		
97-43	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
Institution Data		
2000-01	1999 National Study of Postsecondary Faculty (NSOPF:99) Field Test Report	Linda Zimbler
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95-11	Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work	Sharon Bobbitt & John Ralph
1999-08	Measuring Classroom Instructional Processes: Using Survey and Case Study Field Test Results to Improve Item Construction	Dan Kasprzyk
International comparisons		
97-11	International Comparisons of Inservice Professional Development	Dan Kasprzyk
97-16	International Education Expenditure Comparability Study: Final Report, Volume I	Shelley Burns
97-17	International Education Expenditure Comparability Study: Final Report, Volume II, Quantitative Analysis of Expenditure Comparability	Shelley Burns
Libraries		
94-07	Data Comparability and Public Policy: New Interest in Public Library Data Papers Presented at Meetings of the American Statistical Association	Carrol Kindel
97-25	1996 National Household Education Survey (NHES:96) Questionnaires: Screener/Household and Library, Parent and Family Involvement in Education and Civic Involvement, Youth Civic Involvement, and Adult Civic Involvement	Kathryn Chandler
Limited English Proficiency		
95-13	Assessing Students with Disabilities and Limited English Proficiency	James Houser
Literacy of adults		
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1999-11	Data Sources on Lifelong Learning Available from the National Center for Education Statistics	Lisa Hudson
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1999-08	Measuring Classroom Instructional Processes: Using Survey and Case Study Field Test Results to Improve Item Construction	Dan Kasprzyk
Parental involvement in education		
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1999-01	A Birth Cohort Study: Conceptual and Design Considerations and Rationale	Jerry West
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Postsecondary education		
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Postsecondary education – persistence and attainment		
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1999-15	Projected Postsecondary Outcomes of 1992 High School Graduates	Aurora D'Amico
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Private schools		
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Public school finance		
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Reform, educational		
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Response rates		
98-02	Response Variance in the 1993-94 Schools and Staffing Survey: A Reinterview Report	Steven Kaufman
School districts, public		
98-07	Decennial Census School District Project Planning Report	Tai Phan
1999-03	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
School districts, public – demographics of		
96-04	Census Mapping Project/School District Data Book	Tai Phan
Schools		
97-42	Improving the Measurement of Staffing Resources at the School Level: The Development of Recommendations for NCES for the Schools and Staffing Survey (SASS)	Mary Rollefson
98-08	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
1999-03	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
Schools – safety and discipline		
97-09	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
Staff		
97-42	Improving the Measurement of Staffing Resources at the School Level: The Development of Recommendations for NCES for the Schools and Staffing Survey (SASS)	Mary Rollefson
98-08	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
Staff – higher education institutions		
97-26	Strategies for Improving Accuracy of Postsecondary Faculty Lists	Linda Zimbler
State		
1999-03	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
Statistical methodology		
97-21	Statistics for Policymakers or Everything You Wanted to Know About Statistics But Thought You Could Never Understand	Susan Ahmed
Students with disabilities		
95-13	Assessing Students with Disabilities and Limited English Proficiency	James Houser
Survey methodology		
96-17	National Postsecondary Student Aid Study: 1996 Field Test Methodology Report	Andrew G. Malizio
97-15	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
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98-06	National Education Longitudinal Study of 1988 (NELS:88) Base Year through Second Follow-Up: Final Methodology Report	Ralph Lee
98-11	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
98-16	A Feasibility Study of Longitudinal Design for Schools and Staffing Survey	Stephen Broughman
1999-07	Collection of Resource and Expenditure Data on the Schools and Staffing Survey	Stephen Broughman
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2000-01	1999 National Study of Postsecondary Faculty (NSOPF:99) Field Test Report	Linda Zimbler
2000-02	Coordinating NCES Surveys: Options, Issues, Challenges, and Next Steps	Valena Plisko
Teachers		
98-13	Response Variance in the 1994-95 Teacher Follow-up Survey	Steven Kaufman
1999-14	1994-95 Teacher Followup Survey: Data File User's Manual, Restricted-Use Codebook	Kerry Gruber

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Teachers – instructional practices of		
98-08	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
Teachers – opinions regarding safety		
98-08	The Redesign of the Schools and Staffing Survey for 1999-2000: A Position Paper	Dan Kasprzyk
Teachers – performance evaluations		
1999-04	Measuring Teacher Qualifications	Dan Kasprzyk
Teachers – qualifications of		
1999-04	Measuring Teacher Qualifications	Dan Kasprzyk
Teachers – salaries of		
94-05	Cost-of-Education Differentials Across the States	William J. Fowler, Jr.
Violence		
97-09	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
Vocational education		
95-12	Rural Education Data User's Guide	Samuel Peng
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson