

STANDARDS FOR STATISTICAL SURVEYS IN THE FEDERAL GOVERNMENT:
PRACTICES IN THE CENTER FOR EDUCATION STATISTICS

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Abstract

The National Center for Education Statistics (NCES) published written standards in March 1987. Since that time, operations at the Center and relations with contracting firms which do surveys for NCES have changed. Methods for conducting surveys have improved, documentation of procedures has become more detailed, and analyses have become more rigorous. The practice of doing a survey has become more refined, protecting the respondent to NCES Surveys and assisting the user or consumer of the federal survey.

1.0 Introduction

The Standards program in NCES started in 1985 as a result of recommendations from the Center's Advisory Council on Education Statistics (ACES). Standards materials developed by NCES staff to guide data collection and reporting were assembled. In addition, a search was made in journals of professional organizations and with other Federal agencies to find models of standards, both in terms of content and in the range of topics covered. Two documents stood out: The Energy Information Administration Standards Manual and an article in the Journal of the American Statistical Association entitled "Standards for Discussion and Presentation of Errors in Survey and Census Data", which was a revision of Technical Paper 32 from the Bureau of the Census.

Discussions were held by Center staff with principals from other statistical agencies, members of the statistical community interested in the topic, and ultimately with members of NCES and with members of the National Academy of Sciences (NAS) Panel to evaluate the National Center for Education Statistics. The NAS Panel was convened to review the work of the Center and to make recommendations regarding improvement of its operations. One specific recommendation was:

The panel recommends that the Center develop, publish, disseminate, and implement standards to guide the conduct of all phases of its work, from development of objectives through collection, follow-up and processing and including the preparation, review, analysis, and publication of results.

The Standards are the culmination of the reviews and discussions of Center staff with outside experts and advocates. The number of standards has varied, as has the content of each during the developmental period. This first publication is the end product of a process of distilling the essential issues facing the Center, and determining how the Center can best meet its objectives in a professional manner. First drafts for many of the standards were reviewed by staff concerned

with statistical data analysis or processing issues. These drafts were circulated to the entire Center staff, and then meetings were held with each of the Divisions to discuss changes to the standards and to get the entire staff recommendations on additional standards needed. This process served both to introduce staff to the standards and to get the entire staff involved in the production of the standards.

2.0 Where The Standards Have Been Effective

The Standards were intended for NCES staff and contractors to guide them in their data collection, analysis, and dissemination activities. They present a clear statement for contractors and users of NCES data regarding how the data should be collected for NCES surveys, and the limits and acceptable applications for the use of NCES data. With the adoption of written standards, NCES products were to become more uniform in quality.

And in fact, this has been the case. In the review of survey output and, in particular, publications, the Standards have served both the reviewer in knowing what was acceptable and what was not, and the author, in serving as a shield for the author who may be asked to develop an analysis that is only marginally supported by the data available. The Standards provide benchmarks for what can and cannot be done with NCES data, and provide a basis for developing inferences from the statistics collected.

The Standards have also been important to NCES in codifying what is expected in contract work, and important to contractors in knowing what is expected in a job. The Standards even offer assistance to contractors bidding on an RFP who want to know how to cost out a job. The Standards also have helped with relations with the rest of the Department of Education, in that there is a clear message in the Standards as to the limitations of the data we have, and the limits on the data we can import from other programs.

3.0 Sectors Covered by the Standards

There are five sectors covered by the Standards:

- o Planning
- o RFP Development/Contract Monitoring
- o Implementation/Data Collection/Processing
- o Release/Publication of Data
- o Sampling and Non-Sampling Error

3.1 Planning

Starting in the planning stage, the Standards call for the development of analysis plans and clear statements about what is to be studied and how. In addition, the Standards call for simultaneous and parallel development of evaluation plans for each survey or study.

3.2 RFP Development/Contract Monitoring

The Standards call for a particular format for RFP's developed by the Center which is comprehensive, ensuring that contractors know what is expected in the development of a proposal, and also ensuring that NCES is given information on all aspects of the survey to be conducted (i.e., no surprises at the end of the study). The Standards also call for complete documentation of what is done within the survey, while the survey is going on (not at the end when details are forgotten) and for maintenance of contract files which can be used by new staff coming into the Center and taking on responsibility for projects.

3.3 Implementation/Data Collection/Processing

This set of Standards attempts to develop the process of conducting the survey. It includes pretesting of the questionnaires and also of the survey process, and development of education or assessment tests according to accepted testing theory. There are standards for minimization of survey nonresponse and benchmarks for data collection and analysis (minimum acceptable response rates and minimum sample sizes needed). There are also more prosaic Standards on codes, abbreviations and acronyms to be used, methods for rounding, and methods for creating and cataloging data tapes, both for internal use and for sale as public use tapes.

3.4 Release/Publication of Data

Release and publication of data from a survey cannot occur until survey documentation is complete. There are also Standards for how the technical aspects of a survey should be presented in Data Releases like publications. There are standards on how the Center is to maintain confidentiality on all its data, how

survey results should be disseminated, and the timing of releases of data and data tapes, to ensure that data becomes available from surveys almost immediately.

3.5 Sampling and Non-Sampling Error

Finally, there are standards on the treatment of missing data, including methods for weighting and imputation. And there are standards on the calculation of sampling errors and how they should be presented in publication.

4.0 Where We Are Now

There has been a definite change in the Center and how it operates, both internally and in the way we deal with our peers and the outside world. Internally, a dialogue has started on methods and the philosophy of the survey business. Externally, in discussions with interest groups and research organizations, we are able to say that our publications and releases have gone through a tight and thorough review. Invoking the Standards stops even the most ardent education activist from insisting on a use of the data that cannot be supported.

5.0 Where We Go From Here

Our next steps are to publish a revised set of Standards. The initial set has been in place for a year, and we have learned a lot. In addition, the Standards have spawned a second document: "Conventions", which are examples of different ways data are to be treated and presented. These examples are both examples of the ways things might be done well, and examples of things done badly. Conventions serves as the realizations of the use of the Standards, and also show the Standards to be flexible, in that there might be more than one way to collect and present data.