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2004 National Study of Postsecondary Faculty (NSOPF:04) Field Test Methodology Report

October 2004

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Executive Summary

The 2004 National Study of Postsecondary Faculty (NSOPF:04), conducted by RTI International* (RTI) and sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES), is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and part-time postsecondary faculty and instructional staff at public and private not-for-profit 2- and 4-year institutions in the United States. Conducted for the first time in 1988 and again in 1993 and 1999, NSOPF is a major source of information about postsecondary faculty in the United States.

For the first time, NSOPF:04 is being conducted as a component study of the 2004 National Study of Faculty and Students (NSoFaS:04). The student component—the 2004 National Postsecondary Student Aid Study (NPSAS:04)—is a nationally representative study of student financial aid. Historically, there has been considerable overlap in the institutions selected for participation in NSOPF and NPSAS; therefore, institution sampling and contacting activities for both studies were coordinated to help minimize response burden on institutions and to improve data collection efficiency.

This report describes the methodology and findings of the NSOPF:04 field test that took place during the 2002–03 academic year. The NSOPF:04 field test was used to plan, implement, and evaluate methodological procedures, instruments, and systems proposed for use in the full-scale study scheduled for the 2003–04 academic year. The field test was particularly important in this cycle of NSOPF, because of several changes from prior NSOPF data collections. These included

- the combination of NSOPF and NPSAS into NSoFaS:04, which had important implications for the NSOPF:04 institution sample design and institution contacting procedures;
- eliminating the paper self-administered survey mode of response;
- using integrated web/computer-assisted telephone interviewing (CATI) instruments;
- shortening the faculty questionnaire; and
- implementing measures to shorten the data collection period, such as early institution contacting and use of incentives for early response.

This field test methodology report is designed to summarize the findings with regard to NSOPF for each of these changes. The methodology and findings of the NPSAS:04 field test are provided in a separate report.

* RTI International is a trade name of Research Triangle Institute.

Sample Design

The NSOFP:04 field test was based on a sample of faculty and instructional staff in public and private not-for-profit 2- and 4-year postsecondary institutions throughout the United States. A two-stage sampling methodology was used. In the first stage, 150 institutions were sampled from the complement of the full-scale sample to ensure that no institution would be included in both the field test and full-scale studies. While list collection was attempted and sampling processing was completed for all institutions sampled in the field test, to accommodate the short schedule for the field test, the 150 institutions were subsampled to 75 institutions for the second-stage sampling of faculty and instructional staff.

The faculty sample included 1,224 part- and full-time faculty and instructional staff employed by postsecondary institutions on November 1, 2002. Of these, 27 were determined to be ineligible for the study, resulting in 1,197 eligible sample members.

Instrumentation

The NSOPF:04 institution questionnaire was designed to be self-administered via the Internet. The instrument was divided into major sections that collected information on the number of faculty and instructional staff employed at the target institution, the policies and practices that affected full-time faculty and instructional staff, the policies and practices regarding part-time faculty and instructional staff, and the percentage of undergraduate instruction assigned to various instructional personnel.

The NSOPF:04 faculty instrument was designed as a web-based instrument to be used both for self-administration via the Internet and by computer-assisted telephone interviews (CATI) for nonresponse follow-up. In addition, a study website was developed for access to the self-administered questionnaire and to provide sample members with additional information about the study.

The instrument was designed to accommodate the mixed-mode data collection approach and to ensure the collection of high-quality data. Design considerations included appropriate question wording for both self-administered and telephone interviews, the provision of extensive help text to assist self-administered respondents, and pop-up boxes indicating out-of-range values. The instrument consisted of the following eight sections grouped by topic:

- Employment during the 2003 Fall term (including academic rank, tenure status, and field of teaching);
- Academic and professional background (including highest degree earned and employment history);
- Institutional responsibilities and workload (including instructional activities and other work responsibilities performed in a typical week);
- Scholarly activities (including productivity, funding of scholarly activities, and field of research);

- Job satisfaction and retirement plans;
- Monetary compensation (including income from the institution and other sources, structure of the employment contract, and household income);
- Sociodemographic information (including gender, race, date of birth, marital status, number of dependent children, and citizenship); and
- Opinions about working conditions at the institution.

Institution Contacting

Once institutions were sampled, attempts were made to contact an appointed representative of the institution to verify institutional eligibility, solicit participation, and request the appointment of an Institutional Coordinator to oversee data collection within the institution. Institutional Coordinators were asked to provide electronic lists of all eligible faculty and instructional staff employed on November 1, 2002, and to complete the institution questionnaire. By June 2003, of the 149 eligible institutions sampled for the field test, 134 (90 percent) provided faculty lists and 114 (77 percent) completed the institution questionnaire.

Help Desk and Interviewer Training

Field test training programs were developed for Help Desk operators who would respond to questions of sample members attempting to complete the web-based survey and for telephone interviewers who would conduct the nonresponse follow-up. Help Desk operators received specific training in “frequently asked questions” regarding the instrument and technical issues related to completion of the self-administered questionnaire via the Internet. In addition, Help Desk operators received the same training as telephone interviewers because they were expected to complete the instrument over the telephone if requested by a caller. The telephone interviewer training focused on techniques for successfully locating and interviewing sample members, and covered such topics as administrative procedures required for case management, quality control of interactions with sample members and other contacts, the purpose of NSOPF:04 and the uses of the NSOPF data, and the organization and operation of the web-based faculty instrument to be used in data collection.

Faculty Locating and Survey Completion

The NSOPF:04 field test data collection design involved locating sample members, providing an opportunity for them to complete the self-administered questionnaire via the Internet, following up with web nonrespondents after 3 weeks, and attempting to conduct a telephone interview with them.

Upon receipt of faculty lists, batch locating activities were employed to update addresses and telephone numbers. Sources for this task included the U.S. Postal Service’s National Change of Address system, Lexis-Nexis, and Telematch. Faculty and instructional staff were then mailed a lead letter, information pamphlet, and study ID and password for completing the questionnaire via the Internet. Telephone contact began for self-administered web

nonrespondents 3 weeks after the initial mailing. Periodic reminder letters and e-mail messages were sent to nonrespondents to encourage their participation. When all telephone numbers for a case were exhausted, the case underwent intensive tracing. Cases for which further contacting information was obtained were sent back for contact by telephone interviewers; those for whom no further contacting information could be obtained were finalized as unlocatable.

Of the 1,197 eligible sample members, 914 (76 percent) completed the faculty interview during a 5-month field period from late January to late June of 2003. Out of the 914 completed surveys, a total of 559 (61 percent) respondents completed the self-administered web survey, and 355 (39 percent) were interviewed by telephone. The average time to complete the survey was about 42 minutes.

Incentive Experiment

The field test design included an experiment to determine the use of incentives. The experimental design consisted of three randomly assigned early-response incentive groups who were offered \$0, \$20, or \$30 to complete the self-administered questionnaire over the Internet within 3 weeks of the initial mailing and two nonresponse incentive groups of \$0 and \$30 for those who had not completed the survey by a certain date during data collection. The early-response incentive yielded 31 and 34 percent response rates for the \$20 and \$30 incentives, respectively, compared with a 16 percent response rate for the control group. The nonresponse incentive yielded a 47 percent response rate for those offered \$30 and a 34 percent response rate for the control group. The differences between the treatment and the control groups were statistically significant for both phases of the experiment; however, the apparent difference in amounts (\$20 versus \$30) for the early-response incentive period, while in the expected direction, was not statistically significant.

Evaluation of Operations and Data Quality

As noted above, the NSOPF:04 field test was used to plan, implement, and evaluate methodological procedures, instruments, and systems proposed for use in the full-scale study; therefore, assessments of operations, procedures, and data quality were critical at this stage. Evaluations of operations and procedures focused on the joint institution contacting endeavor, the timeline for data collection from both institutions (faculty lists and institution questionnaires) and faculty (CATI and self-administered interviews), tracing and locating procedures, refusal conversion efforts, the effectiveness of incentives, and the length of the faculty interview.

Results of the data quality evaluations included the following:

- IPEDS faculty counts were often smaller than faculty counts obtained from the institutional questionnaire or tallied faculty lists, due to definitional differences. Institution questionnaire and tallied faculty list counts were relatively more consistent with each other.
- Item nonresponse was below 10 percent for 81 of the 83 items in the institution questionnaire and for 239 out of the 250 items in the faculty questionnaire.
- The temporal stability of a subset of items in the faculty interview was evaluated using a reinterview. Of the 26 items evaluated, 15 had percent agreement over 90

percent, 6 had percent agreement between 80 and 90 percent, and 5 had percent agreement less than 80 percent. There were no statistically significant modal differences in percent agreement for any of these items.

- Resolution screens proved effective in reducing the amount of inconsistent data collected in the faculty instrument.
- Help text access rates were greater than 10 percent for 9 of the 113 forms (screens) in the faculty instrument. These forms were reviewed for problems with wording or lack of on-screen information.
- A recoding of teaching, research, and highest degree coding fields showed 69 percent were coded correctly, 21 percent incorrectly and the remaining 10 percent of strings were too vague to code. There were no significant modal differences in the coding results.

Data Files

Data from field tests such as NSOPF:04 are not released to the public; however, all data file processing procedures were tested rigorously in preparation for the full-scale effort. Procedures tested included a review of instrument editing systems, range and consistency checks and data editing. Detailed documentation was also developed to describe question text, response options, and recoding.

Plans for the NSOPF:04 Full-Scale Study

The final chapter of this report summarizes the changes suggested from the NSOPF:04 field test. General changes for efficiency and clarity have been suggested for aspects of the study such as early institution contacting, instrument programming, tracing and locating, and the CATI front-end system. More substantial changes planned for the NSOPF:04 full-scale study include the following:

- Offering incentives to all sample members during the web early-response period and during the CATI nonresponse period at the end of data collection.
- Modifying the institution instrument to make the part-time faculty and instructional staff questions parallel with the full-time faculty and instructional staff questions.
- Shortening the faculty instrument to 30 minutes through the elimination of items, refinement of question wording, targeting of help text, and development of an autocoding routine for Classification of Instructional Programs (CIP) coding.
- Beginning faculty data collection as soon as possible in January of 2004, and making additional attempts to obtain e-mail addresses of faculty.

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Working Paper 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.

The *Working Paper Series* was initiated to promote the sharing of the valuable work experience and knowledge reflected in these preliminary reports. These reports are viewed as works in progress, and have not undergone a rigorous review for consistency with NCES Statistical Standards prior to inclusion in the Working Paper Series.

Copies of Working Papers can be downloaded as pdf files from the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch/>).

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Foreword

This report describes the methods and procedures used for the field test data collection effort of the 2004 National Study of Postsecondary Faculty (NSOPF:04). NSOPF:04 serves a continuing need for data on faculty and instructional staff, all of whom directly affect the quality of education in postsecondary institutions.

We hope that the information provided here and in the full-scale methodology report will be useful to a wide range of interested readers and that the results reported in the forthcoming full-scale descriptive summary report will encourage others to use the NSOPF:04 data. We welcome recommendations for improving the format, content, and approach, so that future methodology reports will be more informative and useful.

C. Dennis Carroll
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Most of all, we are indebted to the many Chief Administrators, Institutional Coordinators, institution respondents, and faculty and instructional staff members who participated in the NSOPF:04 field test. Their willingness to take the time to share information made this study a success.

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Chapter 1

Overview of Field Test

This document describes the study design, procedures, and outcomes for the field test of the 2004 National Study of Postsecondary Faculty (NSOPF:04). The field test and subsequent full-scale study are being conducted for the National Center for Education Statistics (NCES) of the U.S. Department of Education, Washington, DC, as authorized by Title I, Section 153, of the Education Sciences Reform Act of 2002 [PL 107-279]. NSOPF:04 is being conducted as a component study of the 2004 National Study of Faculty and Students (NSoFaS:04) under contract by RTI International,¹ with the assistance of MPR Associates, Inc. Field test results for the student component, the 2004 National Postsecondary Student Aid Study (NPSAS:04), are provided in a separate methodology report (Charleston et al. 2004).

This introductory chapter provides an overview of NSOPF, including a description of the study, the types of policy-relevant issues addressed, the purpose of the field test, the changes to the study from previous cycles, the data and reports generated from the study, and the schedule of field test and full-scale data collection activities.

1.1 Background and Purpose of NSOPF

NSOPF is a comprehensive nationwide study of the characteristics, workload, and career paths of postsecondary faculty and instructional staff.² The study is based on a nationally representative sample of all full- and part-time faculty and instructional staff at public and private not-for-profit 2- and 4-year institutions in the United States. The NSOPF:04 full-scale sample will consist of 35,000 faculty and instructional staff selected from about 1,100 sampled institutions in the 50 states and the District of Columbia.

NSOPF:04 will be the fourth cycle of the National Study of Postsecondary Faculty. Previous studies were conducted in 1988, 1993, and 1999 (called NSOPF:88, NSOPF:93, and NSOPF:99, respectively). They provided national profiles of faculty and instructional staff in postsecondary institutions; national benchmarks for faculty productivity and workload; and information on institutional policies and practices that affect faculty. The fourth cycle of the National Study of Postsecondary Faculty, NSOPF:04, will expand the information about faculty and instructional staff in two ways: (1) it will allow for comparisons to be made over an extended period of time, and (2) it will examine emerging issues concerning faculty such as changes related to increased use of the Internet and distance education.

NSOPF:04 is designed to address a variety of policy-relevant issues concerning faculty, instructional staff, and postsecondary institutions. The study includes faculty and institution

¹ RTI International is a trade name of Research Triangle Institute.

² References to "faculty" in this report include instructional staff and others (e.g., administrators) with faculty status (who may or may not have instructional duties).

questionnaires covering general policies concerning faculty. Information obtained from these two sources can answer important questions about postsecondary education, such as the following:

- How many full- and part-time faculty and instructional staff are there?
- What are their background characteristics?
- What are their workloads and how is their time allocated between classroom instruction and other activities?
- What are the current teaching practices and uses of technology among postsecondary faculty and instructional staff?
- How satisfied are they with current working conditions and institutional policies?
- How are faculty and instructional staff compensated by their institutions? How important are other sources of income?
- What are the career and retirement plans of faculty and instructional staff?
- What retirement packages are available to faculty and instructional staff?
- Have institutions changed their policies on granting tenure to faculty members? Are changes anticipated in the future?

The following are examples of results from the last cycle (NSOPF:99) (Zimbler 2001):

- There were about 1.1 million faculty and instructional staff in 2- and 4-year postsecondary institutions in the Fall of 1998. Approximately 57 percent of faculty were employed full time and 43 percent were employed part time by their postsecondary institutions.
- Across all postsecondary institutions, Whites accounted for 84 percent of full-time faculty and instructional staff, Asians comprised about 6 percent, Blacks or African Americans about 5 percent, Hispanics/Latinos about 3 percent, and American Indians/Alaska Natives about 1 percent in the Fall of 1998.
- Sixty-four percent of full-time faculty and instructional staff and 52 percent of part-time faculty and instructional staff in the Fall of 1998 were men.
- Full-time instructional faculty and staff spent an average of 11 hours a week in the classroom in the Fall of 1998. The average number of hours spent teaching classes ranged from 7 hours at private research institutions to 17 hours at public 2-year institutions.
- The average base salary for full-time instructional faculty and staff during the 1998 calendar year was approximately \$57,000. The average total income—base salary, other institutional income, consulting, and other outside income—was \$69,000. For part-time instructional faculty and staff, the average base salary was \$12,000, and the average total income was \$46,000, including income from other (perhaps full-time) employment.

1.2 Purpose and Major Questions of the Field Test

The major purposes of the NSOPF:04 field test were to plan, implement, and evaluate operational and methodological procedures, instruments, and systems proposed for use in the full-scale study. The field test was particularly important in this cycle of NSOPF, because of several changes from prior years. Perhaps the most important change was the decision of NCES to combine two major studies (NSOPF and NPSAS), previously conducted independently, into one overarching contract, the 2004 National Study of Faculty and Students (NSoFaS:04). The decision was made to combine these studies because historically there has been considerable overlap in the institutions selected for participation in NSOPF and NPSAS. Given that each of these studies is conducted periodically, NCES decided that they should be combined under one contract in order to minimize response burden on institutions and to realize data collection efficiencies. However, the NSOPF and NPSAS studies still maintain separate identities and the purpose of this report is to summarize only the NSOPF:04 field test.

The combination of NSOPF and NPSAS into NSoFaS:04 has important implications for the NSOPF:04 institution sample design and institution contacting procedures stemming from the fact that all NSOPF:04 institutions were also NPSAS institutions. This combination resulted in a somewhat larger sample of institutions for the full-scale study than previous NSOPF cycles (1,080 compared to 960 in 1999), and in the need to balance the design requirements of both studies in all institution-related study procedures. Other changes for NSOPF:04 included: eliminating the paper survey mode of response; using integrated web/computer-assisted telephone interviewing (CATI) instruments; shortening the faculty questionnaire; and implementing measures to shorten the data collection period, such as early institution contacting and use of incentives for early response. The major questions addressed in the field test correspond to these changes and are listed below.

- How was the sample design for NSOPF impacted by being combined with NPSAS? All NSOPF:04 sampled institutions are also NPSAS institutions (NPSAS has additional sampled institutions that are NPSAS-only institutions).
- What was the effect of combining institution contacting for NSOPF and NPSAS on NSOPF list collection? The target was to obtain faculty lists from 90 percent of sampled institutions within the timeframe.
- How did elimination of the paper mode option for NSOPF affect response rates? A self-administered paper survey was the major mode of response in previous cycles of NSOPF. For example, in NSOPF:99, 50 percent of faculty responses were completed using a self-administered paper form, 35 percent using a web survey, and 15 percent using an abbreviated CATI instrument. The target for NSOPF:04 was to have 50 percent completed using web mode and 50 percent CATI mode.
- How well did it work to use a single web-based instrument for both web self-administration and CATI? What would be the quality of the data and differences by mode of response?

- What was the timing for the survey in each mode (web and CATI)? The goal was to shorten the length of the faculty instrument from the 55 minutes in NSOPF:99 to 30 minutes for NSOPF:04. Because of the length of the NSOPF:99 survey, the CATI version was abbreviated; however, for NSOPF:04 the web and CATI instruments were designed to be identical.
- What role did incentives play in fostering early response before outgoing CATI calls began? What role could they play in nonresponse follow-up and refusal conversion?
- How is the faculty response rate affected by data collection strategies for a shortened field period?

The procedure of comprehensive field testing has been used throughout the NSOPF series to enhance and advance the methodologies used in these surveys. The evaluations and results of the NSOPF:04 field test, described in this report, will inform the design and method of the NSOPF:04 full-scale study.

1.3 Products and Schedule of NSOPF:04

Data from the full-scale study will be used by researchers and policymakers to examine a wide range of topics, including who faculty are, what they do, and whether and how they are changing over time. NSOPF provides data on each of these topics. Electronically documented, restricted access data files (with associated Electronic Codebooks) as well as NCES's Data Analysis Systems (DASs) and DAS Online (DASOL) for public release will be constructed from the full-scale data and distributed to a variety of organizations and researchers.

The following types of reports are products of NSOPF:04: (1) a full-scale methodology report, providing details of sample design and selection procedures, data collection procedures, weighting methodologies, estimation procedures and design effects, and the results of nonresponse analyses; and (2) a number of descriptive statistical reports. Recent reports have been published on topics such as undergraduate teaching, teaching with technology, distance education instruction, gender and racial/ethnic composition of the faculty population, tenure status, work activities and compensation, and characteristics of part-time faculty. NSOPF publications can be accessed electronically through NCES's website at <http://nces.ed.gov/pubsearch/getpubcats.asp?sid=011>. Special tabulations are available on a limited basis upon request, and study findings are presented at conferences.

Table 1.1 summarizes the data collection schedule for the field test. It also includes the proposed data collection schedule for the full-scale study in 2003–04.

The remainder of this report is organized as follows. Chapter 2 presents an overview of the field test design and implementation. Data collection outcomes and the results of the incentive experiment are reported in chapter 3. Chapter 4 presents evaluations of the quality of data collected from institutions and faculty. Major changes planned for the full-scale study, based on field test findings, are summarized in chapter 5. Materials used during the field test study are provided as appendices to the report and cited in the text where appropriate.

Table 1.1 Schedule of major NSOPF:04 data collection activities

Activity	Start date¹	End date²
Field test		
Select institution sample	5/22/02	9/10/02
Make mail and phone contact with Chief Administrator ³	9/25/02	6/30/03
Make mail and phone contact with Institutional Coordinator ³	10/08/02	6/30/03
Obtain lists for faculty sampling ⁴	10/01/02	6/30/03
Implement institution questionnaire	10/01/02	6/30/03
Select faculty samples	11/15/02	1/30/03
Send mail and e-mail to faculty	1/30/03	6/15/03
Implement faculty web survey data collection	1/30/03	6/30/03
Implement faculty CATI interviewing	2/24/03	6/30/03
Full-scale study⁵		
Select institution sample	5/22/02	8/25/02
Make mail and phone contact with Chief Administrator	3/10/03	7/29/04
Make mail and phone contact with Institutional Coordinator	3/24/03	7/29/04
Obtain lists for faculty sampling	10/01/03	6/30/04
Implement institution questionnaire	10/01/03	8/30/04
Select faculty samples	11/15/03	7/10/04
Send mail and e-mail to faculty	1/15/04	8/15/04
Implement faculty web survey data collection	1/15/04	8/30/04
Implement faculty CATI interviewing	2/15/04	8/30/04

¹This is the date on which the activity was initiated for the first applicable institution and/or its associated faculty.

²This is the date on which the activity was completed for the last applicable institution and/or its associated faculty.

³Each sampled institution appointed both a Chief Administrator, to be responsible for overall communication and institutional participation in the two field tests; and an Institutional Coordinator, who served as the primary point of contact to deal with specific survey-related questions, correspondence, and follow-up.

⁴Faculty sampling rates were determined based upon frame counts using IPEDS information, and selected on a rolling basis as lists were received. Due to a shorter time frame for the field test than the full-scale study, faculty members were selected from the first 75 lists received on a flow basis; however, to test procedures, lists of faculty and institution questionnaires continued to be sought and processed from all 150 institutions in the field test sample.

⁵The dates for the full-scale study are approximate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

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Chapter 2

Design and Implementation of the Field Test

This chapter provides a detailed summary of the design and implementation of the 2004 National Study of Postsecondary Faculty (NSOPF:04) field test. First, the sampling of institutions and of faculty and instructional staff is discussed. The sampling discussion is followed by a description of the incentive experiment design. Next, the design of the institution and faculty data collection instruments is presented. This text is followed by detailed descriptions of the institution and faculty data collection procedures. The chapter concludes with a description of the systems used to facilitate various aspects of data collection.

The field test design was discussed with the study's Technical Review Panel (TRP) comprised of nationally recognized experts in higher education. The list of panel members is provided in appendix A.

2.1 Sampling Design

In preparation for the fourth administration of the full-scale NSOPF:04, which will consist of a sample of 35,000 faculty and instructional staff across a sample of about 1,100 institutions in the 50 states and the District of Columbia, a field test survey of about 1,200 eligible respondents was carried out in a sample of 150 institutions.³ Details of the composition and construction of the sampling frame, as well as methods used to select institutions and individuals for the field test survey, are provided in this section.

2.1.1 Respondent Universe

This field test survey employed a two-stage sampling methodology; hence, there were two sampling frames (universes) from which selections were made. The first universe comprised all 3,379 eligible institutions, while the second universe included all faculty and instructional staff in the corresponding institutions, which is estimated to include approximately 1.1 million individuals (Zimble 2001). In order to protect the probabilistic nature of the full-scale sample, the field test sample was selected from the reduced universe of institutions after selection of those for the full-scale samples of NSOPF:04 and NPSAS:04. The composition and eligibility definitions for these universes are outlined below.

Institution Sample

The institution universe for the NSOPF:04 (both full-scale study and field test) includes the same types of institutions as those included for NSOPF:99. Specifically, this universe

³ Faculty sampling rates were determined based upon frame counts using IPEDS information, and selected on a rolling basis as lists were received. Due to a shorter time frame for the field test than the full-scale study, faculty members were selected from the first 75 lists received on a flow basis; however, to test procedures, lists of faculty and institution questionnaires continued to be sought and processed from all 150 institutions in the field test sample.

includes Title IV⁴ participating public or private not-for-profit postsecondary institutions that provide formal instructional programs of at least 2 years' duration designed primarily for students who have completed the requirements for a high school diploma or its equivalent.

More specifically, *eligible* institutions for the NSOPF:04 field test consisted of all Title IV postsecondary institutions that

- were classified as 2-year public or private not-for-profit degree- or certificate-granting institutions, as well as doctoral-granting or other 4-year institutions;
- offered an educational program designed for students beyond high school;
- offered programs that were academically, occupationally, or vocationally oriented;
- made programs available to the public (e.g., including persons other than those employed by the institution); and
- were located in the 50 states or the District of Columbia.

Correspondingly under the above eligibility criteria, the list of *ineligible* institutions for NSOPF:04 field test included institutions that

- were not Title IV-eligible;
- were not degree- or certificate-granting;
- were classified as operating for profit, or as less-than-2-year institutions;
- served mainly secondary students;
- provided only avocational, recreational, adult basic education, or remedial courses (e.g., dance schools);
- provided only in-house business courses or training; or
- were service (i.e., military) academies.

The institution samples for the full-scale study and field test were selected from the 2000–01 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics universe of Title IV participating postsecondary institutions. Prior to the sample selection, this universe of institutions was stratified based on institutional control and level of degree offered. Institutional control distinguished between public and private not-for-profit, while level of degree offered used the 2000 Carnegie Classification system⁵ for segmentation of institutions.

⁴ Postsecondary institutions which have signed Title IV participation agreements with the U.S. Department of Education are eligible for federal student aid programs.

⁵ The Carnegie Classification is a taxonomy of colleges and universities in the United States according to such variables as degrees awarded, field coverage, and specialization.

Table 2.1 summarizes the number of eligible institutions for each of the resulting 10 primary strata, based on the Fall 2000 IPEDS collection.

Table 2.1 NSOPF:04 institution universe, by Carnegie code-based institution type and degree granted

Degree granted	Total	Public	Private (not-for-profit)
Total	3,379	1,697	1,682
Doctoral ¹	301	191	110
Master's ²	591	271	320
Baccalaureate ³	562	82	480
Associate's ⁴	1,156	1,011	145
Other/unknown ⁵	769	142	627

¹Includes medical schools. Carnegie Classification codes 15 (Doctoral/Research Universities—Extensive), 16 (Doctoral/Research Universities—Intensive), and 52 (Specialized Institutions—Medical schools and medical centers).

²Carnegie Classification codes 21 (Master's Colleges and Universities I) and 22 (Master's Colleges and Universities II).

³Carnegie Classification codes 31 (Baccalaureate Colleges—Liberal Arts), 32 (Baccalaureate Colleges—General), and 33 (Baccalaureate/Associate's Colleges).

⁴Carnegie Classification codes 40 (Associate's Colleges) and 60 (Tribal colleges and universities).

⁵Includes all specialized schools except medical, and includes institutions that are not classified by Carnegie. Carnegie Classification codes 51 (Specialized Institutions—Theological seminaries and other specialized faith-related institutions), 53 (Specialized Institutions—other separate health profession schools), 54 (Specialized Institutions—Schools of engineering and technology), 55 (Specialized Institutions—schools of business and management), 56 (Specialized Institutions—schools of art, music, and design), 57 (Specialized Institutions—schools of law), 58 (Specialized Institutions—Teachers colleges), and 59 (Specialized Institutions—other specialized institutions). NOTE: For sampling purposes, public baccalaureate, private associate's, and other/unknown institutions were collapsed into a single stratum.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Fall 2000.

Faculty and Instructional Staff Sample

The second-stage sampling frame for both the NSOPF:04 field test and the full-scale survey includes faculty and instructional staff in the eligible postsecondary institutions. This includes both instructional faculty and faculty with no instructional responsibilities (e.g., administrative or research faculty) as well as staff with instructional responsibilities regardless of faculty status. ***Eligible*** individuals for the NSOPF:04 field test included

- faculty and instructional staff in professional schools (e.g., medical, law, dentistry);
- faculty and instructional staff who were permanent, temporary, adjunct, visiting, acting, or postdoctoral appointees;
- faculty and instructional staff who were employed full or part time by the institution;
- faculty and instructional staff who taught classes for credit or noncredit;
- faculty and instructional staff who were tenured, or nontenured tenure track, or nontenured not on tenure track;

- faculty and instructional staff who provided individual instruction, served on thesis or dissertation committees, advised or otherwise interacted with first-professional, graduate, or undergraduate students;
- faculty with administrative responsibilities only; and
- faculty and instructional staff on paid sabbatical leave.

Under the above eligibility criteria, the list of *ineligible* individuals for the NSOPF:04 field test included the following:

- graduate or undergraduate teaching or research assistants;
- faculty and instructional staff on leave without pay;
- faculty and instructional staff who were not paid by the sampled institution, such as those in the military or part of a religious order; or
- faculty and instructional personnel supplied by independent contractors or who volunteered their services, such as voluntary medical staff.

2.1.2 Statistical Methodology

This section first briefly describes the sample design for the *full-scale* study. This is because after the full-scale sample was determined, a similar methodology was used to select the needed sample for the field test of NSOPF:04 from those not sampled for participation in the full-scale study.

Institution Sample Allocation—Full-Scale Study

An evaluation of the first cycle of NSOPF (NSOPF:88) revealed that it did not include adequate samples of institutions and faculty members to support all needed analyses, particularly those indexed by type of institution. As a result, the sample sizes for the second (1993) and third (1999) cycles of NSOPF were increased in order to secure sufficient data for analysis by type of institution. These cycles also sampled doctoral-granting institutions with certainty so that all institutions in this stratum were included in the NSOPF sample. These adjustments were retained for this administration of NSOPF.

Another important set of analytical domains is groups of interest. To accommodate this analytical objective, the sample design included securing sufficient sample sizes for different groups of interest. The first-stage sample selection used a probability proportional to size (PPS) selection methodology, where each institution was assigned a composite measure of size (MOS) based on the number of eligible individuals in each of the following groups:

- Hispanic;
- non-Hispanic Black or African American;
- Asian or Pacific Islander;
- female, full-time employee; and
- all others.

Specifically, a measure of size was constructed for each institution to reflect its weighted sum of faculty members, where each of the above faculty groups had a slightly different sampling rate, with the first four groups overrepresented by a factor of about two times that used for the last group. In the interest of reducing standard errors of survey estimates, a constant sampling rate was used for each group across all institutions. That is, the MOS for the i th institution was given by:

$$MOS_i = \sum_{j=1}^5 N_{ij} \times f_j, i=1, \dots, 1,078$$

where N_{ij} represents the number of faculty members in the j th group of the i th institution, and f_j indicates the desired sampling rate for the j th faculty group.

Since the staff counts for a number of institutions included those with missing race/ethnicity and nonresident aliens, the missing information that was needed for the above calculations was imputed. This process involved hot-deck imputation of certain data items, as well as prediction of certain other items via regression models.

In addition, for this administration of NSOPF, attempts were made to employ a more efficient sample allocation to further reduce the sampling errors of estimates. For this purpose, a customized program was used to identify the optimal sample allocation. The resulting allocation of the sample institutions is summarized in table 2.2.

Table 2.2 Optimal allocation of the NSOPF:04 full-scale institution sample, by institution type and degree granted

Degree granted	Total	Public	Private (not-for-profit)
Total	1,078	681	397
Doctoral	301	191	110
Master's	194	116	78
Baccalaureate	150	24	126
Associate's	324	313	11
Other/unknown	109	37	72

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Institution Sample Allocation—Field Test Study

The field test sample was selected after the full-scale sample of institutions was selected to ensure the probability-based nature of the full-scale sample. To the extent possible, this sample was selected following the same design guidelines as those used for selection of the full-scale sample. Given that all doctoral-granting institutions were included in the full-scale sample, there were no doctoral-granting institutions in the field test sample. To compensate for this, the field test sample included additional large master's degree-granting institutions, as they most closely resemble the doctoral-granting institutions in institutional characteristics. A total of 150 institutions was selected from the main sampling frame after the full-scale NSoFaS sample of institutions was removed. This was subsampled to 75 institutions to accommodate time constraints and improve efficiency (i.e., too few faculty at institutions is not efficient). The distribution of these institutions is summarized in table 2.3.

Table 2.3 Distribution of the NSOPF:04 field test institutions, by institution type and degree granted

Degree granted	Total	Public	Private (not-for-profit)
Total	75	46	29
Doctoral	0	0	0
Master's	23	12	11
Baccalaureate	16	2	14
Associate's	32	31	1
Other/unknown	4	1	3

NOTE: The starting sample of 150 institutions was subsampled to 75 institutions for sampling faculty.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Faculty Sample Allocation

A list of faculty and instructional staff was requested of the sampled institutions; from this list the faculty sample was selected. Due to time constraints for the field test, approximately 1,200 faculty and instructional staff sampled were selected from a subsample of 75 institutions drawn from the field test institutions that sent in lists during the early period of list collection. This enabled the field test faculty data collection to commence with the full sample on

January 30, a condition that will not be present for the full-scale data collection. The field test list collection and processing continued for the remaining 75 institutions in the field test sample; however, the sampled faculty were not included in the field test data collection.

Faculty members were selected across strata defined by race/ethnic status, gender, full- and part-time status, and program area. For this purpose, it was necessary to obtain the following information for each faculty member:

- name;
- identification (ID) number;
- discipline/program area;
- race/ethnicity;
- gender; and
- part-time/full-time status.

Faculty ID numbers were used for frame preparations, including removing duplicate listings. Moreover, the following faculty data items were required to assist in data collection follow-up activities:

- campus and home mailing addresses;
- campus and home telephone numbers;
- cellular telephone number; and
- e-mail address.

A stratified systematic sampling methodology was used to select faculty and instructional staff within selected institutions. Prior to sample selection, the list was sorted by program area/discipline in each of the main sampling strata:

- Hispanic;
- non-Hispanic Black or African American;
- Asian or Pacific Islander;
- female, full-time employee; and
- all others.

The sampling rates depended on the faculty and institutional strata being sampled. These rates were calculated using the methodology outlined below.

NSOPF is a multivariate survey with a p -dimensional parameter space, $\theta = \{\theta_j\}, j = 1, \dots, p$, for which it is desired to estimate θ with $\hat{\theta}$ while minimizing cost (sample size) subject to a series of precision requirements. Consequently, optimal sampling rates can be obtained by solving the following nonlinear optimization problem:

$$\text{Minimize: } C = C_0 + \sum_{i=1}^I \left(C_{1i} n_{1i} + \sum_{f=1}^F C_{2if} n_{2if} \right)$$

$$\text{subject to: } \begin{cases} V(\hat{\theta}_j) \leq v_j, \forall j \\ 2 \leq n_{1i} \leq N_{1i}, i \in [1, I] \\ 2 \leq n_{2if} \leq N_{2if}, f \in [1, F] \end{cases},$$

where

C_0 = fixed cost not affected by changes in the numbers of institutions or faculty members selected;

C_{1i} = variable cost per institution, depending on the number of participating institutions in the i th institutional stratum;

n_{1i} = number of participating institutions in the i th stratum;

C_{2if} = variable cost per faculty member, depending on the number of participating faculty members in the f th faculty stratum within the i th institutional stratum; and

n_{2if} = number of participating faculty members in the f th faculty stratum within the i th institutional stratum.

In the above, variance constraints $V(\hat{\theta}_j) \leq v_j$ correspond to precision requirements that have been specified by NCES for survey estimates. Using data from the NSOPF:99, the needed variance components and their associated precision constraints were computed. Using Chromy's algorithm (Chromy 1987), the resulting nonlinear optimization solution to the above cost equation C provided the most effective sample allocation.

2.1.3 Incentive Experiment Design

As part of the field test study, an experiment was conducted to test a series of hypotheses regarding the use of incentives for the NSOPF:04 full-scale study. Specifically, this experiment was designed to test the following hypotheses.

Hypothesis I: Incentives increase the response rate during the initial phase of data collection and promote a higher rate of web-based responses.

Hypothesis II: Incentives increase the completion rate during the nonresponse follow-up phase of computer-assisted telephone interviewing (CATI) data collection.

Hypothesis III: A higher amount of incentive increases the response rate more than a lower amount.

The first hypothesis addressed the need for increasing the number of early responses—a byproduct of which could be an increase in the number of web-based interviews. The test of the second hypothesis was to assess the effectiveness of incentives as a tool for increasing the completion rate, overall and in particular for hard-to-reach faculty and nonrespondents. The third hypothesis aimed to determine the opportunity cost of offering different levels of incentives for increasing the overall response rate.

The employed experimental design consisted of three early-response incentive groups—ER1 (\$0), ER2 (\$20), and ER3 (\$30)—within which two CATI nonresponse follow-up groups of NF1 (\$0) and NF2 (\$30) were nested.⁶ In order to avoid potential issues resulting from offering different amounts of incentives to faculty members within a given institution, each institution was randomly assigned to one of the six treatment groups when the sample of individuals was selected. The randomization process was controlled so that the number of sample members assigned to treatment groups was approximately the same during the following three phases of the experiment. Details of each stage follow.

- Phase I:** 2/1/03 to 2/23/03 – those in groups ER2 and ER3 were offered an incentive to complete the questionnaire during the first 3 weeks of the study. Sample members were encouraged to respond by web self-administration but were also given the option of calling a toll-free number to complete the survey by phone;
- Phase II:** 2/24/03 to 4/15/03 – those in all groups were prompted by telephone to complete the survey by web self-administration or CATI, during which no individual was offered an incentive; and
- Phase III:** 4/16/03 to 6/7/03 – those in group NF2 were contacted by telephone and offered an incentive to complete the interview by CATI or web self-administration.

Operationally, at the commencement of the experiment, all sample faculty members were sent an invitation letter on February 1, asking them to complete the survey by February 23, 2003. Those in the first treatment group (ER1) received no initial incentive offer as part of their invitation letter, while those in treatment groups ER2 and ER3 were offered \$20 and \$30 incentives, respectively, for completing the survey by February 23, 2003. In phase II, nonrespondents from the previous phase were contacted by telephone and asked to complete the survey without being offered an incentive. At the onset of phase III, all outstanding nonrespondents who were pre-assigned to a CATI no-response follow-up incentive group (NF2) were offered the \$30 incentive to complete the survey, while those in the no-incentive group

⁶ The use of incentives in survey research to encourage the participation of nonresponding sample members is a well-established data collection procedure that has been reviewed and discussed in considerable detail elsewhere (see e.g., Berlin et al. 1992; Church 1993; Chromy and Horvitz 1978; Kulka 1992, 1994; Singer et al. 1999; Warriner et al. 1996). The payment of incentives to refusals and other nonrespondents provides considerable advantages to the government: They provide significant cost savings by reducing telephone costs and CATI interviewer time required for repeated contacting attempts and refusal conversion calls, and they limit potential nonresponse biases that may result from differential nonresponse of sample cohort members. The determination of the incentive level was based on careful review of the methodological literature and prior experience with incentives in earlier rounds of the study. The final incentive amounts for the field test incentive experiment were developed in consultation with the U.S. Office of Management and Budget (OMB).

(NF1) were pursued as before, without an incentive offer. In the final stage of data collection, beyond phase III, all remaining faculty members were offered the \$30 incentive to secure as many completed interviews as possible. This last set of respondents, however, was not included in the analysis of the incentive experiment because the experiment design was no longer in effect.

The results of the incentive experiment are reported in section 3.2.5.

2.2 Instrumentation

This section describes the institution and faculty instruments that were developed for the NSOPF:04 field test and implemented during the 2002–03 academic year with a purposive sample of postsecondary institutions and faculty and instructional staff. Data collection for the field test was by self-administered questionnaires on the Internet or computer-assisted telephone interviews with web nonrespondents. In contrast to the data collection approach for the 1999 NSOPF, no paper-and-pencil questionnaire options were provided.⁷ Facsimiles of these two electronic instruments, which provide item wordings and response options, are attached to this document as appendix B.

In addition to the self-administered web and CATI questionnaires, a reliability reinterview, developed from a subset of items from the complete self-administered and CATI questionnaires, was developed to assess the stability of selected questionnaire items. This instrument is described in section 4.3.1 of this report.

2.2.1 Development of Instrumentation

Project staff from RTI and MPR Associates were responsible, respectively, for developing and implementing study instrumentation for the NSOPF:04 field test and for ensuring that the instruments retained analytic comparability with earlier data collection rounds of the study. Revisions to the institution and faculty/instructional staff instruments built upon the NSOPF:99 instruments, and included the comments and suggestions of the TRP, sample respondents contacted after the study for additional information, and other government officials and postsecondary researchers. Meetings with members of the TRP, government officials, the Gallup Organization (the contractor for NSOPF:99), and other interested individuals took place before contract award for the NSOPF:04 study in May 2002. These meetings considered the relevance of policy issues examined in NSOPF:99, the importance of additional emerging issues (such as increased use of the Internet and distance education) not included in the 1999 instruments, and the consequences of adding, revising, or deleting items from the NSOPF:99 instruments.⁸

Several policy, methodological, and practical concerns guided the development of instrumentation for the NSOPF:04 field test. To ensure the comparability of data elements from earlier rounds of the postsecondary faculty study in 1988, 1993, and 1999, one of the primary

⁷ A hard copy “facsimile” of the institution questionnaire was included with the binder materials distributed to Institutional Coordinators, but this document was clearly noted to be for information purposes only.

⁸ For example, one important tool in this process was *Developing the 2004 Faculty Survey: Themes from the Literature on Postsecondary Education*, developed by the American Institutes for Research (Berger et al. 2002).

objectives of instrumentation was to maintain the trend analyses possible with this national, cross-sectional study. However, this goal was balanced by the importance of adequately considering emerging issues, while at the same time developing instruments that could be completed quickly and efficiently by sample members. For example, almost 70 percent of the institution responses for the 1999 study were obtained via paper-and-pencil questionnaire, and the average time to complete the institution questionnaire was 90 minutes. For the NSOPF:99 faculty questionnaire, over one-half (54 percent) of the respondents completed hardcopy instruments, with an average web and paper questionnaire completion time of 51 minutes; the average CATI completion time was 55 minutes.

Based on these considerations, the goals for the NSOPF:04 field test instrumentation included several elements:

- All data collection would be completed electronically, using web-based self-administered questionnaires, with telephone interviews for those who did not respond to the web self-administered questionnaires.
- All data collection instruments for the field test would be shorter than the NSOPF:99 instruments, thus simultaneously increasing response rates while reducing the potential for bias and the need for costly refusal conversion efforts. The targets for average time to complete the instruments were set at 50 minutes for the institution questionnaire and 30 minutes for the faculty/instructional staff questionnaire.
- Consistent with the transition to all-electronic data collection, the NSOPF:04 field test instrumentation was designed to be easier for sample members to complete, to be easier for the study team to process, and to provide higher-quality data.
- Finally, the instrumentation team sought to address emerging issues as well as to maintain comparability with earlier rounds of the study.

With these goals established, planning and design for the NSOPF:04 institution and faculty/instructional staff questionnaires could begin. Specification for both instruments was in RTI's Instrument Development and Documentation System (IDADS), a tool developed specifically for the design of complex electronic data collection instruments (see also section 2.5.1 below). Using the IDADS, instrument designers entered information about each instrument item, including the variable data definition, formatting, and the desired on-screen presentation.⁹ For each of the NSOPF:04 instruments, designers specified the variable names and labels, values and value labels, "applies to" fields, and variable definitions (e.g., numeric, continuous, maximum and minimum values, field size).

2.2.2 Instrument Programming

Despite the different data collection modes for the NSOPF:04 field test, the self-administered web instruments for the institution and faculty/instructional staff respondents were

⁹ In addition to instrument development, the IDADS also provides a reference system for instrument reviewers and testers and serves as the data documentation system for the data products developed by the instruments.

identical to their corresponding CATI instruments. Both instruments were web-based products, located on U.S. Department of Education servers in Washington, DC. The instruments were developed using Microsoft Corporation's Active Server Pages (ASP) web programming language.¹⁰ This approach resulted in a computer-assisted data collection program that facilitated the preloading of full-screen data entry and editing of "matrix-type" responses. The web and CATI system presented interviewers with screens of questions to be completed, with the software guiding the respondent through the interview. Inapplicable questions were skipped automatically based on prior response patterns. On-screen clarification and help text were available for all items. The instrument also provided real-time error checking for inconsistent or out-of-range responses and minimized the potential for inadvertently skipped items.

2.2.3 Institution Questionnaire

Instrumentation activities for the NSOPF:04 institution questionnaire began in May 2002 with revisions to the NSOPF:99 instrument. Project staff began working with a revised version of the NSOPF:99 instrument that incorporated the lessons learned from the NSOPF:99 data collection, including the comments and suggestions for instrumentation provided by both the NSOPF TRP and a small number of study respondents who were contacted for additional information after the completion of NSOPF:99 data collection. After careful consideration of this input and examination of the data collected during the 1998–99 academic year—including the patterns of responses and missing data, as well as time to complete estimates—instrument revisions were implemented.

Like the NSOPF:99 institution questionnaire, the NSOPF:04 instrument was divided into major sections that collected information on the number of faculty and instructional staff employed at the target institution; the policies and practices that affected, respectively, full-time and part-time faculty and instructional staff; and the percentage of undergraduate instruction assigned to various instructional personnel. Descriptions of the information included in these sections follow (see also the instrument facsimile in appendix B):

- The first section (items 1A and 1B) collected the number of faculty and instructional staff employed either full time or part time at the target postsecondary institution during the fall term of the target academic year. For NSOPF:04, institution personnel were requested to provide these counts "as of November 1, 2002, or during the Fall term of the 2002–03 academic year when faculty lists are considered complete for that semester or term."
- Institution instrument items 2 through 13 defined the second section of the questionnaire, and collected information on the employment of the target institution's *full-time* faculty and instructional staff. After first collecting information on the numbers of these personnel who gained or departed full-time employment during the previous academic year (2001–02 school year), this section examined the characteristics and policies of the target institution's tenure system, employee benefits, collective bargaining, and personnel evaluation.

¹⁰ Active Server Pages dynamically produce hypertext markup language (HTML) pages designed to facilitate information retrieval across the Internet. ASP code includes small embedded programs or scripts that are processed on a web server when accessed by users employing browser program such as Netscape or Internet Explorer. Before responses are returned to a user, the request typically accesses databases and develops a customized response.

- The third section of the institution questionnaire (items 14 through 18) examined the employment of the target institution's *part-time* faculty and instructional staff. This section used items similar to those for full-time faculty and instructional staff in the previous section. These items included the availability of retirement plans to part-time faculty, the availability of and institution-level support for various types of employee benefits, and the characteristics of the institution's personnel evaluation system.
- The fourth instrument section included a single question (19) that collected information on the percentage of the target institution's undergraduate instructional activities assigned to all instructional groups, including full-time faculty and instructional staff, part-time faculty and instructional staff, teaching assistants such as graduate students, and others such as administrators.
- Finally, the last section of the NSOPF:04 institution questionnaire (20) collected respondent contact information and feedback on data collection. This section attributed the item responses for the entire institution questionnaire to individual respondents at the institution, which allowed data collection staff to recontact respondents for clarification of responses. These data elements—respondent name, job title, telephone number, and e-mail address—were not maintained after data collection was completed.

Appendix C provides a crosswalk of NSOPF:04 institution questionnaire items to the institution questionnaires from NSOPF:88, NSOPF:93 and NSOPF:99. Table 2.4 contrasts the changes to the NSOPF:04 institution questionnaire that were developed from the institution questionnaire employed during 1999. As noted in this table, nine items from the NSOPF:99 questionnaire were eliminated from the NSOPF:04 field test institution questionnaire, nine items were revised, and eight items were repeated for the 1999 field test without change.

Table 2.4 Content and formatting changes to the NSOPF:99 institution questionnaire in preparation for the NSOPF:04 instrument

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
1	Numbers full/part-time faculty and instructional staff	Revised	1	Slight wording and instruction changes
2	Change in total number of full-time faculty and instruction staff over the past 5 years	Deleted		
3	Policies to decrease the number of full-time faculty and instructional staff	Deleted		
4	Availability of tenure system	Unchanged	3	
5	Changes in full-time faculty and instructional staff between fall terms	Revised	2	One response option added, but primary change was the elimination of tenured, tenure track, and untenured distinction
6	Number of staff considered/granted tenure	Unchanged	4/5	
7	Maximum number of years on tenure track	Unchanged	6	
8	Changes in tenure policy in past 5 years	Revised	7/8	Dropped response option E from 1999
9	Other actions to reduce tenured faculty	Deleted		
10	Number of full-time positions sought to hire	Unchanged	9	
11	Retirement plans available to full-time staff	Deleted		
12	Employee benefits available to full-time faculty and instructional staff	Revised	10	Response categories for benefits were changed to All, Some, and None; fully and partially subsidized categories were collapsed
13	Additional employee benefits available to full-time faculty and staff	Revised	11	Response categories for benefits changed to All, Some, and None
14	Percent of salary contributed by institution to benefits	Deleted		
15	Collective bargaining	Unchanged	12	
16	Teacher assessment	Revised	13	"Other, specify" response eliminated
17	Availability of retirement plans for part-time faculty and instructional staff	Revised	14	Item reformatted for web instrument
18	Type of retirement plan available for part-time faculty and instructional staff	Deleted		
19	Criteria for eligibility for retirement plans	Deleted		
20	Employee benefits available to part-time faculty and instructional staff	Revised	15	Response categories for benefits were changed to All, Some, and None; fully and partially subsidized categories were collapsed
21	Additional employee benefits available to part-time faculty and staff	Revised	16	Response categories for benefits were changed to All, Some, and None
22	Eligibility criteria for benefits	Deleted		
23	Percent of salary contributed by institution to benefits	Deleted		
24	Collective bargaining for part-time staff	Unchanged	17	
25	Teacher assessment	Unchanged	18	
26	Undergraduate instruction by instruction staff type	Unchanged	19	

NOTE: Numbers in table correspond with the question number in the instrument.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

2.2.4 Faculty Questionnaire

The NSOPF:04 field test questionnaire for faculty and instructional staff was divided into several sections that described the study and respondents' rights (informed consent), employment characteristics, academic and professional background, workload, scholarly activities, job satisfaction, compensation, background characteristics, and opinions. Table 2.5 describes these sections, the number of forms (screens) and items included in each, and the types of data elements included. Like the instrumentation for the study waves in 1988, 1993, and 1999, instrumentation for the study's faculty and instructional staff emphasized descriptive and behavioral attributes rather than attitudinal measures.

Table 2.5 Overview of the NSOPF:04 field test questionnaire for faculty and instructional staff

Section	Forms/ items ¹	Content
Total	118/260	
Informed consent	2/0	Description of the NSOPF:04 study and respondents' rights as participants.
A. Nature of employment	18/19	Does the respondent have instructional responsibilities during the 2002 Fall term? Does the respondent have faculty status? When did the person begin working? What is the respondent's rank, tenure status, and teaching field?
B. Academic/professional background	27/44	What is the respondent's highest degree? Where, when, and in what area was it earned? Is this the respondent's first academic job? Where else did the person work? Does the respondent teach? How long has the person been teaching?
C. Instructional responsibilities/ workload	23/112	How many hours during an average week does the sample member spend on instruction, research, and other activities? How many classes are taught, and what are their characteristics (e.g., duration, number/type of students, evaluation type)? What types of technology are used? What level of advising and individual instruction is offered?
D. Scholarly activities	19/31	What scholarly activities has sample member had in his/her lifetime and during past 2 years? What is principal scholarly field? Are scholarly activities funded? If yes, by whom and for what amount?
E. Job satisfaction	5/11	How satisfied is sample member with instructional duties and employment at the target school? What are the person's retirement plans?
F. Compensation	7/15	What is the respondent's compensation from the target institution and all other sources? What is the structure of the employment contract? What is the household income?
G. Sociodemographic characteristics	11/19	What is the respondent's sex, date of birth, race/ethnicity, marital status, citizenship, and disability status? Does the person support dependents?
H. Opinions	3/6	What are the respondent's opinions about faculty reward at the target institution? Would the sample member seek an academic career again?
Incentive information	3/3	These forms collected information from sample members qualified for nonresponse incentives. The information included the type of incentive desired (e.g., check or gift certificate) and the postal or e-mail address to be used for the incentive.

¹The faculty/instructional staff questionnaire was divided into forms (screens) and items. Each form was structured to include related items. The first number is the number of forms, and the second number is the number of items. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The design of the field test faculty questionnaire included input from the NSOPF:99 TRP and representatives of offices of the Department of Education, as well as an analysis of the data collected during the 1999 study. Because the NSOPF:99 instrument was 55 minutes in length,

designers made a concerted effort to shorten the instrument and make it more efficient.¹¹ Several questions were eliminated, and other questions were shortened or otherwise simplified. As table 2.6 demonstrates, 27 items were eliminated from the 1999 instrument, 52 items were simplified or otherwise revised, 12 items were added, and 10 items were unchanged.

¹¹ Efficiency for the NSOPF:04 instrument was gained by developing a shorter, tighter, and more focused interview that used state-of-the-art technology and design techniques. The sections and items were rearranged, coding procedures revised considerably to be interactive, skip patterns were employed, range checks were inserted, and other changes were implemented to make the instrument operate more efficiently.

Table 2.6 Content and formatting changes to the NSOPF:99 faculty questionnaire in preparation for the NSOPF:04 instrument

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
1	Instructional duties	Unchanged	1	
2	Credit status of instructional duties	Revised	2	Item collected information on whether any instructional activities were for credit
3	Principal activity	Revised	4	“Other, specify” field removed
4	Faculty status	Unchanged	3	
5	Full-time/part-time status	Unchanged	5	
6	Preferred part-time/full-time not available	New	6	Part-time position primary employment
		Revised	8	Preferred full-time position; eliminated reason
7	Year began job	New	7	Years employed part-time
		Revised	9	Year began at target institution
8	Rank	Revised	10	“Other, specify” field eliminated
9	Year achieved rank	Revised	11	Stem modified to specify at <u>any institution</u>
10	Tenure status/date of tenure	Revised	12/13	Stem modified to specify tenure at <u>any institution</u>
11	Duration of contract	Deleted		
12	Type of appointment	Deleted		
13	Chair of department	Deleted		
14	Principal field of teaching	Revised	16	Online coding of field used 2000 Classification of Instructional Programs (CIP)
15	Principal field of research	Revised	54	Stem wording changed to field of “scholarly activities”; online coding utility used CIP codes
16	Degrees obtained (year received, field, and name, city, state of institution awarding)	Revised	17A/ 17B/ 17C	Only the highest degree obtained is collected; other information collected is comparable
		New	17D	Year bachelor’s degree awarded; name, city, and state of awarding institution
17	Working toward a degree	Deleted		
18	Degree working toward	Deleted		
19	Primary employment	Deleted		
20	Outside consulting	Deleted		
21	Other professional employment	Revised	18	New item collected information on all employment outside of target institution
22	Number of other jobs during fall term	Revised	19A	Number of jobs expanded to include information on full- and part-time jobs (A)
			19B	outside postsecondary education and (B) at other postsecondary institutions

See notes at end of table.

Table 2.6 Content and formatting changes to the NSOPF:99 faculty questionnaire in preparation for the NSOPF:04 instrument—Continued

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
		New	19C	Number of classes taught at full-time jobs and at part-time jobs
		New	20	Whether non-postsecondary education jobs were related to teaching field
		New	21	Whether current job is first postsecondary education position
23	Total jobs held in postsecondary education	Revised	22	Wording changed from higher education to postsecondary
24	First and most recent jobs in higher education: years held, institution type, primary responsibility, employment status and title	Revised	23/24/ 25/26	NSOPF:04 field test greatly simplifies this question from 18 items to 4. Information now is collected on year started, employment status, academic rank, and tenure status in first position in postsecondary education.
25	Years teaching in higher education	Revised	30	Wording changed from higher education to postsecondary
26	Number of positions outside of higher education ever held	Revised	27	Changed to whether held positions outside postsecondary education
27	Job status of those positions	Deleted		
28	First and most recent jobs outside of higher ed: Type of employer, and primary responsibility	Revised	28/29	NSOPF:04 field test greatly simplifies this question from 10 items to 2 items. Information is now collected on employment sector of most recent job and its relationship to current principal teaching field.
29	Scholarly activities during career	Revised	52A	Changes in stem wording and response options
29	Scholarly activities during past 2 years, where sole and joint responsibility were distinguished	Revised	52B	Distinction between sole and joint responsibility of scholarship eliminated
30	Average time spent in activities per week	Revised	31	“Other, specify” field eliminated
31	Allocation of working time, preferred allocation of working time	Revised	32/33/ 34	Preferred allocation eliminated; item reformatted for web instrument; response categories simplified
32	Committee assignments	Revised	48	Information eliminated on the level of students served and the number of committees chaired and served on
33	Number of classes taught	Revised	35A	Item expanded to collect the number of classes taught for credit and not for credit
34	Number of different courses taught	Deleted		
35	Number of remedial classes taught	Revised	35B	Stem wording expanded to collect the number of remedial or developmental classes taught for credit and not for credit
36	Number of noncredit remedial classes taught			

See notes at end of table.

Table 2.6 Content and formatting changes to the NSOPF:99 faculty questionnaire in preparation for the NSOPF:04 instrument—Continued

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
37	Number of continuing education classes taught	Deleted		
38	Number of noncredit continuing education classes taught	Deleted		
39	Number of students in all noncredit classes	Deleted		
40	Number of classes taught for credit	Revised	35A	Stem wording changed to include taught for credit <u>toward degree</u> ; item expanded to collect the number of classes taught for credit and not for credit
41	Details on up to five credit classes, including the discipline of each class; description (i.e., weeks class met, credit hours, hours class met/week, number teaching assistants, number students, class team taught, hours per week respondent taught, and remedial and/or distance education); level of students, instructional method; and instructional medium	Revised	36/37	NSOPF:04 field test faculty questionnaire collected information on up to eight classes. Information on the classes included weeks and hours each week that sample member taught class, credits for the class, number of students, primary level of students in class, and whether teaching/lab assistants were used.
42	Undergraduate evaluation methods	Revised	38	Changes in stem wording/response options
43	Websites	Revised	39	Changes in stem wording
44	Use of websites	Revised	40	Changes in stem wording/response options
45	E-mail	Revised	41	Change in stem wording; gate question and percentage of students communicating by e-mail eliminated
46	Student percentage using e-mail			
47	Hours spent responding to student e-mail			
48	Internet access	Deleted New	43	How often, during the 2002 calendar year, did sample member meet with faculty to plan curriculum, students about career plans, business leaders about curriculum or student employment?
		New	44	Training/professional developed provided by institution
		New	45	Hours during calendar year spent in training
49	Individual instruction	Revised	46/47	Gate question added; stem wording changed; item reformatted for web
50	Contact hours with advisees	Unchanged	50	
51	Office hours	Revised	51	Stem wording expanded to include in-person and online office hours
		New	53	Teaching and schooling activities are the same
52	Engaged in research	Revised	55	Question revised to collect information on whether sample member had funded and/or unfunded scholarly activities
54	Engaged in funded research			
56	Number supported by grants	Deleted		

See notes at end of table.

Table 2.6 Content and formatting changes to the NSOPF:99 faculty questionnaire in preparation for the NSOPF:04 instrument—Continued

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
53	Type of primary research	Revised	56	“Other, specify” field eliminated
55	Principal investigator or co-principal investigator on funded research	Deleted		
57	Sources of funding	Revised	58	Wording changed to include <u>principal</u> source of funding; “other, specify” field eliminated
58	Total number of grants	Revised	59	Reference period changed to 2002–03 academic year
59a	Total funds	Revised	60	Stem wording simplified; follow-up screen added to address nonresponse
59b	How received funds were used	Deleted		
60	Evaluation of facilities and resources	Deleted		
61	Use of institutional funds	Deleted		
62	Number and type of administrative committees	Deleted		
63	Hours spent on administrative committee work	Revised	49	Since NSOPF:99 gate question eliminated, stem wording changed to include more on-screen information
64	Union membership	Revised	14/15	Item reformatted for Web instrument
65	Satisfaction with instructional duties	Revised	61	Number of response options reduced; new options added
66	Job satisfaction	Revised	62	Number of response options reduced
67	Likelihood of leaving job	Deleted		
68	Age to stop working at postsecondary institution	Unchanged	63	
69	Factors influencing possible decision to leave	Deleted		
70	Most important factor regarding decision	Deleted		
71	Option to draw on retirement	Deleted		
72	Retired previously	Unchanged	64	
73	Early retirement option	Deleted		
74	Age planning to retire	Unchanged	65	
75b	Basis of basic salary	Revised	67/68/	Expanded to collection information on contract length and other pay arrangements
75a	Basic salary for academic year		69	
76	Compensation for calendar year	Revised	66A	Response categories for item were combined and streamlined to encourage easier response from sample members
		New	66B	Follow-up screen developed for those unable or unwilling to respond to 66A
77	Income of spouse/significant other	Deleted		
78	Number of persons in household	Deleted		
79	Household income	Revised	70	Definition of household income added; follow-up screen addressing nonresponse added

See notes at end of table.

Table 2.6 Content and formatting changes to the NSOPF:99 faculty questionnaire in preparation for the NSOPF:04 instrument—Continued

NSOPF:99			NSOPF:04	
Item	Content	Action	Item	Changes
80	Number of dependents	Unchanged	78	Number of dependents
		New	79	Number of dependent children
81	Gender	Unchanged	71	
82	Month and year of birth	Revised	72	Birth month eliminated
83	Ethnicity	Revised	73	Reformatted for web instrument
84	Race	Revised	74	Response options reordered to match current race/ethnicity data collection standards
85	Disability	Revised	75	Stem wording revised to include additional on-screen definitions
86	Type of disability	Unchanged	76	
87	Marital status	Revised	77	Response options reordered
88	Employment of spouse/significant other	Deleted		
89	Country of birth	Revised	80	Revised to ask born in the United States only
90	Citizenship status	Revised	81	Visa status and distinction between native/naturalized citizenship eliminated
91	Parent and spouse education level	Deleted		
92	Opinions about target institution	Revised	82/83	Number of response options reduced; new options added
93	Opinions about working conditions			

NOTE: Numbers in table correspond with the question number in the instrument. Some numbers (42, 57) are missing from the NSOPF:04 instrument because they were deleted during instrument design.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

2.3 Institution Data Collection

The goals of the institution data collection for the NSOPF study were to collect a list of full- and part-time faculty and instructional staff (referred to as a “faculty list”) from each sampled institution and to obtain a completed questionnaire from each sampled institution.¹² As described in section 2.1.2, the faculty list was used for selecting the faculty sample and also provided the contact information used for faculty data collection activities. The institution questionnaire, detailed in section 2.2.3, collected information on the policies and practices affecting full- and part-time faculty and instructional staff. To facilitate the process of obtaining faculty lists and completing the institution questionnaire, an institution website was developed, and for each sampled institution a Chief Administrator was appointed.

2.3.1 Institution Website

The NSoFaS website served a number of functions for both the NSOPF and NPSAS field tests. For institutions, it was a central repository for all study documents. It housed a questionnaire for institutions to complete online (the “institution questionnaire”). It also provided for the uploading of electronic lists of faculty and instructional staff. Figure 2.1 presents the home page of the field test NSoFaS website.

¹² In addition, a list of students was requested of each institution for the NPSAS study.

Figure 2.1 The 2004 National Study of Faculty and Students institution website home page



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Faculty and Students (NSoFaS:04) website.

Visitors to the website were provided with the following links (see navigation bar on the left side of the screen):

- *About NSOPF (Faculty)* provided succinct information on the study’s mandate and research objectives, with a link to National Center for Education Statistics (NCES) reports from previous study cycles.
- *About NPSAS (Student)* provided comparable information for the student component of NSoFaS.
- *Endorsements* listed the 25 national organizations that endorsed the studies. (These are listed in the pamphlet contained in appendix D.)
- *Frequently Asked Questions (FAQs)* included questions and answers concerning all stages of data collection for both components of NSoFaS.
- *Help* provided the help desk toll-free number and e-mail address for contacting project staff, along with instructions for logging in.
- *Contact Us* contained address information for RTI International.

- *Login* provided fields for entering a username and password, giving access to all data collection pages (i.e., the institution questionnaire for them to complete; and the list of faculty and instructional staff employed by their institution, which they were to upload).

All data entry applications were protected by Secure Socket Layer (SSL) encryption. Further security was provided by an automatic “time out” feature, through which a user was automatically logged out of the NSOPF institution questionnaire if the system was idle for 30 minutes or longer. The system did not use any persistent “cookies,”¹³ thus adhering to the Department of Education’s privacy policy.

A status screen, shown in figure 2.2, indicated which stages of institution data collection were completed (denoted by a check mark) and allowed institutions to select those stages that were not yet completed. Once a stage was completed, it was no longer accessible via the web.

Figure 2.2 The 2004 National Study of Faculty and Students institution website status screen



Source: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Faculty and Students (NSoFaS:04) website.

¹³ A persistent “cookie” is a piece of information, such as an IPEDS ID, that can be stored in a file on the user’s computer. This information could then be used to identify a computer without the user even logging into the application.

2.3.2 Institution Contacting

The institution sample for the field test of the 2004 National Study of Faculty and Students consisted of 200 institutions, of which 150 were sampled for NSOPF as well as NPSAS. These 150 institutions were recruited to participate in both components of NSoFaS (NSOPF and NPSAS).

In order to increase the likelihood of institutional participation, endorsements from relevant organizations that had previously endorsed NSOPF and/or NPSAS were renewed and extended, as appropriate, to both NSoFaS component studies. An effort was also made to solicit new endorsements from other organizations as it was deemed helpful. In all, 25 organizations endorsed NSoFaS.¹⁴

The effort to recruit institutions began with a telephone call to each sampled institution to verify the address of the institution, confirm eligibility for the sample (as appropriate), and collect contact information from the Chief Administrator (CA).¹⁵

CAs at institutions sampled for NSoFaS were sent the following materials. Copies of letters and pamphlets sent to CAs and Institutional Coordinators can be found in appendix D.

- A cover letter, printed on NCES letterhead, provided background information on NSOPF and NPSAS. The letter requested that the CA designate the Institutional Coordinator for both components of the study via an online “Designation of Coordinator” form. The letter provided the IPEDS unit ID,¹⁶ password and URL (web address) necessary to access the online form.
- An NSoFaS pamphlet summarized the objectives of both NPSAS and NSOPF, and provided background information and selected findings for each component.
- An NSOPF pamphlet summarizing the NSOPF study was included to show what would be mailed to the sampled faculty.
- A NPSAS pamphlet summarizing the NPSAS study was included to show what would be mailed to sampled students.

A team of four institutional contactors followed up with the CAs by telephone. The CAs were asked to name an Institutional Coordinator (IC) by completing the “Designation of Coordinator” form online, or providing the information over the telephone.

Mailings containing instructions for participation in both NSOPF and NPSAS were sent to ICs on a flow basis as the ICs were designated by the CA. The mailing, which was packaged in a three-ring binder, included the following materials:

¹⁴ One of these organizations, associated with for-profit schools, was asked only for an endorsement for NPSAS.

¹⁵ Each sampled institution appointed both a Chief Administrator, who was responsible for overall communication and institutional participation in the two field tests; and an Institutional Coordinator, who served as the primary point of contact to deal with specific survey-related questions, correspondence, and follow-up.

¹⁶ Chief Administrators and Institutional Coordinators used their institution IPEDS unit ID and a password to authenticate to the institution website. Faculty and instructional staff were assigned a study ID and password to authenticate to the faculty website.

- a cover letter describing the study, the institution’s password, IPEDS unit ID, and web address necessary to access the NSOFAS website (a separate letter was created for NPSAS-only sampled institutions);
- a copy of the letter that went to the CA, and a facsimile of the “Designation of Coordinator” form;
- a listing of endorsements, and a copy of the endorsement letter from the National Association of Financial Aid Administrators;
- a schedule of activities, including a flowchart of NSoFaS activities;
- a facsimile of the institution questionnaire, along with instructions for its completion on the web;
- instructions for preparing the list of faculty and instructional staff, including a list of data elements requested, and a suggested file layout;
- complete instructions for participation in each phase of NSoFaS; and
- a list of transmittal options for sending faculty lists, by mail, e-mail, and direct upload to the NSoFaS website, together with an express courier packet and label for mailing the lists if required.

Faculty List Collection Procedures

The instructions directed the ICs to provide a list of full- and part-time faculty and instructional staff, including all personnel who had faculty status or any instructional responsibilities during the 2002 Fall term. Institutions were encouraged to submit an electronic list by uploading it to the secure website. The data items requested for each listed faculty or instructional staff member were as follows:

- full name;
- academic discipline;
- department/program affiliation;
- full-time/part-time status;
- gender;
- race/ethnicity;
- employee ID number (to eliminate duplicates from sample); and
- contact information—institution and home mailing address, institution and home e-mail address (if available), and home and campus telephone numbers.

Follow-up with ICs was conducted by telephone, mail, and e-mail. Telephone prompts to the ICs were made for institutions that had not provided lists. To minimize the number of

contacts made to an IC, prompting for NSOPF was combined with prompting for NPSAS. Two e-mail prompts were sent to ICs, encouraging them to review project materials available on the NSoFaS website, and alerting them to approaching deadlines. E-mail prompts were timed to precede project deadlines, and focused on timely completion of requested materials. As faculty lists were received, they were reviewed for completeness, readability, and accuracy.

Institution Questionnaire Collection Procedures

ICs were asked to complete the institution questionnaire (described in section 2.2.3) online using the study's institution website. Institution questionnaire follow-up was conducted simultaneously with follow-up for lists of faculty. If an institution was unable to complete the questionnaire online, efforts were made to collect the information over the telephone. This often involved contacting multiple offices within the institution, as questions about benefits and tenure policies could most frequently be completed by human resources, while questions about faculty counts were typically answered by institutional research staff.

Counts of full- and part-time faculty were collected in both the institution questionnaire and in the faculty lists. For each institution, the counts of full- and part-time faculty were checked against those provided in the institution questionnaire and against 2001 IPEDS Fall Staff Survey data. IPEDS data were used for discrepancy checks whenever institution questionnaire data were unavailable but also served as an additional check to catch inaccuracies in matching questionnaire/list data that otherwise would not have been discovered. Details of discrepancies in counts of full- and part-time faculty are provided in section 4.1.

Administrative Systems and Procedures

To efficiently track all mail and telephone follow-up (both incoming and outgoing) and processing and sampling activities, the study utilized an Institutional Contacting System (ICS) specifically designed to meet the needs of the NSoFaS project. The ICS was accessible to contactors, call center¹⁷ supervisors, and project staff. The NSoFaS ICS was designed so that a change in status (for example, a completed "Designation of Coordinator" form) automatically generated the next step (a mailout to the Institutional Coordinator and an automatic appointment for telephone follow-up). Electronic call notes documented the outcome of every conversation. The system allowed interviewers to set appointments for future follow-up. Through the ICS, the interviewer had the ability to designate an Institutional Coordinator, provide contact information and access the institution questionnaire and other data collection instruments. The ICS gave interviewers the ability to generate an automatic e-mail to Institutional Coordinators containing the password and IPEDS unit ID required for access. A "problem report form" feature of the ICS allowed institutional contactors to immediately forward specific call notes to an e-mail box monitored by project staff. This ensured that refusals, requests for remails, and calls requiring follow-up by project staff were handled promptly.

Quality Circle meetings, attended by interviewers, supervisors, team leaders, and project staff, were held on a weekly basis to share ideas for gaining institutional cooperation and suggestions for improving procedures. Project staff solicited feedback from call center personnel

¹⁷ RTI's Call Center Services provides telephone, web, and tracing services for a wide variety of projects, and operates two call centers: one in Raleigh, NC, and one in Greenville, NC.

on the ICS, scripts, and handling problems reported by respondents (e.g., difficulties accessing the website).

2.4 Faculty Data Collection

The NSOPF:04 field test utilized a mixed-mode data collection methodology, beginning with a mailing to respondents that gave them instructions for completing the survey by web-based self-administration. The mailing also provided a toll-free number to call if they preferred to complete the survey by telephone. After an initial period, outgoing CATI calls were made to sample members. The self-administered web instrument remained available to respondents throughout data collection. As described in section 2.1.3, an early-response incentive was offered to a portion of the field test sample as part of an experiment designed to encourage sample members to complete the self-administered web questionnaire prior to outgoing CATI calls. A nonresponse follow-up incentive was also offered to selected sample members based on their experimental group.

2.4.1 Faculty Website

The website for the NSOPF:04 field test served a dual purpose. The primary function was to provide access to the web questionnaire for the sampled faculty and instructional staff. The secondary function was to provide information, including background information about the study, the selected sample, the sponsor, the contractor, and confidentiality assurances. In addition to the information available on the site, links were provided to other relevant sites (e.g., NCES). The home page of the NSOPF:04 field test website is depicted in figure 2.3.

The initial login page provided the link to the web instrument. The login process involved entering a specific study ID and password, which were provided to the respondent in the lead letter. Respondents could also obtain their study ID and password by e-mailing the project, or by contacting a help desk agent at the NSOPF toll-free number.

As with the institution application, the web instrument was protected by SSL encryption, an automatic “time out” feature, and omission of any persistent “cookies.”

2.4.2 Incentive Experiment Implementation

As explained earlier in this chapter, the NSOPF:04 incentive experiment was intended to measure improvements to response rates when the incentives were systematically implemented. Before data collection began, sample members were assigned to one of three treatment groups (none, \$20, or \$30 incentive) for the early-response incentive (web self-administered or call-in using the toll-free number), and one of two treatment groups (none or \$30) for the refusal conversion/nonresponse incentive. To avoid potential research threats from treatment diffusion or rivalry, all individuals within an institution were offered the same level of incentive.

For sample members who were selected for the early-response incentive, explanatory materials about the incentive were provided in the lead-letter packet. In addition to the mention of the incentive in the initial lead letter, a number of follow-up reminder letters and e-mails were sent to alert the respondents of deadlines for incentive eligibility.

Figure 2.3 The 2004 NSOPF faculty website home page



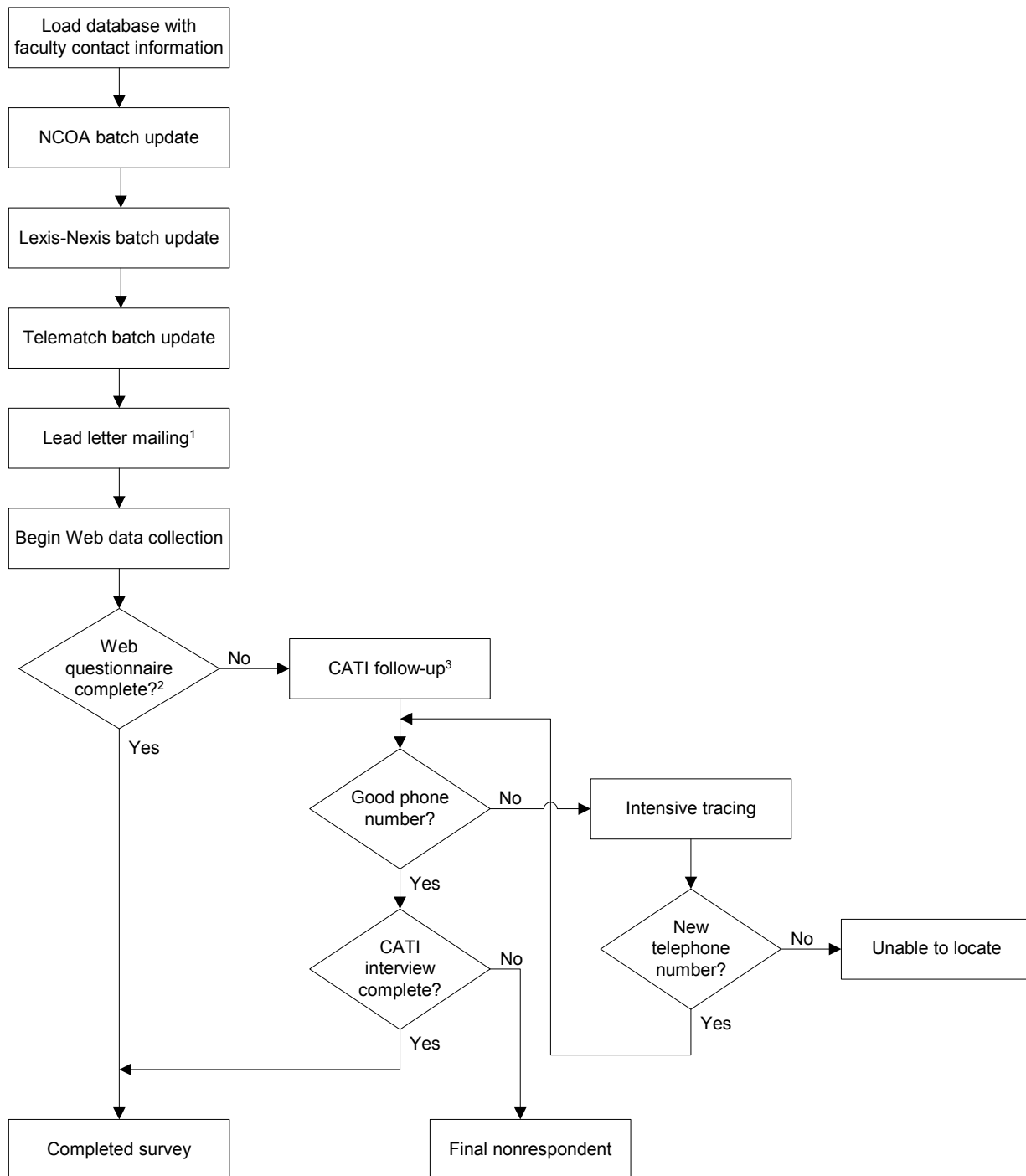
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) website.

Once the early-response incentive period expired, all remaining cases reverted to nonincentive status. In this second phase of the experiment, during which no incentives were offered, those who had not yet completed an interview were contacted by telephone. During the third and final phase of the incentive experiment, telephone-contacted sample members who refused to complete the interview and individuals who were identified as difficult to contact (i.e., no telephone number was available) were offered the nonresponse incentive if selected for the incentive treatment group. This incentive treatment was independent of the early-response incentive treatment; respondents were not necessarily offered the same incentive amount for nonresponse follow-up as they were for early-response incentives. In the final month of data collection, all cases were offered the nonresponse incentive (but excluded from incentive experiment analyses) in order to boost response rates.

2.4.3 Locating and Interviewing Procedures

The NSOPF:04 faculty data collection design involved locating sample members, providing an opportunity for the faculty or instructional staff to complete the self-administered questionnaire via the web, and following up web nonrespondents after 3½ weeks to conduct a computer-assisted telephone interview. The data collection period for the field test lasted 5 months (January 30 through June 30, 2003). Data collection activities for faculty are shown in figure 2.4.

Figure 2.4 NSOPF:04 field test faculty data collection overview



¹If a home address was available for the sample member, the lead letter package was mailed to the home. If there was no home address, the package was mailed to the school address. If there was no specific school address available, the package was mailed to the main address on file for the school.

²The web interview option was available throughout data collection, even after telephone follow-up began.

³The sample member's office and home telephone numbers were called by CATI interviewers. If no specific telephone number was available for the sample member, the school's main telephone number was used.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Mailouts

Faculty and instructional staff were sent a lead letter, instructions for the web instrument,¹⁸ and a study pamphlet. (Examples of these materials are included in appendix D.) The lead letter introduced the study and listed the organizations that endorsed the study. Both the lead letter and the instructional insert provided the information required to access the questionnaire via the web.

Periodically throughout the data collection period, reminder letters and e-mail messages were sent to nonrespondents to encourage their participation and to notify them of the incentive, if applicable. Examples of these follow-up contacts are included in appendix D.

Locating

While faculty and instructional staff sampled from known institutions tend to be more easily located than some other sample populations, such as students, locating each sample member was critical to the success of the NSOPF:04 field test. Locating activities were conducted in two stages: advance tracing (batch searches, which took place before data collection began) and intensive tracing (interactive tracing conducted during data collection).

Advance tracing. Upon receipt of faculty lists from participating institutions, batch locating activities were employed to update home address and telephone information for the sampled faculty and instructional staff.¹⁹ The following databases were used for these searches:

- National Change of Address (NCOA) – a database consisting of change of address data submitted to the U.S. Postal Service and updated every 2 weeks with records stored for 18 months. Cases with home address information were sent to NCOA to search for any updated home address information.
- Lexis-Nexis – a vendor specializing in database management, including credit header information that contains address and other contact information. The most recent home address (obtained either from the institution or the NCOA search) was provided to Lexis-Nexis for an address and telephone number search.
- Telematch – a computerized residential telephone number look-up service consisting of over 65 million listings, over 1 million not-yet-published numbers of new movers, and over 10 million businesses. Telematch used all home addresses and telephone numbers for a sample member (obtained from the institution, NCOA, and Lexis-Nexis) to search for updated home telephone numbers.

In some cases, the database searches confirmed or updated the contact information provided by the institution; in other cases, the searches resulted in new contact information. All locating information obtained as a result of these searches was loaded into the NSOPF:04 database.

¹⁸ Respondents were also given the option of calling a toll-free number to complete the survey by telephone.

¹⁹ Only cases with home contact information were sent for batch database searches because office contact information is not available through these sources. Home contact information was not available for some sample members. If needed, experienced tracers searched for office contact information during the intensive tracing stage.

Intensive tracing. Intensive tracing was performed on a case if the case had no telephone number for loading in CATI, or the case was designated as a dead end in CATI (i.e., there were no more telephone numbers to call for the case). The following steps were performed by the tracing unit to locate sample members.

- Check the preloaded information using an online directory assistance search. This step was intended to identify the easy-to-locate cases (for example, a case might have the correct telephone number but the wrong area code).
- Conduct credit bureau database searches. The tracing unit had access to various proprietary databases (TransUnion, Equifax, and Experian) containing current address and phone listings for the majority of consumers with a credit history.
- Conduct additional intensive tracing. This step included (but was not limited to) searches using Lexis-Nexis and FastData, directory assistance calls, and searches of institution websites for campus directories.

Tracing staff checked all new leads procured during their tracing efforts to confirm the addresses and telephone numbers that were obtained. When a telephone number for a sample member was confirmed, the case was returned to CATI for telephone interviewing. Cases with new address information were mailed a lead-letter packet. If the tracing unit located a new e-mail address for a sample member, the information was loaded into the database for future e-mail mailings to nonrespondents.

Staff Training

The mixed-mode design of the NSOPF:04 field test data collection required the development of three separate training programs for data collectors: help desk training, CATI interviewer training, and tracing. In addition, separate training sessions were conducted for supervisors.

At the outset of each of the training sessions, each staff member received a detailed NSOPF:04 interviewer manual that served as both an instruction guide for the training lectures, discussions, and practical exercises, and as a reference guide for use after completion of training. Supervisors, monitors, and help desk agents received supplemental chapters in their manuals. The manual's table of contents and a sample of the agenda for telephone interviewer training are included in appendix E.

Common to each training session was a study overview, a review of the confidentiality requirements, a demonstration interview, an in-depth review of the instrument, hands-on practice exercises with the instrument, and open-ended coding modules. The help desk and CATI telephone training sessions were customized as follows:

- *Help desk agents* reviewed the “frequently asked questions” in detail, including responses to instrument-specific questions as well as technical issues, and instructions for documenting each call to the study hotline.

- *Telephone interviewers* were trained in techniques for gaining cooperation of sample members, and of other contacts, as well as techniques for addressing the concerns of reluctant participants and for avoiding refusals.

Self-Administered Questionnaires

The first phase of data collection, lasting 3½ weeks after the lead letters were mailed, provided an opportunity for respondents to complete the self-administered questionnaire via the web before the telephone follow-up calls began. The web interview site remained available 24 hours a day, 7 days a week, thereby giving sample members the option to complete the questionnaire online during the entire 5 months of data collection.

Help Desk Operations

The NSOPF help desk opened on January 31, 2003, in anticipation of the first respondent calls after the lead-letter mailing. The help desk staff were available to assist sample members who had questions or problems accessing and completing the self-administered questionnaire. A toll-free hotline was set up to accept incoming help desk calls. If technical difficulties prevented a sample member from completing the self-administered questionnaire, a help desk staff member, also trained to conduct telephone interviews, would encourage the caller to complete a telephone interview rather than to attempt the self-administered questionnaire.

All incoming calls from sample members were documented using the help desk software. In addition to this primary documentation function, the software provided

- information needed to verify a sample member's identity,
- login information (study ID and password) for the web questionnaire, and
- a means for tracking calls that could not be resolved immediately.

The help desk software also provided project staff with reports on the types and frequency of problems experienced by sample members, as well as a way to monitor the resolution status of all help desk inquiries.

Telephone Interviewing

Telephone prompts to nonrespondents began on February 24, 2003, at the end of the early-response incentive period. CATI procedures included attempts to locate, gain cooperation from, and interview study sample members who had not completed the questionnaire online. Interviewers encouraged respondents to complete the interview by telephone as soon as they made contact. However, if the sample member expressed a preference for completing the self-administered questionnaire via the web, a callback was scheduled for 1 week later. During these callbacks, interviewers again prompted the faculty members to complete the questionnaire by telephone.

Refusal conversion procedures were used to gain cooperation from individuals who refused to complete the field test questionnaire. When a refusal was first encountered, either because the sample member refused or because a “gatekeeper” (secretary or spouse) refused on behalf of the sample member, the case was referred to a refusal conversion specialist. Refusal conversion specialists were selected from among those interviewers most skilled at obtaining cooperation and were given training in refusal conversion techniques tailored to NSOPF. The refusal training emphasized ways to gain cooperation, overcome objections, address the concerns of gatekeepers, and encourage participation.

2.5 Data Collection Systems

2.5.1 Instrument Design and Documentation System

The Instrument Design and Documentation System (IDADS) is a controlled web environment in which project staff developed, reviewed, modified, and communicated changes to specifications, code, and documentation for the NSOPF:04 instrument. All information relating to the NSOPF:04 instrument was stored in a Structured Query Language (SQL) Server database and was made accessible through Windows and web interfaces. There are three modules within IDADS: specifications, programming, and documentation.

Initial specifications were generated within the IDADS *specification module*. This module enabled access for searching, reviewing, commenting on, updating, exporting, and importing information associated with instrument development. All records were maintained individually for each item, which provided a historical account of all changes requested by both project staff and NCES.

Once specifications were finalized, the *programming module* within IDADS produced hypertext transfer markup language (HTML), Active Server Pages (ASP), and JavaScript template program code for each screen based on the contents of the SQL Server database. This output included screen wording, response options, and code to write the responses to a database, as well as code to automatically handle such web instrument functions as backing up and moving forward, recording timer data, and linking to context-specific help text. Programming staff edited the automatically generated code to customize screen appearance and program response-based routing.

The *documentation module* contained the finalized version of all instrument items, their screen wording, and variable and value labels. Also included were the more technical descriptions of items such as variable types (alpha or numeric), information regarding to whom the item was administered, and frequency distributions for response categories. The documentation module was used to generate the instrument facsimiles and the Electronic Codebook (ECB) input files.

2.5.2 Integrated Management System

All aspects of the field test were under the control of an Integrated Management System (IMS), which was employed for the field test and remains in use for the full-scale study. The IMS is a comprehensive set of desktop tools designed to give project staff and NCES access to a

centralized, easily accessible repository for project data and documents. The NSOPF:04 IMS consists of three components: the management module, the Receipt Control System (RCS), and the Case Management System (CMS).

The *management* module of the IMS contains tools and strategies to assist project staff and the NCES project officer in managing the study. All information pertinent to the study is located there, accessible via the web, in a secure desktop environment. Available on the IMS are the current project schedule, monthly progress reports, daily data collection reports and status reports (available through the Receipt Control System described below), project plans and specifications, project information and deliverables, instrument specifications, staff contacts, the project bibliography, and a document archive. The IMS management module also has a download area from which the client and subcontractors can retrieve large files when necessary.

The *Receipt Control System* (RCS) is an integrated set of systems that monitors all activities related to data collection, including tracing and locating. Through the RCS, project staff are able to perform stage-specific activities, track case statuses, identify problems early, and implement solutions effectively. RCS locator data are used for a number of daily tasks related to sample maintenance. Specifically, the mailout program produces mailings to sample members, the query system enables administrators to review the locator information and status for a particular case, and the mail return system enables project staff to update the locator database. The RCS also interacts with the Case Management System and tracing unit databases, sending locator data among the three systems as necessary.

The *Case Management System* (CMS) is the technological infrastructure that connects the various components of the CATI system, including the questionnaire, utility screens, databases, call scheduler, report modules, links to outside systems, and other system components. The call scheduler assigns cases to interviewers in a predefined priority order. In addition to delivering appointments to interviewers at the appropriate time, the call scheduler also calculates the priority scores (the order in which cases need to be called based on preprogrammed rules), sorts cases in non-appointment queues, and computes time zone adjustments to ensure that the sampled respondents are not phoned outside the specified calling hours.²⁰ The call scheduler also allows callbacks to be set, and assigns status codes to the case. Using an algorithm based on the previous call results, the call scheduler determines which telephone number (e.g., home or work) associated with the case should be called next.

²⁰ Call Center hours were 9:00 a.m. to 11:00 p.m. Monday through Thursday, 9:00 a.m. to 9:00 p.m. Friday, 9:00 a.m. to 5:00 p.m. Saturday, 1:30 p.m. to 9:30 p.m. Sunday, Eastern Time Zone. The CMS was programmed to account for time zones such that respondents would not be called after 9:00 p.m. their time.

Chapter 3

Data Collection Outcomes

The success of the 2004 National Study of Postsecondary Faculty (NSOPF:04) field test was dependent upon achieving high levels of cooperation at all stages of the data collection process. The data collection results—namely the institution and faculty response rates, along with the results of efforts that contributed to those rates—are the focus of this chapter. These results address some of the major questions of the field test, namely the following:

- How did combining NSOPF and the National Postsecondary Student Aid Study (NPSAS) impact institution data collection?
- What were the response rates of the faculty data collection with a 5-month field period, and given the elimination of the paper option?
- What was the distribution of web and computer-assisted telephone interviewing (CATI) completes? Was the goal of 50 percent web completes and 50 percent CATI reached?
- What role did incentives play in fostering early response and nonresponse follow-up? Were they cost effective?
- How much effort, and of what type, was needed for locating and tracing?
- How long did the web and CATI surveys take to complete? Were the goals of shortening the survey met?
- What was the level of effort required to achieve the response rate?

3.1 Institution Data Collection Results

3.1.1 Institution Participation

Of the 150 institutions selected to participate in the field test for NSOPF:04, 149 were found to be eligible institutions. These eligible institutions were subsampled to 75 institutions for sampling faculty to accommodate time constraints. Although faculty and staff were not sampled from all eligible institutions, attempts were made to secure lists of faculty and completed institution questionnaires from all sampled institutions until the end of the data collection period in order to test the procedure. Of the 149 eligible institutions, 147 (99 percent) appointed an Institutional Coordinator (IC) to assist with study requirements, 134 (90 percent) provided a list of faculty and instructional staff, and 114 (77 percent) completed the institution

questionnaire. The breakdown of institutions providing faculty lists and completing the institution questionnaire by institution type are presented in table 3.1.

Table 3.1 Number of institutions providing lists and completing the institution questionnaire, by type of institution: 2003

Institution type	Number of eligible institutions	Provided lists		Completed questionnaire	
		Number	Percent ¹	Number	Percent ¹
Total	149	134	89.9	114	76.5
Public master's	25	23	92.0	21	84.0
Public baccalaureate	6	6	100.0	5	83.3
Public associate's	58	50	86.2	44	75.9
Public other/unknown	4	4	100.0	2	50.0
Private not-for-profit master's	26	24	92.3	19	73.1
Private not-for-profit baccalaureate	21	18	85.7	16	76.2
Private not-for-profit associate's	3	3	100.0	3	100.0
Private not-for-profit other/unknown	6	6	100.0	4	66.7

¹Percentages are based on the number of eligible institutions within the row under consideration.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Comparing the NSOPF:04 field test to previous cycles of NSOPF (see table 3.2), there is no evidence that combining the NSOPF and NPSAS had a measurable effect on the overall response rate for NSOPF. The period for field test institution data collection was slightly longer than that of the NSOPF:99 field test; however, since the current field test occurred at a time when many postsecondary institutions were experiencing severe fiscal constraints that may have affected the resources available for the study, it is difficult to determine what role, if any, fielding the two studies together may have played in extending the data collection period.

Table 3.2 Institution participation rates (faculty lists), by cycle of the National Study of Postsecondary Faculty (NSOPF)

NSOPF cycle	Number eligible	Number providing list	Participation rate (unweighted percent)	Length of effort
NSOPF:88 field test	105	96	91.4	9 weeks
NSOPF:88 full-scale study	480	449	93.5	24 weeks
NSOPF:93 field test	136	121	89.0	28 weeks
NSOPF:93 full-scale study	962	817	84.9	34 weeks
NSOPF:99 field test	162	146	90.1	30 weeks
NSOPF:99 full-scale study	959	819	85.4	54 weeks
NSOPF:04 field test	149	134	89.9	34 weeks

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Institutions were offered several options for submitting their faculty lists. The preferred type of list was a single, unduplicated (i.e., duplicate entries of names were removed) electronic faculty list, because such a list required no processing prior to electronic sampling. However, any set of electronic lists was preferable to hardcopy lists because they could easily be

unduplicated using the faculty identification (ID) number. Table 3.3 provides the distribution of faculty lists submitted, by transmittal mode, for each of the sampling strata. Approximately 89 percent of institutions that provided lists did so electronically (either uploading it to the NSOPF website, sending by e-mail, or mailing a diskette), and 11 percent provided hardcopy lists (information culled from a course catalog, directory, or pre-existing personnel file).

Table 3.3 Number of faculty lists, by type of institution and transmittal mode: 2003

Institution type	Number of sampled institutions	Number of institutions providing lists via the four transmittal modes				
		Total	E-mail	Upload	Diskette	Paper
Total	150	134	52	66	1	15
Public master's	25	23	9	13	0	1
Public baccalaureate	6	6	4	2	0	0
Public associate's	58	50	19	26	1	4
Public other/unknown	5	4	4	0	0	0
Private not-for-profit master's	26	24	8	11	0	5
Private not-for-profit baccalaureate	21	18	6	9	0	3
Private not-for-profit associate's	3	3	1	1	0	1
Private not-for-profit other/unknown	6	6	1	4	0	1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

3.1.2 Institution Survey Completion Timing

The timing analysis was conducted by embedding time stamps in the programming code for each form (screen) in the survey. From these time stamps, the number of seconds spent on each screen (on-screen time) and the transit time between screens (i.e., the time required to transmit data to the server, the time for the server to store the data and assemble the next page, and the time for the page to be transmitted and loaded on the computer) were calculated. A cumulative on-screen time and a cumulative transit time for the institution survey also were calculated from the time stamps. The sum of the cumulative on-screen and transit times was the total instrument time—that is, the number of minutes it took to administer the questionnaire.

Unlike most questionnaires, which require the respondent to complete the survey in sequential order, the institution questionnaire included a status screen that allowed respondents to jump to particular questions they could answer, while skipping over ones they could not answer. For most institutions, the questionnaire was completed in multiple Internet sessions and, in some cases, by multiple people at the institution.

Project staff estimated the average time to complete the institution questionnaire would be approximately 50 minutes. Based on the time stamps for each form, the time to complete the entire questionnaire ranged from 6 to 107 minutes, with an average of 27 minutes. Of these 27 minutes, approximately 23 minutes, on average, were spent answering questions (on-screen time) and 4 minutes, on average, were spent in transit. These numbers may be misleading because some institutions apparently completed the sample hardcopy version of the questionnaire in advance, so their time to complete the web questionnaire simply reflected the time it took to key in their responses.

Five forms (screens) of the institution survey took more than 1 minute to complete, on average, as shown in table 3.4. Each of these five screens required the respondent to look up information and/or requested several pieces of information, which accounts for the longer times on these screens.

Table 3.4 Average and maximum completion time, in seconds, for forms averaging more than 1 minute to administer: 2003

Form	Description	Time, in seconds		Number of cases
		Average	Maximum	
1	Number of full-/part-time faculty, Fall 2002	84	611	114
2	Changes in number of full-time faculty include (a) the total number of full-time faculty and instructional staff at the start of the 2001–02 academic year; (b) the number who changed from part-time to full-time status during the academic year; (c) the number hired; (d) the number retired; (e) the number who left for other reasons; (f) the number who changed from full-time to part-time status during the academic year; and (g) the total number at the start of the 2002–03 academic year. This screen included a check to determine whether the figures made sense (i.e., whether $a+b+c-d-e=f+g$, within 10 percent).	163	1,377	113
2A	Reason for discrepancy in reported numbers of full-time faculty, 1A and 2G. An exact match was required for the number of full-time faculty at the start of the 2002–03 academic year (1A and 2G). Form 2A was administered to the 17 schools that provided different counts. This screen displayed the two counts and asked the respondent to indicate which one needed to be corrected, or to type in the reason for the discrepancy in the text box provided.	114	684	17
19	Assignment of undergraduate instruction by type of faculty or instructional staff included (a) full-time faculty or instructional staff; (b) part-time faculty or instructional staff; (c) teaching assistants such as graduate students who taught classes; and (d) others. A pop-up box appeared requiring resolution if the responses did not sum to 100 percent.	81	528	114
20	Contact information and comments/suggestions. The form came up each time the questionnaire was accessed, regardless of whether the institution had completed the form in an earlier section.	177	937	114

NOTE: The number of cases per form varies due to the interview skip logic. Outliers for each form were top coded to the upper limit for that form.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

3.2 Faculty Data Collection Results

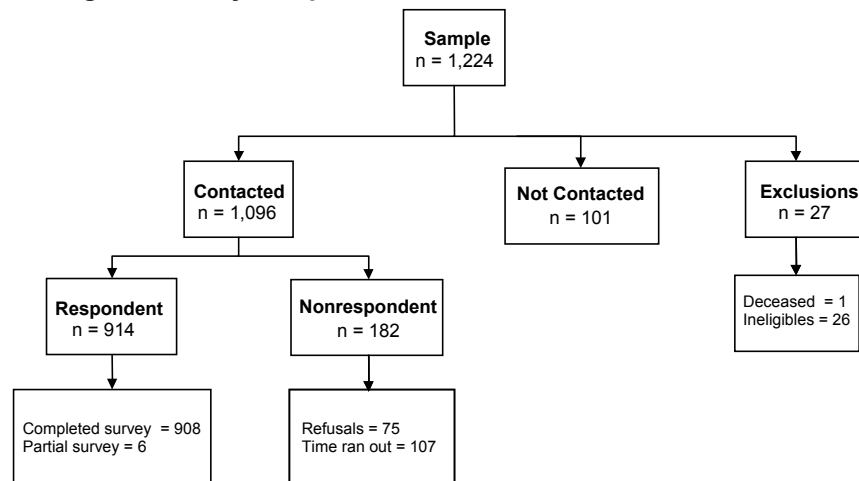
Faculty data collection efforts for the NSOPF:04 field test consisted of three essential steps: locating (identifying telephone numbers and addresses for sample members), contacting (carrying out the necessary steps to reach the faculty member), and encouraging survey completion by web-based self-administration or CATI. This section describes the results of the

NSOPF:04 field test data collection effort, and evaluates the effectiveness of the data collection procedures used in locating, contacting, and interviewing sample members.

3.2.1 Response Rate

Overall contacting and survey completion results for the faculty contact phase of the NSOPF:04 field test²¹ are presented in figure 3.1. Of the 1,224 cases in the original sample, 27 (2 percent) were excluded because they were ineligible for the study or deceased. Of the 1,197 eligible sample members, 1,096 (92 percent) were contacted and 914 completed the survey, for an unweighted response rate of 76 percent achieved in the 5-month period from January 30 to June 30, 2003.

Figure 3.1 Contacting and survey completion outcomes: 2003



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

3.2.2 Locating and Survey Completion

Most of the faculty lists provided by the institutions contained contact information for sample members, including the sample member's name, office telephone number, school name, school address, and department. For some cases, home addresses also were provided. In addition, a number of approaches were used to locate faculty and instructional staff, including the initial mailing to all sample members, follow-up letters and e-mails to nonrespondents, telephone tracing (interviewers calling telephone numbers provided on the faculty lists as well as any additional numbers obtained during the course of making those calls), and intensive tracing (i.e., using consumer databases, Internet searches, and criss-cross directories).

Before the start of data collection, batch database searches were conducted using the contact information provided by the institutions as noted in chapter 2. For many sample members, the database searches simply confirmed the contact information provided by the

²¹ Faculty were selected from the first 75 institutions providing a complete list of faculty.

institution; in other cases, the searches resulted in new contact information. Tables 3.5, 3.6 and 3.7 display locating and survey completion rates by batch processing source.

Table 3.5 Locate and survey completion rates, by National Change of Address (NCOA) batch processing: 2003

NCOA match status	Total	Located		Completed survey	
		Number	Percent	Number	Percent
Total	888	817	92.0	690	77.7
New information from NCOA	36	31	86.1	26	72.2
No match from NCOA	852	786	92.3	664	77.9

NOTE: Percentages are based on the total within the row under consideration. Although there were 1,224 in the sample, only cases with home address information provided in the faculty list were sent to NCOA. Because NCOA required a minimum of 200 cases for a batch search, near the end of advance tracing period some cases with home address information were not sent to NCOA as the minimum was not met.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Table 3.6 Locate and survey completion rates, by Lexis-Nexis batch processing: 2003

Lexis-Nexis match status	Total	Located		Completed survey	
		Number	Percent	Number	Percent
Total	873	807	92.4	681	78.0
Confirmed/new information from Lexis-Nexis	130	125	96.2	103	79.2
No match from Lexis-Nexis	743	682	91.8	578	77.8

NOTE: Percentages are based on the total within the row under consideration. Although there were 1,224 in the sample, only cases with home address information provided in the faculty list (and possibly updated by the NCOA search) were sent to Lexis-Nexis. Lexis-Nexis file requirements were more stringent than NCOA, hence some cases that were sent to NCOA could not be sent to Lexis-Nexis.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Table 3.7 Locate and survey completion rates, by Telematch batch processing: 2003

Telematch match status	Total	Located		Completed survey	
		Number	Percent	Number	Percent
Total	932	858	92.1	727	78.0
Confirmed/new information from Telematch	599	562	93.8	484	80.8
No match from Telematch	333	296	88.9	243	73.0

NOTE: Percentages are based on the total within the row under consideration. Although there were 1,224 in the sample, only cases with home information provided in the faculty list (and possibly updated by NCOA and Lexis-Nexis) were sent to Telematch (including cases that were not sent to NCOA because of their minimum batch size requirement or Lexis-Nexis because of their stringent file requirements).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

First, faculty home address information obtained from the institutions was sent to National Change of Address (NCOA) to search for updates. NCOA does not confirm addresses; it either provides different address information or indicates that the address is not valid. Of the 888 cases sent to NCOA, only 36 (4 percent) were returned with different home address information (see table 3.5). Over 92 percent of faculty for whom NCOA did not find a match were located; the locate rate for faculty with information from NCOA was 86 percent. Survey completion rates were 78 and 72 percent, respectively.

The next database used was Lexis-Nexis, which either provided different home contact information (address and phone number) or confirmed the home contact information provided by the institutions. As illustrated in table 3.6, of the 873 cases sent to Lexis-Nexis, only 130 (15

percent) were returned with confirmed or different information. Ninety-six percent of faculty with different or confirmed information from Lexis-Nexis were located, compared with 92 percent of those for whom Lexis-Nexis did not provide a match. Survey completion rates were 79 and 78 percent, respectively.

Finally, faculty home contact information was sent to Telematch for batch processing. Telematch uses a name, street address, and ZIP code as search criteria and provides telephone numbers only (not addresses). There were three possible results of a Telematch search: Telematch could (1) confirm the telephone number on file; (2) provide a different telephone number; or (3) indicate there was no match for the address on file. Of the 932 cases sent to Telematch, 599 (64 percent) were returned with confirmed or different information. Faculty with different or confirmed telephone numbers from Telematch had a locate rate of 94 percent and a survey completion rate of 81 percent, compared with an 89 percent locate rate and a 73 percent completion rate for those who were not matched.

In general, the contact information provided by the school proved effective in contacting faculty and instructional staff; 1,001 (82 percent) sample members required no intensive tracing, while the remaining 223 (18 percent) required intensive tracing. Because the contact information provided by the institution was generally quite good, batch database searches will be eliminated in the full-scale study. It is planned that advance tracing efforts instead target cases for which the school provided incomplete contact information.

Intensive tracing was required when a case did not have a telephone number associated with it or the CATI calls had exhausted all numbers for the case without reaching the sampled individual. A total of 223 cases received intensive tracing (i.e., to identify a valid telephone number and/or address), of which 149 (67 percent) were located. About 49 percent of the cases that received intensive tracing completed the survey. Table 3.8 provides a breakdown of the tracing results for the 223 potentially eligible sample members sent for intensive tracing. Tracers found new home telephone or home address information for 71 percent of cases, new office telephone numbers for 15 percent of cases, and e-mail addresses for 2 percent of the cases. Tracers were only able to confirm the existing contact information on file for 4 percent of cases. Eighteen cases (8 percent) were classified as unlocateable.

Table 3.8 Locate and survey completion rates, by outcome of intensive tracing efforts: 2003

Outcome of intensive tracing efforts	Total	Located		Completed survey	
		Number	Percent	Number	Percent
Total	223	149	66.8	110	49.3
New telephone (only)	6	0	0.0	0	0.0
New address (only)	12	6	50.0	4	33.3
New address and phone	141	110	78.0	83	58.9
New office telephone number	33	23	69.7	16	48.5
E-mail only	5	0	0.0	0	0.0
No new information confirmed	8	5	62.5	3	37.5
Unable to locate telephone number	18	5	27.8	4	22.2

NOTE: Percentages are based on the total within the row under consideration.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Table 3.9 provides an overview of the primary sources used by tracers during the intensive tracing process. Tracers generally use multiple sources when tracing a case, so no one

source can be pinpointed as the one that resulted in the “locate.” Among the sources used most frequently for intensive tracing were Internet searches, directory assistance, and various consumer database searches.

Table 3.9 Contact rates, by intensive tracing source: 2003

Tracing source	Total	Located	
		Number	Percent
Internet search	213	142	66.7
Directory assistance	169	115	68.0
Consumer database search – Lexis-Nexis	91	63	69.2
Reverse phone lookup – Database	88	61	69.3
Address search – Database	64	34	53.1
Consumer database search – Transunion	64	40	62.5
Name search – Database	57	36	63.2
Consumer database search – Experian search on Social Security number	49	33	67.3
Consumer database search – Experian address search	34	21	61.8
Other collateral source	18	10	55.6
Directory assistance – Plus	13	6	46.2

NOTE: Most cases were traced using multiple sources, so row totals and percentages are not mutually exclusive.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The breakdown of faculty and instructional staff requiring intensive tracing, by faculty status and institution type, is presented in table 3.10. Twenty-seven percent of part-time faculty required intensive tracing, compared to 9 percent for full-time faculty. Twenty percent of faculty at public institutions required intensive tracing compared to 14 percent at private not-for-profit institutions.

Table 3.10 Faculty and instructional staff requiring intensive tracing procedures, by employment status and institution type: 2003

Employment status and institution type	Total	Cases requiring intensive tracing	
		Number	Percentage
Total	1,224	223	18.2
Employment status			
Full-time	625	59	9.4
Part-time	585	159	27.2
Unknown employment status	14	5	35.7
Institution control			
Public	879	175	19.9
Private not-for-profit	345	48	13.9
Institution type			
Public master’s	272	24	8.8
Public baccalaureate	24	0	0.0
Public associate’s	578	151	26.1
Private not-for-profit master’s	193	32	16.6
Private not-for-profit baccalaureate	129	12	9.3
Private not-for-profit associate’s	5	1	20.0
Other/unknown	23	3	13.0

NOTE: Percentages are based on the number of sample members within the row under consideration.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The results of faculty and instructional staff locating and survey completion, broken down by faculty status and institution type, are shown in table 3.11. All full-time faculty members were located, compared with 97 percent of part-time faculty. Eighty-one percent of full-time faculty completed the survey, compared with 72 percent of part-time faculty. When examined by institution type, locate rates ranged from 97 to 100 percent. Survey completion rates ranged from 71 percent for faculty at public 2-year institutions to 100 percent at private not-for-profit 2-year institutions.

Table 3.11 Faculty locating and survey completion results, by employment status and institution type: 2003

Employment status and institution type	Total sample	Located		Number eligible	Completed survey	
		Number	Percent ¹		Number	Percent ²
Total	1,224	1206	98.5	1,197	914	76.4
Employment status						
Full-time	625	625	100.0	613	495	80.8
Part-time	585	568	97.1	570	409	71.8
Unknown employment status	14	13	92.9	14	10	71.4
Institution control						
Public	879	861	98.0	857	628	73.3
Private not-for-profit	345	345	100.0	340	286	84.1
Institution type						
Public master's	272	269	98.9	267	209	78.3
Public baccalaureate	24	24	100.0	23	18	78.3
Public associate's	578	563	97.4	562	399	71.0
Private not-for-profit master's	193	193	100.0	190	160	84.2
Private not-for-profit baccalaureate	129	129	100.0	127	106	83.5
Private not-for-profit associate's	5	5	100.0	5	5	100.0
Other/unknown	23	23	100.0	23	17	73.9

¹ Percentages are based on the number of sample members within the row under consideration.

² Percentages are based on the number of eligible sample members within the row under consideration.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The results of faculty and instructional staff survey completion by mode of data collection are presented in table 3.12. A total of 559 respondents completed the self-administered web survey and 355 respondents completed the CATI interview. Self-administered questionnaires accounted for 61 percent of all completed surveys, and telephone questionnaires accounted for the remaining 39 percent of completed surveys. While the NSOPF:04 field test exceeded the goal of having 50 percent of completes by web, a substantial portion of these web surveys were completed only after having been called by a CATI interviewer.

Table 3.12 Response rates and mode of completion, by employment status and institution type: 2003

Employment status and institution type	Number eligible	Total responses		Mode of completion			
		Number	Percent ¹	Self-administered		CATI	
				Number	Percent ²	Number	Percent ²
Total	1,197	914	76.4	559	61.2	355	38.8
Employment status							
Full-time	613	495	80.8	333	67.3	162	32.7
Part-time	570	409	71.8	220	53.8	189	46.2
Unknown employment status	14	10	71.4	6	60.0	4	40.0
Institution control							
Public	857	628	73.3	359	57.2	269	42.8
Private not-for-profit	340	286	84.1	200	69.9	86	30.1
Institution type							
Public master's	267	209	78.3	136	65.1	73	34.9
Public baccalaureate	23	18	78.3	7	38.9	11	61.1
Public associate's	562	399	71.0	215	53.9	184	46.1
Private not-for-profit master's	190	160	84.2	107	66.9	53	33.1
Private not-for-profit baccalaureate	127	106	83.5	77	72.6	29	27.4
Private not-for-profit associate's	5	5	100.0	4	80.0	1	20.0
Other/unknown	23	17	73.9	13	76.5	4	23.5

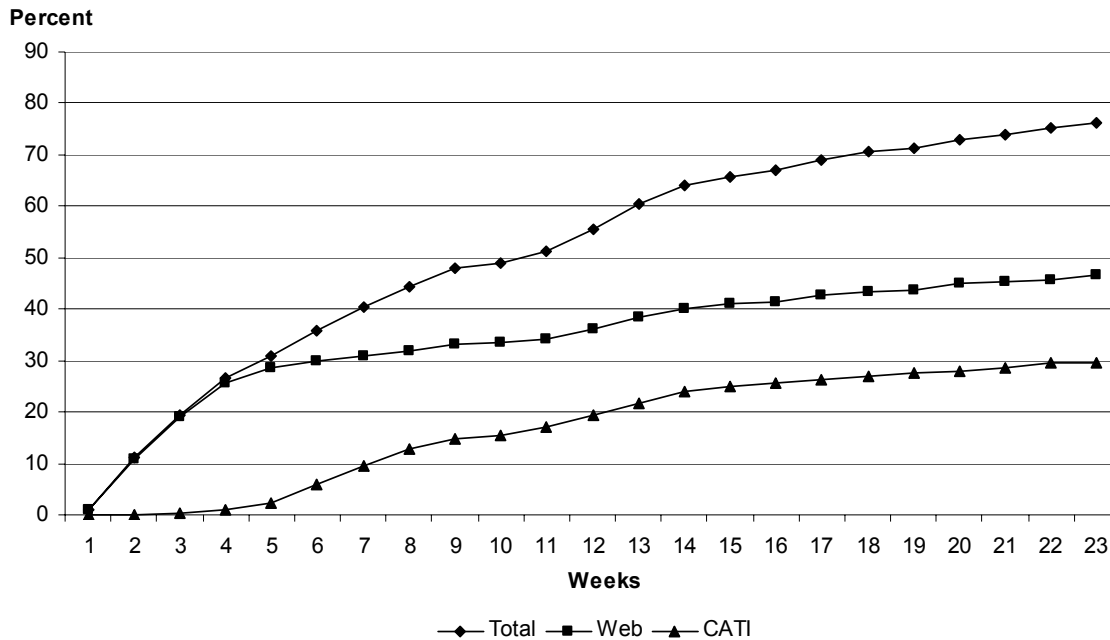
¹Percentages are based on the number of eligible sample members within the row under consideration.

²Percentages are based on the number of completed interviews within the row under consideration.

NOTE: All percentages are unweighted. Reporting excludes 27 cases determined to be ineligible for study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Sixty-seven percent of full-time faculty completed the self-administered survey, compared to 54 percent of part-time faculty. Seventy percent of faculty and instructional staff at private not-for-profit institutions completed the self-administered survey, compared to 57 percent of faculty at public institutions. Web survey completion rates by institution type ranged from 39 percent for public baccalaureate degree-granting schools to 80 percent for private not-for-profit associate's degree-granting schools. The cumulative response rate, overall and by mode, is shown in figure 3.2.

Figure 3.2 Cumulative response rates, by mode of completion: 2003

NOTE: Mode of completion for respondents who switched modes was determined by the mode at the time of survey completion.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

3.2.3 E-mail Contacting Efforts

Valid e-mail addresses were available for 765 of the 1,197 eligible sample members. E-mail addresses of faculty and instructional staff were requested in the faculty lists. Where e-mail addresses were not provided by the institution, help desk staff searched the institution's online directory for e-mail addresses of sample members. In addition, some sample members provided e-mail addresses when contacted by a telephone interviewer. If an e-mail message to a sample member was returned as undeliverable, it was not considered to be a valid e-mail address for the purpose of this analysis.

Periodically throughout the data collection period, e-mail messages were sent to nonrespondents for whom we had e-mail addresses to encourage their participation (see appendix D). Sample members for whom we had valid e-mail addresses were more likely to complete the survey (80 percent) compared to sample members to whom no e-mail reminders were sent (69 percent; $\chi^2=18.8, p<0.0001$). Respondents with valid e-mail addresses were more likely to complete the self-administered web questionnaire (67 percent) than were respondents who did not receive e-mail reminders (49 percent; $\chi^2=27.8, p<0.0001$).

3.2.4 Refusal Conversion Efforts

Refusal conversion measures were used to gain cooperation from individuals who refused to participate when contacted by telephone interviewers. Refusals came not only from sample members, but also occasionally from other household members. Whenever a refusal was encountered, unless it was deemed hostile, the case was referred to a specialist trained in refusal

conversion techniques. Refusal conversion specialists were chosen based on their performance as interviewers, with those who were the most skilled in obtaining cooperation given additional training in converting refusals. This training was tailored to the concerns of faculty members and gatekeepers regarding participation, and focused on gaining cooperation, and encouraging participation.

Fourteen percent of contacted cases (n=149) refused to participate at some point during data collection. However, nearly one-fifth (18 percent, n=27) of these cases were successfully converted and eventually completed the survey. Sixteen of these cases completed the survey by web and 11 cases completed by telephone.

3.2.5 Incentive Experiment Results

As discussed in chapter 2, the incentive experiment assessed three hypotheses (see chapter 2 for greater detail on the experiment design):

Hypothesis I: Incentives increase the response rate during the initial phase of data collection (phase I) and promote a higher rate of web-based responses.

Hypothesis II: Incentives increase the completion rate during the nonresponse follow-up phase of CATI data collection (phase III).

Hypothesis III: A higher amount of incentive increases the response rate more than a lower amount.

The results of each phase of the experiment are discussed below.

Analysis of Phase I Data

All faculty members were partitioned into the three early-response treatment groups. As described in chapter 2, those in the first treatment group (ER1) were offered no incentive, while those in the second (ER2) and third (ER3) treatment groups were offered \$20 or \$30, respectively, to complete the survey within 3 weeks of receiving their invitation letters. Table 3.13 shows the distribution of the eligible respondents and nonrespondents for the first phase of the experiment and the response rates achieved in phase I.

Table 3.13 Faculty distribution and response rates for phase I (faculty in groups ER2 and ER3 were offered incentives): 2003

Treatment group (early response), and incentive amount offered	Total	Respondent	Nonrespondent	Response rate (percent)
Total	1,197	324	873	27.1
ER1 (\$0)	402	66	336	16.4
ER2 (\$20)	391	120	271	30.7
ER3 (\$30)	404	138	266	34.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

These results indicate that incentive use nearly doubled the response rate during the early response period; approximately 16 percent of those who were not offered an incentive completed

the questionnaire compared with 32 percent of those who were offered an incentive. Significant differences were found between the no incentive group (ER1), with 16 percent response, and both the \$20 (ER2) and \$30 (ER3) incentive groups, with 31 percent and 34 percent response, respectively ($p < 0.0001$). However, the difference between the \$20 and \$30 incentive, although in the expected direction, was not statistically significant.²² While this difference is directionally in support of the third hypothesis, there is not enough evidence to conclude that an increase in the incentive amount significantly increased the response rate of faculty members during the first phase.

Analysis of Phase II Data

Attempts were made to complete as many surveys as possible during the second phase of data collection without offering any incentives. For this purpose, all nonrespondents from the first phase were contacted by telephone and asked to complete the survey, either on the phone or via the web at their convenience. Table 3.14 shows the distribution of the respondents and nonrespondents for the second phase of the experiment. (The classification is based on the amount offered during the first phase of the experiment even though no one was actually offered an incentive during this phase [i.e., phase II].)

Table 3.14 Faculty distribution and response rates for phase II (no-incentive phase), by phase I incentive groups: 2003

Treatment group (early response), and incentive amount offered	Total	Respondent	Nonrespondent	Response rate (percent)
Total	873	296	577	33.9
ER1 (\$0)	336	109	227	32.4
ER2 (\$20)	271	91	180	33.6
ER3 (\$30)	266	96	170	36.1

NOTE: In phase II, computer-assisted telephone interviewing began; no one was offered incentives.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

No significant differences in response rates during the second phase were detected between those who *were* offered incentives during the first phase and those who were *not* (35 percent vs. 32 percent, respectively). This finding suggests that no residual effects were carried over from the first phase to the second phase. That is, having been offered an incentive during the first phase had no significant effect on response rates during the second phase when no one was offered any incentives.

Analysis of Phase III Data

At the start of the third phase, the remaining nonrespondents were contacted by telephone for nonresponse follow-up. Those who were pre-assigned to the CATI nonresponse follow-up treatment group NF1 were offered no incentive, while those in treatment group NF2 were offered \$30 to complete the survey. Table 3.15 shows the distribution of the resulting respondents and nonrespondents for the third phase of the incentive experiment.

²² Simple tests of significance for two population proportions have been used to assess the stated hypotheses.

Table 3.15 Faculty distribution and response rates for phase III: 2003

Treatment group (nonresponse follow-up), and incentive amount offered	Total	Respondent	Nonrespondent	Response rate (percent)
Total	577	233	344	40.4
NF1 (\$0)	288	98	190	34.0
NF2 (\$30)	289	135	154	46.7

NOTE: Faculty in group NF2 were offered an incentive.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Accordingly, 98 of the 288 faculty who were not offered an incentive responded to the survey during the third phase (34 percent), while 135 of the 289 faculty who were offered the incentive responded to the survey during this phase (47 percent). The observed difference of 13 percentage points was statistically significant ($p < 0.002$). Comparing the distribution of these faculty members with respect to their phase I incentive categories, there was no significant interaction between phase I and phase III incentive groups ($p < 0.07$). This suggests that the effect of the incentive during phase III is independent of incentive offerings during the first phase of the experiment.

3.3 Burden and Effort

3.3.1 Faculty Survey Completion Timing

Like the institution timing analysis, the faculty timing analysis was conducted by embedding time stamps in the programming code for each form (screen) in the survey. From these time stamps, the number of seconds spent on each screen (on-screen time) and the transit time between screens (i.e., the time required to transmit data to the server, the time for the server to store the data and assemble the next page, and the time for the page to be transmitted and loaded on the computer) were calculated. A cumulative on-screen time and a cumulative transit time for the faculty survey also were calculated from the time stamps. The sum of the cumulative on-screen and transit times was the total instrument time—that is, the number of minutes it took to administer the questionnaire.

Following the 1999 cycle of NSOPF—which averaged over 50 minutes—the faculty questionnaire was shortened substantially, with a goal of achieving a 30-minute survey. Based on the time stamps for each form, the time to complete the entire survey ranged from 9 minutes to 2 hours and 12 minutes, with an average time of 42 minutes.²³ Of these 42 minutes, approximately 35 minutes, on average, were spent answering questions (on-screen time) and 7 minutes, on average, were spent saving data and loading forms (transit time).

Table 3.16 presents the overall timing data by mode. Average on-screen time was significantly longer for CATI respondents than for web respondents (38 minutes and 34 minutes, respectively; $t = -3.67$, $p < 0.001$), while the average transit time was significantly shorter for CATI respondents than for web respondents (4 minutes and 9 minutes, respectively; $t = 13.26$,

²³This total time includes all screens in the survey—i.e., Q1 through Q84—plus the screens that collected the contact information for the incentive payment and the reinterview. No timing data are available for the informed consent screens.

$p < 0.0001$). The longer on-screen time for CATI respondents presumably is because it takes longer to read text out loud and the respondent may ask questions. The shorter transit time for CATI is likely due to the use of a high-speed Internet connection by interviewers. Some web respondents may have used a slower dial-up connection, which would tend to increase their transit time. There was no significant difference in total survey time by mode.

Table 3.16 Average on-screen, transit, and total survey completion time, in minutes, for the field test faculty questionnaire, by mode: 2003

Portion of interview	All respondents		Web respondents		CATI respondents	
	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases
Total	42.2	891	42.6	543	41.7	348
Onscreen	35.5	908	34.2	555	37.6	353
Transit	7.2	891	9.0	543	4.4	348

NOTE: Three on-screen time outliers and one transit time outlier were topcoded to the upper limit. In addition, 17 cases with invalid transit times were removed from the calculation of average transit time and average total time. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The transit times were significantly longer for surveys that were completed during business hours (Monday through Friday, 9:00 am – 6:00 pm) compared to those completed during evening and weekend hours (7.5 and 6.8 minutes, respectively; $t = -2.02$, $p < 0.05$.), as shown in table 3.17. This is likely due to heavier Internet traffic during business hours.

Table 3.17 Average on-screen, transit, and total completion time, in minutes, by time of day and mode: 2003

Portion of interview	Web respondents				CATI respondents			
	Weekdays 9am–6pm		Evenings/ weekends		Weekdays 9am–6pm		Evenings/ weekends	
	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases
Total	41.8	301	43.6	242	45.1	186	37.7	162
Onscreen	34.0	311	34.4	244	39.5	189	35.5	164
Transit	8.6	301	9.5	242	5.8	186	2.8	162

NOTE: Three on-screen time outliers and one transit time outlier were topcoded to the upper limit. In addition, 17 cases with invalid transit times were removed from the calculation of average transit time and average total time. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Eight forms (screens) in the faculty survey took more than 1 minute to administer, on average. These tended to be the more complicated forms and those that requested more information—often containing several items on the same screen or complex online coding. The average and maximum times (in seconds) to complete these forms are presented in table 3.18. The forms are described in greater detail in the text that follows table 3.18.

Table 3.18 Average and maximum completion time, in seconds, for forms averaging more than 1 minute to complete: 2003

Questionnaire form	Description	Time (seconds)		Number of cases
		Average	Maximum	
Q17A4	Highest degree institution	62	323	844
Q31	Hours worked per week	81	454	914
Q32	Percentage distribution of work activities	63	353	914
Q34	Percentage other (noninstruction, nonresearch) time	82	428	722
Q37	Number and types of classes taught (up to eight classes)	101	532	796
Q38	Student evaluation tools (Tools instructors use to evaluate students—essay exams, etc.)	76	382	736
Q52A	Career publications/presentations	77	514	911
Q66	Income: from institution/other sources	102	573	908

NOTE: The number of cases per form varies due to the interview skip logic. Outliers for each form were topcoded to the upper limit for that form.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Q17A4. The Integrated Postsecondary Education Data System (IPEDS) coding form, used to code respondent highest degree information (Q17A4), took slightly more than 1 minute to administer, on average. This screen required input of the state and city in which the school was located, followed by a computer search to identify the schools in that location. The form presented the list of possible schools, from which the respondent or interviewer selected the correct one. Web respondents took significantly longer to complete this form (75 seconds) than CATI respondents (43 seconds; $t=11.23$, $p<0.0001$). This time difference reflects a learning curve associated with the IPEDS coding. The telephone interviewers were familiar with how these screens worked and did not have to read the instructions.

Q31, Q32, and Q34. The series of questions that asked for the number of hours per week spent on work activities, Q31 (broken down into paid and unpaid activities at the target institution and outside that institution), and the percentage distribution of work activities, Q32 and Q34, took 81, 63, and 82 seconds, respectively, to administer. Each of these took longer when administered by telephone interviewers than when self-administered via the web instrument. Q31 averaged 74 seconds for web respondents compared with 92 seconds for CATI respondents ($t=-5.09$, $p<0.0001$). Web respondents averaged 60 seconds on Q32 compared with 70 seconds for CATI respondents ($t=3.35$, $p<0.001$). On Q34, web respondents took 75 seconds, on average, compared with 93 seconds for CATI respondents ($t=-4.10$, $p<0.0001$). The complexity of these questions may have led to the longer times for CATI administration, as respondents often asked interviewers to repeat the question and examples, and asked questions about the appropriate category for certain types of activities.

Q37 and Q38. Two consecutive forms, Q37 and Q38, asked for a great deal of information on a single screen. Q37 asked six questions about each of the credit classes (up to eight) the respondent taught. This form took 101 seconds, on average, to administer. There was no difference in time by mode of administration. Q38 asked respondents to identify which of 10

different types of student evaluation tools were used in their classes and whether they were used in all, some, or none of the classes. This form took an average of 76 seconds to administer, with CATI respondents taking significantly longer than web respondents (98 and 62 seconds, respectively, $t = -12.43$, $p < 0.0001$).

Q52A. Q52a, which asked for the number of career publications or presentations in seven categories, took an average of 77 seconds to complete. This may have required respondents to locate their curricula vitae and count the number of publications. There was no difference by mode in time to administer this form.

Q66. The form asking about respondents' compensation from the target institution and from other sources, Q66, took 102 seconds to complete, on average. This form consisted of six income questions, which were considered to be among the most sensitive items in the questionnaire. Average time to complete this form was shorter for web respondents (98 seconds) than for CATI respondents (108 seconds; $t = -2.11$, $p < 0.05$).

3.3.2 Help Desk

In order to gain a better understanding of the problems encountered by faculty members attempting to complete the survey over the web, software was developed to record each help desk incident that occurred during data collection. For each occurrence, help desk staff confirmed contact information for the sample member, recorded the type of problem, described the problem and resolution, noted its status (pending or resolved), and recorded the approximate time it took to assist the faculty member. Help desk staff were trained not only to answer any calls received from the help desk hotline, but also to conduct telephone interviews when needed. Help desk staff members assisted sample members with questions about the web instrument and provided technical assistance to sample members who experienced problems while completing the self-administered web survey. Help desk agents also responded to voice mail messages left by respondents when the call center was closed.

Help desk staff assisted 184 faculty members (15 percent of the sample). Eighty-two percent of these cases called the help desk only once, while 14 percent called in twice, and 4 percent called in three times. Of the 184 faculty members who called the help desk, 151 (82 percent) eventually completed the survey.

Thirty-eight percent of the problems reported by faculty members who called the help desk were for miscellaneous issues (see table 3.19). The most frequent miscellaneous incident reported was sample members requesting to complete the survey by telephone (41 percent of miscellaneous cases). Other problems reported to the help desk included questions about the study (22 percent), requests for study ID and/or password (19 percent), browser setting and computer problems (8 percent), website being down or unavailable (6 percent), questions about questionnaire content (4 percent), and errors in questionnaire programming (3 percent).

Table 3.19 Response pattern, by help desk problem type: 2003

Type of problem	Number	Percentage
Total	225	100.0
Miscellaneous (including asking to complete the survey by phone)	85	37.8
Question about study	49	21.8
Study identification (ID) code/password	43	19.1
Browser settings/computer problems	18	8.0
Website unavailable	14	6.2
Questionnaire content	9	4.0
Program error	7	3.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

3.3.3 Interviewer Hours

Telephone interviewing staff hours (including help desk staffing, telephone follow-up calls, and CATI interview hours) for the NSOPF:04 field test required 1,563 hours. These hours do not include supervision, monitoring, administration, and Quality Circle meetings. The average time spent per completed CATI interview was 4 hours and per completed interview overall (including web completes) was 1.7 hours. The average time to administer the CATI interview was 42 minutes, which shows that a majority of interviewer time was spent on other activities. These other activities focused on contacting and locating the sample member, with a small portion of time devoted to bringing up a case, reviewing its history, and closing the case (with the appropriate reschedule, comment, and disposition). A significant proportion of the web completes occurred after the period of telephone follow-up began, and were completed only after several CATI follow-up calls had been made to the respondent.

3.3.4 Number of Calls

Telephone interviewers made 18,342 call attempts to faculty members during the NSOPF:04 field test data collection period (see table 3.20). The number of calls per case ranged from 0 to 182. On average, 15 calls²⁴ were made to each sample member. The largest average numbers of calls were made to those who were not interviewed. Among completed cases, an average of 9 call attempts were required, while the average for nonrespondents was 32 call attempts ($t=10.32$, $p<0.0001$). Faculty members who completed the questionnaire over the web were called significantly fewer times, with an average of 7 call attempts per completed survey, compared to an average of 12 calls to CATI respondents ($t= -4.62$, $p<0.0001$).

²⁴This figure includes cases where no call attempts were made, either because the respondent completed the questionnaire via the web before CATI calling began, or the individual could not be located.

Table 3.20 Total and average number of calls, by completion status and mode of completion: 2003

Completion status/mode	Number of cases	Number of calls	Average calls per case
Total	1,224	18,342	15.0
Interviewed	914	8,340	9.1
Not interviewed	310	10,002	32.3
By mode	914	8,340	9.1
Web complete	559	3,967	7.1
Computer-assisted telephone interview complete	355	4,373	12.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Call screening is a growing problem for studies that rely on the telephone as a mode of contact. Devices such as telephone answering machines can be used to screen unwanted calls. Of the 848 cases called by telephone interviewers,²⁵ 697 cases (82 percent) reached an answering machine at least once (see table 3.21). Interviewers made significantly more calls to cases where an answering machine had been reached at least once (mean attempts=25), compared to cases where no answering machine was reached (mean attempts=8; $t = -10.00, p < 0.0001$). Likewise, cases where an answering machine had been reached at least once were less likely to have completed the interview (65 percent) than cases where no answering machine was reached (75 percent; $\chi^2 = 5.4, p < 0.02$).

Table 3.21 Average call attempts, by reached answering machine: 2003

Result of call attempt	Cases called in CATI		Completed cases	
	Number of cases	Average number of calls	Number of cases	Average number of calls
Reached answering machine at least once	697	24.7	453	16.5
Never reached an answering machine	151	7.5	113	7.8

NOTE: Excludes 337 completed cases that were never called by telephone interviewers because they completed the self-administered questionnaire during or soon after the early response period of data collection. Some of the 848 cases called by telephone interviewers actually completed the web self-administered questionnaire.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Looking only at completed cases, significantly fewer calls were required to obtain a completed interview when no answering machine was reached (mean attempts=8) compared to cases in which an answering machine was reached at least once (mean attempts=16, $t = -4.52, p < 0.0001$). Those who possessed answering machines were included in the survey definition of “accessible”; however, it took considerable persistence and resources (in the form of repeated call attempts) to reach these faculty members. This finding demonstrates that answering machines and other call screening devices are increasing the effort that must be expended to reach these cases, thereby driving up interviewing costs.

²⁵An additional 337 cases were never called by telephone interviewers because they completed the self-administered questionnaire during or soon after the early response period of data collection. Some of the 848 cases called by telephone interviewers actually completed the web self-administered questionnaire.

3.4 Discussion

The response rates to the field test, while useful for planning for the full-scale study, must be interpreted with caution due to some important differences between the NSOPF:04 field test and full-scale studies. Some of these factors will make the data collection for the full-scale study more difficult, and others may make it easier. While the field test response rates give some indication of what to expect on the full-scale study, fundamental differences, outlined below, limit the generalizability to the full-scale study.

- The full-scale NSOPF:04 will not have the complete sample at the start of data collection, due to the anticipated number of late lists. (Early institution contacting is expected to reduce the percentage of late lists from that experienced in earlier NSOPF cycles, but it will not eliminate them.) The field test sampled faculty from the first one-half of the lists received and hence had a full sample in January at the start of faculty data collection.
- The full-scale data collection period is scheduled to last 2 months longer than the field test 5-month period (until August 30, while the field test ended on June 30).
- The full scale study plans to offer the early response and nonresponse incentives to all respondents, whereas the field test had several experiments in which randomly selected subsamples were offered no incentives and two amounts.
- The field test sample did not include faculty from doctoral granting institutions who might be expected to use the web option the most frequently and who traditionally have responded at higher rates on previous cycles of NSOPF.

Chapter 4

Evaluation of Data Quality

Evaluations of data quality serve to identify problems with the data collection processes and instruments. In preparation for the full-scale 2004 National Study of Postsecondary Faculty (NSOPF:04), project staff evaluated faculty list quality, item nonresponse, item reliability, inter-item consistency, item mode effects, breakoffs, help text usage, coding, quality control monitoring of interviewers, respondent feedback, and interviewer feedback. The results of these evaluations are presented in this chapter and were used to inform instrument design for the full-scale study.

4.1 List Quality

Faculty lists were evaluated based on the quality and quantity of their contents. That is, lists had to be readable and contain the needed information for sampling. Table 4.1 provides a summary of the condition of lists received, by institution type.

Table 4.1 Condition of lists, by type of institution: 2003

Institution type	Total	Provided list	Unreadable	Insufficient information	
				Sampling ¹	File layout ²
Total	150	134	2	36	67
Public master's	25	23	0	3	10
Public baccalaureate	6	6	1	1	4
Public associate's	58	50	1	15	23
Public other/unknown	5	4	0	1	4
Private not-for-profit master's	26	24	0	8	17
Private not-for-profit baccalaureate	21	18	0	5	5
Private not-for-profit associate's	3	3	0	1	2
Private not-for-profit other/unknown	6	6	0	2	2

¹"Sampling" refers to not having received a piece of information required for sample selection, such as race or gender.

²"Layout" means the file layout was not received.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

A number of conditions had to be satisfied before a submitted list could pass basic quality control checks. List quality was checked by comparing counts obtained from tallied faculty lists against those obtained from four supplementary sources, namely the institution questionnaire, the 2001 IPEDS Fall Staff Survey,²⁶ the Contact Information and File Layout form (which included

²⁶ IPEDS data used in the field test were from a different academic year and IPEDS uses a different definition of faculty than does NSOPF. The 2001 IPEDS Fall Staff Survey classified staff as to primary duties while NSOPF

faculty counts), and frame data from the NSOPF:99 survey. Discrepancies in counts of full-time and part-time faculty on the tallied faculty lists and the supplemental sources that were outside the expected range were investigated.

All institutions with submitted lists that failed any checks were recontacted to resolve the observed discrepancies. Virtually all IPEDS-related discrepancies were found to be caused by definitional and coverage differences between IPEDS and NSOPF. Cognizant of such differences, these checks were put in place to catch major list problems (e.g., inadvertent reversal of part-time and full-time faculty counts by institutions). Upon recontacting institutions, lists confirmed to be correct and those whose problems were resolved (through resubmission or in-house correction) were allowed to proceed to the sampling stage. Specifically, 10 of these 30 lists were confirmed to be correct by their corresponding institutions, 13 problem lists were resolved, and 7 remained with a failed status at the end of the contact period. These seven institutions were not from any specific institution type.

Discrepancies between tallied list counts and those reported via institution questionnaires were deemed more problematic. Consequently, a more stringent set of comparison checks were devised for this purpose. All institutions for which their tallied faculty list and institution questionnaire counts were discrepant beyond the thresholds were recontacted to resolve the observed discrepancies. Again, many of these discrepancies were removed after the corresponding institutions confirmed the correctness of their submitted lists (12 out of 36). A number of institutions had to resubmit new lists or provide additional information to correct the problem (17 of 36). At the end of contact period, seven lists remained with a failed tallied faculty list versus institution questionnaire counts status.

To quantify the extent of the observed discrepancies, various diagnostic measures were produced to capture the relative difference in faculty counts between tallied lists and the supplemental sources. As shown in table 4.2, of the 150 institutions that provided lists of faculty, 36 failed the checks established for comparison against their institution questionnaires.

Table 4.2 Discrepancies encountered between tallied faculty list counts and institution questionnaire counts, by type of institution: 2003

Institution type	Sampled institutions	Number out of bounds
Total	150	36
Public master's	25	5
Public baccalaureate	6	2
Public associate's	58	13
Public other/unknown	5	2
Private not-for-profit master's	26	6
Private not-for-profit baccalaureate	21	6
Private not-for-profit associate's	3	1
Private not-for-profit other/unknown	6	1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

eligibility requirements include all staff who have faculty status or who have instructional duties. Hence, the range of acceptable difference between the tallied faculty list counts and IPEDS counts was intentionally broad.

Tables 4.3 and 4.4 give the distribution of the relative percentage discrepancy between institution questionnaire counts and the tallied list counts for part-time and full-time faculty, respectively. The relative percentage discrepancy is measured as the difference between institution questionnaire and tallied list counts of faculty divided by the tallied list counts of faculty.²⁷ For instance, 62 percent of institutions provided questionnaires that had a relative percentage discrepancy of 0 with tallied lists for part-time faculty, and 86 percent were between + or – 25 percent of each other (table 4.3). Fifty-eight percent of institutions provided questionnaires that had a relative percentage discrepancy of 0 with tallied lists for full-time faculty and 89 percent were between + or – 25 percent of each other (table 4.4)

Table 4.3 Number and percentage distribution of institutions by relative percentage discrepancy between institution questionnaire and tallied list counts for part-time faculty at the institutions, by institution type: 2003

Institution type	Number of institutions	Relative percentage discrepancy (percent)							
		< -50	-50 to -26	-25 to -1	0	1 to 25	26 to 50	> 50	
Total	118	4	3	12	62	12	3	4	
Public master's	22	5	0	18	68	9	0	0	
Public baccalaureate	6	0	17	0	50	33	0	0	
Public associate's	45	2	2	14	66	11	2	2	
Public other/unknown	2	0	50	0	0	50	0	0	
Private not-for-profit master's	19	11	0	11	56	11	0	11	
Private not-for-profit baccalaureate	17	6	0	12	59	12	6	6	
Private not-for-profit associate's	3	0	0	0	67	0	33	0	
Private not-for-profit other/unknown	4	0	0	0	75	0	0	25	

NOTE: Detail may not sum to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Table 4.4 Number and percentage distribution of institutions by relative percentage discrepancy between institution questionnaire and tallied list counts for full-time faculty at the institutions, by institution type: 2003

Institution type	Number of institutions	Relative percentage discrepancy (percent)							
		< -50	-50 to -26	-25 to -1	0	1 to 25	26 to 50	> 50	
Total	118	5	2	19	58	12	4	0	
Public master's	22	0	0	18	64	9	9	0	
Public baccalaureate	6	0	0	33	17	17	33	0	
Public associate's	45	5	0	27	57	9	2	0	
Public other/unknown	2	0	50	50	0	0	0	0	
Private not-for-profit master's	19	11	0	17	61	11	0	0	
Private not-for-profit baccalaureate	17	6	6	0	65	24	0	0	
Private not-for-profit associate's	3	33	0	0	67	0	0	0	
Private not-for-profit other/unknown	4	0	0	0	75	25	0	0	

NOTE: Detail may not sum to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

²⁷ It should be noted that the reported percentages in tables 4.3 and 4.4 are based on very small sample sizes and can provide only directional information.

Because of small sample sizes, it is impossible to detect specific patterns or differences that allow classifications of institutions with respect to specific list problems. Nonetheless, the following anecdotal observations are provided based on review of the field test tallied faculty lists in comparison with supplemental sources.

- As expected, due to definitional differences IPEDS counts were often smaller than those obtained from the institution questionnaire or tallied faculty lists. This shortage was more pronounced for part-time faculty.
- Institution questionnaire and tallied faculty list counts were relatively more consistent with each other, with 89 percent being within + or – 25 percent of each other for full-time faculty and 86 percent for part-time faculty.

4.2 Institution Questionnaire Data Quality

4.2.1 Item Nonresponse

Recent studies (for example, DeRouvray and Couper 2002) using web self-administered questionnaires have shown higher than usual rates of missing data when the “refuse” and “don’t know” options were available on screen. Thus, to limit the rate of nonresponse in the institution instrument, the refusal option was not available to respondents and the “don’t know” option was limited to selected screens where the respondent might not know the answer. Respondents who wished to decline to answer a question were instructed (on the information page at the start of the questionnaire) to click the “continue” button to proceed to the next question without answering. The exception to this rule was the first item in the institution questionnaire, the count of full- and part-time faculty and instructional staff employed by the institution. This item was critical in determining the path through the interview; hence, if it were left blank, a warning box appeared explaining the importance of the question and the necessity of providing an answer in order to continue the questionnaire.

Only 2 of 83 items in the questionnaire contained more than 10 percent missing data. These items are shown in table 4.5. Item nonresponse rates were calculated based on the number of sample members asked the question.

Table 4.5 Institution questionnaire items with more than 10 percent missing data: 2003

Item	Description	Percentage of responses missing
19C	Undergraduate instruction: number of teaching assistants	21.9
19D	Undergraduate instruction: number of others not covered by the listed categories of staff	23.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Form (screen) 19 of the institution questionnaire asked respondents to allocate the percentage of undergraduate instruction taught by (1) full-time faculty (item 19A), (2) part-time faculty (item 19B), (3) teaching assistants (item 19C), and (4) others, such as nonfaculty administrators (item 19D). The screen required answers to sum to 0 or 100 percent before the respondent could leave the screen. Blank responses were allowed and assumed to be zero when sums were calculated. Nonresponse to parts 3 (percentage of undergraduate instruction assigned

to teaching assistants) and 4 (percentage of undergraduate instruction assigned to others) had 22 and 24 percent missing, respectively. However, most of these cases with missing data summed to 100 percent on the remaining responses, suggesting that the missing data could safely be imputed to zero. Doing so should reduce the rate of missing data for these two items to 4 and 5 percent, respectively.

A “don’t know” response option was available for 35 items in the institution questionnaire to which “don’t know” was deemed a legitimate answer. These items had to do with availability of benefits to full-time and part-time faculty and instructional staff and the use of various tools for evaluating teaching assessment.

The rate of “don’t know” responses was more than 10 percent for four of these items, all having to do with teaching assessment, as shown in table 4.6. These high rates of “don’t know” responses for these items—11 percent for student test scores (for assessing full-time faculty), 21 and 17 percent for other measures of student performance (for assessing both full-time and part-time faculty, respectively), and 11 percent for self-evaluations (for assessing part-time faculty)—suggest that there may not be institutional standards regarding what is and what is not used to evaluate faculty in various departments. For other measures of student performance, respondents may have been unclear what measures might be included in this category.

Table 4.6 Institution questionnaire items with more than 10 percent “don’t know” data: 2003

Item	Description	Percent “don’t know”
13B	Full-time faculty assessment: student test scores	11.4
13D	Full-time faculty assessment: other student performance (i.e., performance evaluated via other means not listed)	21.1
18D	Part-time faculty assessment: other student performance (i.e., performance evaluated via other means not listed)	16.7
18H	Part-time faculty assessment: self-evaluations	10.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

4.2.2 Respondent Feedback

Individuals completing the institution questionnaire were given the opportunity to provide feedback on form (screen) 20. This open-ended question at the end of the questionnaire asked for comments, suggestions, or concerns about data collection that would be used to improve data collection procedures—in particular, to update the institution questionnaire for the full-scale study.

Of the 114 institutions responding to the institution questionnaire, 21 (18 percent) provided comments. Several of these institutions provided multiple comments. A total of 29 comments were evaluated and categorized by type of comment, as shown in table 4.7. The most common types of comments were suggestions and clarifications about specific items in the questionnaire as well as complaints about the slow response time of the web, difficulties accessing the web questionnaire, the instrument “timing out,” and the time it took to compile the requested information. Other respondent comments included additional information about who provided answers (the last screen also collected contact information for the respondent), pointed out inconsistent definitions and inconsistencies between the hardcopy and web questionnaires, and complimented the edit checking and ease of data collection.

Table 4.7 Summary of respondent comments on the institution questionnaire, by category: 2003

Comment category	Number	Percent
Total	29	100.0
Specific interview items	7	24.1
Interview length, load time, and web issues	7	24.1
Contact and source information	5	17.2
Consistency with hardcopy questionnaire	4	13.8
Positive comments	2	6.9
Miscellaneous	4	13.8

NOTE: Percentages may not sum to total due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

4.3 Faculty Data Quality

4.3.1 Reliability of Responses

The temporal stability of a subset of interview items from the faculty instrument was evaluated through a reinterview. A subset of 26 interview items was selected for this assessment, targeting items newly designed for the NSOPF:04 interview or items revised since their use in a previous NSOPF interview. The items selected for the reinterview were factual in nature rather than attitudinal. The reinterview also provided an opportunity to test for differences across mode of administration—that is, to determine whether the temporal stability of responses was the same for those who completed the telephone interview and those who completed the web self-administered interview. The reinterview was administered in the same mode as the initial interview.

A random sample of 75 web respondents and 77 computer-assisted telephone interview (CATI) respondents was selected to participate in the reinterview process. The overall response rate was 74 percent. Of the web respondents selected for the reinterview, 53 completed the reinterview and 2 completed part of the reinterview, representing a response rate of 73 percent. Fifty-eight of the CATI respondents (75 percent) completed the reinterview. The timing of data collection appears to have hampered the response rates for the reinterview. The reinterview took place at least 4 weeks after the initial interview, which, for many respondents, was after the end of their institution's academic year. To increase the response rate, respondents in the final weeks of data collection were offered a \$15 incentive to complete the reinterview.

Responses to items in both the initial interview and the reinterview were compared using two measures of temporal stability for all paired responses. The first, *percent agreement*, was based on an exact match between categorical variables. For continuous variables, responses were considered to match when their values fell within one standard deviation unit of each other.²⁸ The second measure evaluated temporal stability using Cramer's V, Kendall's tau-*b* (τ_b), or the Pearson product-moment correlation coefficient (*r*). Cramer's V statistic was used for items with discrete, unordered response categories (e.g., yes/no responses). Kendall's tau-*b* (τ_b), which takes into account tied rankings,²⁹ was used for questions that were answered using

²⁸ This is equivalent to within one-half standard deviation of the average (best estimate of actual value) of the two responses.

²⁹ See, for example, Agresti (1984) and Kendall (1945).

ordered categories (e.g., number of classes taught). For items yielding interval or ratio scale responses (e.g., income), the Pearson product-moment correlation coefficient (r) was used. Lack of agreement or a low relational statistic value for responses typically reflects instability over short time periods due to measurement error.³⁰ To the extent this occurs, items should be deleted or revised for the full-scale interview. Conversely, high indices of agreement suggest the interview responses were relatively free of measurement errors that could cause response instability over short periods of time.

Effective sample sizes are presented for all results because analyses were restricted to cases with determinate responses for an item in both interviews. Sample sizes vary because not all items were applicable to all respondents (e.g., numbers of refereed and nonrefereed publications in the past 2 years were asked only of those who reported having refereed and nonrefereed publications during their career).

Employment

The results of the reinterview analyses for the employment items are presented in table 4.8. Percent agreement for these items ranged from 70 to 99 percent and was over 96 percent for all but one item. The relational statistics ranged from 0.66 to 0.98. There were no statistically significant modal differences in percent agreement for the employment items.

The first question of the interview, Q1, asked respondents whether they had instructional duties at the school in question. Although this item had not been revised for this cycle of NSOPF, it was included in the reinterview because it was an essential item for eligibility determination and was necessary to set the context for the second question. This item had 96 percent agreement and the relational statistic was 0.66. Very few respondents reported not having instructional duties, which may have skewed the results of the relational statistic. Ninety-six percent of the respondents indicated they had instructional duties in the initial interview, and 97 percent of those provided the same response during the reinterview.

³⁰ A skewed distribution of responses may, in some cases, result in a low relational statistic. Similarly, if the number of cases is small, the percent agreement and relational statistic should be interpreted with caution.

Table 4.8 Reliability indices for employment: 2003

Item	Description	Number of cases ¹	Percent agreement ²	Relational statistic ³
Q1	Instructional duties, Fall 2002	113	96.5	0.66 ⁴
Q2	Instructional duties related to credit courses/ activities	104	97.1	0.79 ⁴
Q5	Employed full or part time, Fall 2002	111	99.1	0.98
Q16CD4	Principal field of teaching—Classification of Instructional Programs (CIP) code 4	108	70.4	0.89

¹Analyses were conducted only for respondents with determinate responses on both the initial interview and the reinterview; not all questions were applicable to all respondents.

²This percentage reflects an exact match of the paired responses.

³Cramer's V statistic was used.

⁴This relational statistic appears to be deceptively deflated due to insufficient variation across valid response categories. As a result, minor changes in the distribution of responses between the initial interview and reinterview tend to lower the correlation coefficient.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The follow-up question, Q2, determined whether any of these instructional duties were for credit. This item was included in the reinterview because the question wording and response options had been revised considerably from prior NSOPF interviews. It had 97 percent agreement and a relational statistic of 0.79. Again, the skewed distribution, with 93 percent of respondents indicating the instructional duties were for credit, may have been the cause of the lower relational statistic.

The question of part-time or full-time employment status, Q5, was included because it was considered to be a critical piece of information in the interview. This item had 99 percent agreement and a relational statistic of 0.98. Only one respondent reported a different status between the two interviews.

The final employment items included in the reinterview had to do with the principal field of teaching. The verbatim string was collected (to set the context in the reinterview), but not analyzed. It was then coded into a general area and a specific discipline, provided in drop-down boxes (Q16CD4). This system of coding was revised from earlier NSOPF interviews due, in part, to the change in mode of administration. To have an exact match, responses needed to agree on both general area and specific discipline. They did so for 70 percent of respondents. An additional 16 percent matched on general area but not on specific discipline. The relational statistic was 0.89.

An examination of the verbatim strings and codes for cases that did not match on general area between the two interviews revealed that about one-half of the fields of teaching could fit into multiple categories; did not fit perfectly into a category; or were unclear as to the appropriate category, judging from the general descriptions (e.g., English as a second language was coded into general categories of English, education, and foreign language). About one-quarter of respondents chose the “other” general category in one of the two interviews, despite having coded their field of teaching in the other interview. The other recurring issue was that some respondents, typically those teaching part-time at 2-year institutions, appeared to be teaching courses in multiple areas. It is recommended that the coding process be re-examined for the full-scale study (e.g., consider adding a category for “Teaching English as a Second Language,” and using an autocoder to improve the coding process).

Time Allocation

Table 4.9 presents the results from the series of time allocation items. These items changed considerably for NSOPF:04 because their format in the past worked well for a hardcopy instrument but would have been extremely difficult to administer by CATI. The percent agreement, which required responses to be within one standard deviation of each other, ranged from 81 to 95 percent. The relational statistics varied considerably, from 0.20 to 0.89. There were no significant differences by mode for these items.

Table 4.9 Reliability indices for time allocation: 2003

Item	Description	Number of cases ¹	Percent agreement ²	Relational statistic ³
Q31A	Hours per week: paid tasks at institution	111	95.5	0.88
Q31B	Hours per week: unpaid tasks at institution	96	84.4	0.54 ⁴
Q31C	Hours per week: paid tasks outside of institution	97	91.8	0.81
Q31D	Hours per week: unpaid tasks outside of institution	91	81.3	0.20 ⁴
Q32A	Percent time: instructional activities	109	80.7	0.50 ⁴
Q32B	Percent time: research activities	109	85.3	0.58 ⁴
Q32C	Percent time: other activities	109	85.3	0.54 ⁴
Q33A	Percent instructional time: undergraduate	103	92.2	0.73
Q33B	Percent instructional time: graduate/first professional	103	94.2	0.89

¹Analyses were conducted only for respondents with determinate responses on both the initial interview and the reinterview; not all questions were applicable to all respondents.

²This percentage reflects an exact match of the paired responses.

³Pearson's product-moment correlation coefficient (r) was used.

⁴This relational statistic appears to be deceptively deflated due to insufficient variation across valid response categories. As a result, minor changes in the distribution of responses between the initial interview and reinterview tend to lower the correlation coefficient.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The first question in this series, Q31, required respondents to estimate the number of hours per week they spent on paid and unpaid activities at the target institution and at any other jobs. The hours spent on paid activities at and outside the institution had percent agreement of 95 and 92 percent, respectively, and relational statistics of 0.88 and 0.81, respectively. The percent agreement for hours spent on unpaid tasks at the institution and outside the institution was 84 and 81 percent, respectively, and the relational statistics were 0.54 and 0.20, respectively. These relatively low relational statistics for unpaid activities may be due to the small values and skewed distribution.

The second question in the series, Q32, required a breakdown of work into percentages of time spent on instructional activities, research activities, and other activities. Allocation of time for these three types of activities had mixed results. Percent agreement ranged from 81 to 85 percent, and relational statistics ranged from 0.50 to 0.58. A skewed distribution appears to be the reason for these lower relational statistics.

The third question, Q33, required a further breakdown of instructional activities into percentage of time spent on undergraduate instruction and percentage of time spent on graduate/first-professional instruction. Allocation of instructional time had percent agreement of 92 and 94 percent, respectively, and relational statistics of 0.73 and 0.89, respectively.

Classes Taught

Reliability results for the “number of classes taught” items are presented in table 4.10. The percent agreement ranged from 75 to 100 percent, and the relational statistics ranged from 0.55 to 1.00. No statistically significant differences in percent agreement by mode were found.

Table 4.10 Reliability indices for classes taught: 2003

Item	Description	Number of cases ¹	Percent agreement ²	Relational statistic ³
Q35A1	Number credit classes taught	110	74.5	0.86
Q35A2	Number noncredit classes taught	103	88.3	0.80
Q35B1	Number remedial credit classes taught	102	90.2	0.55 ⁴
Q35B2	Number remedial noncredit classes taught	101	96.0	0.81
Q35C1	Number distance education credit classes taught	101	97.0	0.85
Q35C2	Number distance education noncredit classes taught	101	100.0	1.00

¹Analyses were conducted only for respondents with determinate responses on both the initial interview and the reinterview; not all questions were applicable to all respondents.

²This percentage reflects an exact match of the paired responses.

³Kendall's tau-b statistic was used.

⁴This relational statistic appears to be deceptively deflated due to insufficient variation across valid response categories. As a result, minor changes in the distribution of responses between the initial interview and reinterview tend to lower the correlation coefficient.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

In NSOPF:99 the total number of classes and the number of classes taught for degree credit were collected in questions that were several items apart. For the field test, the numbers of for-credit and not-for-credit classes taught were asked on the same screen with modified question wording. The responses to Q35A1, the number of classes taught for credit toward a degree, ranged from zero to seven classes and had a perfect match between the two interviews in 75 percent of the cases. An additional 20 percent of the cases differed by one between the initial interview and the reinterview. The relational statistic was 0.86. The comparable item for classes that were not for credit, Q35A2, had percent agreement of 88 percent and a relational statistic of 0.80. An additional 9 percent of the cases differed by one between the initial interview and the reinterview.

The NSOPF:99 interview asked how many of the classes were remedial and how many of the remedial classes were not creditable toward a degree. In NSOPF:04, these items were modified to collect the number of remedial or developmental classes taught for credit (Q35B1) and not for credit (Q35B2). Percent agreement was 90 and 96 percent, respectively. The relational statistic for the number of remedial for-credit classes was 0.55. Very few of the respondents taught remedial courses for credit; this skewed distribution of responses, coupled with a small number of changes in the distribution of responses between the two interviews, appears to be the cause of the lower relational statistic. The relational statistic for the number of remedial not-for-credit classes was 0.81.

The third pair of items, which asked about continuing education in NSOPF:99, was changed to ask about distance education classes. The percent agreement was 97 percent and the relational statistic was 0.85 for the number of for-credit distance education classes taught

(Q35C1). All responses to the number of not-for-credit distance education classes taught question (Q35C2) were an exact match.

Scholarly Activity

Table 4.11 presents the reliability results of the scholarly activity items. The percent agreement ranged from 47 to 97 percent for these items. The relational statistic ranged from 0.32 to 0.93. There were no statistically significant modal differences in percent agreement.

Table 4.11 Reliability indices for scholarly activity: 2003

Item	Description	Number of cases ¹	Percent agreement ²	Relational statistic
Q52AA	Career articles, refereed journals	111	97.3	0.93 ³
Q52AB	Career articles, nonrefereed journals	111	91.9	0.78 ³
Q52BA	Last 2 years' articles, refereed journals	38	65.8	0.75 ⁴
Q52BB	Last 2 years' articles, nonrefereed journals	38	47.4	0.55 ⁴
Q55	Scholarly activity: funded	98	52.0	0.32 ⁴

¹Analyses were conducted only for respondents with determinate responses on both the initial interview and the reinterview; not all questions were applicable to all respondents.

²This percentage reflects an exact match of the paired responses.

³Pearson's product-moment correlation coefficient (r) was used.

⁴Kendall's tau- b statistic was used.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The "number of publications" items were redesigned for NSOPF:04 because they would have been difficult to administer by a telephone interviewer in the matrix form used in the NSOPF:99 paper-and-pencil interview. The first pair of items asked about the number of articles or creative works published in refereed (Q52AA) and nonrefereed (Q52AB) journals during the respondent's career. These items had percent agreement of 97 and 92 percent, respectively, and a relational statistic of 0.93 and 0.78, respectively.

The second pair of items collected information on the number of articles or creative works published in refereed (Q52BA) and nonrefereed (Q52BB) journals in the past 2 years. The range of acceptable responses was limited by the respective career total provided in the earlier question, and those who did not have publications were not asked these items. The responses to the question about number of refereed journal articles in the past 2 years ranged from zero to seven and had a perfect match between the two interviews in 66 percent of the cases. An additional 26 percent differed by one between the initial interview and the reinterview. The relational statistic was 0.75. The responses to the question about number of nonrefereed journal articles in the past 2 years ranged from zero to eight and matched perfectly between the two interviews in 47 percent of the cases. An additional 24 percent differed by one between the two interviews. The relational statistic was 0.55. It should be noted that interviewers were instructed to get a "best guess" rather than to require the respondent to provide an exact count. It is quite possible, given the time lag between the initial interview and the reinterview, that the number of publications they had in the past 2 years may have changed. Even though these data are based on a small number of respondents (38) who reached these items, the low rate of exact matches suggests this pair of items be considered for revision for the full-scale interview.

The question of whether scholarly activities were funded was reworded from the NSOPF:99 interview and the response options were changed. Feedback from telephone interviewers suggested that this item, which asked whether the respondent's scholarly activities were funded, nonfunded, or both, (Q55) was problematic. The results of the reinterview analysis reinforced this assessment. The percent agreement for this item was 52 percent and the relational statistic was 0.32. Fifteen percent of respondents indicated no scholarly activities in one interview and nonfunded activities in the other interview, suggesting they may not have realized that "no scholarly activities" was an option (it was not explicitly stated in the question). Interviewer feedback indicated that the definition of "funded" was not clear and often resulted in backing up to correct the response to this item. It is suggested this item be clarified for the full-scale interview.

Income

The results of the reinterview analyses for the income items are presented in table 4.12. The percent agreement was over 95 percent for both items and the relational statistics ranged from 0.87 to 0.97. There were no significant differences by mode in percent agreement for the income items.

Table 4.12 Reliability indices for income: 2003

Item	Description	Number of cases¹	Percent agreement²	Relational statistic³
Q66AA	Income: basic salary from institution	105	98.1	0.97
Q66AB	Income: other income from institution	108	95.4	0.87

¹Analyses were conducted only for respondents with determinate responses on both the initial interview and the reinterview; not all questions were applicable to all respondents.

²This percentage reflects an exact match of the paired responses.

³Pearson's product-moment correlation coefficient (*r*) was used.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Separate income amounts were requested for basic salary from the target institution (Q66AA) and other compensation from this institution not included in the basic salary (Q66AB). Basic salary from the institution had 98 percent agreement and a relational statistic of 0.97. Other compensation from the institution had percent agreement of 95 percent for this item. The relational statistic for this item appears to be slightly deflated due to the large number of responses clustered at zero.

4.3.2 Inconsistent Responses

In order to improve data quality, resolution screens were programmed throughout the instrument to identify and enlist the respondents' help in resolving inconsistent data. The instrument included seven resolution screens that explained to respondents that their answers were in conflict, then briefly described the items in question and the corresponding responses. Respondents had the option of clicking on a "change" button for each of the items that would route them back to the screen in question to change their answer. Alternatively, if respondents wanted to keep the answers, they could proceed to the next question by selecting the "continue" button.

The first resolution screen checked for inconsistent employment data. The number of years the respondents reported working part time at the target institution (Q7) was compared with the year in which they started working at the job held at the institution (Q9). If the current year minus the year in which the respondents started working at the job was less than the number of years they had worked part time, the resolution screen was displayed. Of the 401 respondents who responded to both employment questions, 12 had inconsistent data after having the opportunity to correct it on the resolution screen.³¹

The second resolution screen tested for inconsistencies in dates degrees were awarded. The year respondents were awarded their highest degree (Q17A2) was compared with the year the respondents reported earning a bachelor's degree (Q17D). The resolution screen was launched if the bachelor's degree year was not less than the year the highest degree (master's, professional, or Ph.D.) was awarded. Of the 772 respondents who responded to both questions, three had inconsistent data after having the opportunity to resolve the inconsistency on the resolution screen.

An age check was performed against degree dates after respondents' year of birth was collected. The ages at which the respondents reported earning their highest degree (Q17A2), doctoral degree (Q17C), and bachelor's degree (Q17D) were compared with the respondents' year of birth (Q72). The resolution screen came up for 11 respondents when the calculated age at earning any of the degrees was less than 20. Five respondents resolved the conflict with age and six did not, although their data may, in fact, be accurate. Five indicated they earned a bachelor's degree at a young age (one at age 13, one at 17, one at 18, and two at 19), and the other indicated having received an associate's degree at age 19.

The next resolution screen checked for inconsistencies in the number of postsecondary jobs reported. The sum of the numbers of full- and part-time faculty and instructional staff positions held at other postsecondary institutions during the 2002 Fall term (Q19B1 and Q19B2) was compared with the total number of postsecondary institutions where the respondent had been employed as a faculty or instructional staff member (Q22). The resolution screen appeared if respondents reported holding more concurrent positions at postsecondary institutions during the 2002 Fall term than the total number of positions held at postsecondary institutions during their career. Of the 157 respondents who responded to both questions, three had inconsistent data.

To resolve inconsistent employment history data, the year the respondents started working at the job they held during the 2002 Fall term (Q9), the year in which respondents attained their current academic rank (Q11), and the year the respondents first achieved tenure (Q13) were checked against the year they began their first faculty position at a postsecondary institution (Q23). The resolution screen was displayed if the year a faculty member began the first faculty position was greater than any of the years it was compared against. Four respondents reached the inconsistent-data screen and all but one resolved the inconsistency.

³¹ Four of the resolution screens used a generic resolution screen that did not set a flag to indicate that the resolution screen was reached. Thus, there is no way to know how many of these 401 respondents reached the resolution screen and corrected their answers. The other three resolution screens described in this section were customized to handle the resolution of more than two pieces of conflicting data. Because of this customization, these resolution screens included time stamps, which were used as an indicator that the screen was reached.

The age at which the respondents expected to stop working at a postsecondary institution (Q63) was compared with the age at which they expected to retire from all paid employment (Q65). The resolution screen came up when respondents reported an older age for retiring from postsecondary employment than for retiring from all paid employment. Of the 908 respondents who answered both questions, 4 had inconsistent data after having had the opportunity to correct it on the resolution screen.

A second check on expected age at retirement came up after respondents' year of birth was collected. The age at which respondents expected to stop working at a postsecondary institution (Q63) and the age they expected to retire from all paid employment (Q65) were checked against year of birth (Q72) for inconsistencies. The resolution screen appeared for 12 respondents whose year of birth indicated they were older than one of the ages projected for retirement. All 12 respondents resolved their inconsistent data.

4.3.3 Item Nonresponse

As mentioned earlier, web self-administered studies that include “don’t know” and “refuse” options on screen tend to have higher rates of missing data. To limit the rate of nonresponse in the faculty instrument, the refusal option was not available to respondents and the “don’t know” option was limited to selected screens where the respondent might not know the answer (e.g., expected age at retirement). Respondents were instructed (on the information page at the start of the questionnaire) to click the “continue” button to proceed to the next question if they wished to decline to answer a question. For a small number of screens requesting critical information, a warning box appeared explaining the importance of the question, thus encouraging the sample member to provide an answer.

Missing Data

Eleven of the approximately 250 items in the faculty questionnaire contained more than 10 percent missing data. These items are reported in table 4.13, broken out by mode of data collection. Item nonresponse rates were calculated based on the number of sample members of whom the item was asked.³²

The IPEDS school coding system collected the state, city, and name of the school that awarded the respondent's highest degree (Q17A4) and that information was matched, real time, against the IPEDS database. The name of the school was missing for 10 percent of the sample. Web respondents were more likely to leave this item blank than CATI respondents (15 percent versus 3 percent; $\chi^2 = 33.7, p < 0.0001$). This screen was complicated to administer and telephone interviewers therefore received specific training on it. Web respondents may have had difficulty interpreting the coding instructions provided. In addition, this screen required respondents or interviewers to choose a “search” button instead of the more familiar “continue” button to properly code the school; data for some web respondents was not saved because they incorrectly used the continue button, despite a pop-up box requesting they use the search button.

³² Some items that appear to have high rates of missing data (–9) in the field test data actually have a lower incidence of missing data. This is due to the coding of nested items as missing (rather than skipped, –3) in the data when the respondent did not answer the gate question. For the purpose of the item nonresponse analysis, if respondents did not reach an item because they did not answer an earlier question, the missing answer was removed from the calculation of nonresponse for that item.

Table 4.13 Faculty questionnaire items with more than 10 percent missing data: 2003

Item	Description	Percent		
		Total	Web	CATI
Q17A4N	Highest degree institution—name	10.1	14.8	2.8
Q19B1	Number full-time positions at other postsecondary institutions	13.4	19.5	5.3
Q19B2	Number part-time positions at other postsecondary institutions	11.4	18.0	2.7
Q31C	Hours/week: paid tasks outside institution	11.7	18.4	1.1
Q31D	Hours/week: unpaid tasks outside institution	14.7	22.9	1.7
Q37F3	Teaching assistant, third class ¹	12.0	17.6	0.0
Q37F4	Teaching assistant, fourth class ¹	14.0	20.7	0.0
Q47B3	Individual instruction: first-professional hours	15.8	19.2	8.3
Q59	Scholarly activity: number grants/contracts	28.0	18.1	46.2
Q62C	Satisfaction: benefits	10.7	4.3	20.7
Q66B	Total income (nonresponse follow-up; range) ²	30.7	27.5	33.4

¹Respondents were asked about up to eight classes that they taught, but few respondents taught more than four.

²This item was asked only of those who did not answer the income questions on the previous form. Overall, the nonresponse for income was 2 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The questions regarding the number of full- and part-time faculty jobs held at other postsecondary institutions during the 2002 Fall term (Q19B1 and Q19B2) had “missing” rates of 13 and 11 percent, respectively. For both items, web respondents were more likely to leave answers blank than were CATI respondents (20 percent versus 5 percent, $\chi^2 = 15.0, p < 0.0001$; 18 percent versus 3 percent, $\chi^2 = 20.1, p < 0.0001$). The majority of respondents who did not provide an answer to the number of full-time jobs did answer the number of part-time jobs held during the fall term, and vice versa, suggesting the blank answers are implied zeroes. CATI interviewers were trained to enter zeroes rather than leave an item blank, which may account for the missing data mode effect for these items. If these blanks are indeed implied zeroes, the actual “missing” rate for both full- and part-time jobs held was 1 percent.

Questions about paid and unpaid job-related activities performed outside the institution during the fall term (Q31C and Q31D) had missing data rates of nearly 12 and 15 percent, respectively. Web respondents were more likely to leave answers blank than CATI respondents (Q31C: 18 percent versus 1 percent, $\chi^2 = 62.9, p < 0.0001$; Q31D: 23 percent versus 2 percent, $\chi^2 = 78.1, p < 0.0001$). A check against questions indicating whether respondents had employment outside their institutions (such as Q18, other jobs excluding consulting; and Q66AD, amount of consulting income) suggests that about half of these cases did not have any other employment; hence, their blank answers to these items are implied zeroes. Additionally, of the 154 respondents who did not answer Q31C or Q31D, 97 percent provided information about paid (Q31A) or unpaid (Q31B) job-related activities performed at the institution during the fall term giving further credence to the speculation that the missing data at Q31C and Q31D were implied zeros.

The matrix items that asked about the use of teaching assistants (Q37F3 and Q37F4) had “missing” rates of 12 and 14 percent for the third and fourth classes³³ described, respectively. Web respondents were significantly more likely to leave this item blank for the third class than

³³ Respondents were asked about up to eight classes that they taught, but few respondents taught more than four.

were CATI respondents (18 percent versus 0 percent, $\chi^2 = 4.8, p < 0.05$). The difference was not statistically significant for the fourth class (21 percent versus 0 percent, $\chi^2 = 3.4, p = 0.07$). Respondents may have grown tired of providing detailed information about their classes and therefore left these items blank.

The item asking the number of hours of individual instruction time respondents had with their first-professional students during the fall term (Q47B3) was blank for nearly 16 percent of respondents who indicated they had individual instruction with first-professional students. It should be noted this item was asked of only 38 respondents. Providing the number of contact hours for individual instruction of first-professional students may have been difficult for respondents, particularly if the individual instruction was not on a formal schedule.

The item asking for the number of grants or contracts the sample members had in the 2002–03 academic year (Q59) was missing for 28 percent of those who indicated they had funded research. CATI respondents were significantly more likely than web respondents to leave this item blank (46 percent versus 18 percent, $\chi^2 = 23.6, p < 0.0001$). Based on feedback from interviewers (reported later in this chapter), the “funded scholarly activity” was not clearly defined as grants and/or contracts in the gate question (Q55). Therefore, CATI respondents reported not having any grants or contracts when they answered this question, which was not an allowable answer.

Satisfaction with benefits from the target institution (Q62C) was missing for nearly 11 percent of the sample. CATI respondents were more likely than web respondents to leave this item blank (21 percent versus 4 percent, $\chi^2 = 60.5, p < 0.0001$). The overwhelming majority of the sample members who did not answer this question were part-time faculty and instructional staff. This suggests the institution did not provide them with benefits and therefore they could not answer the question. This explanation was confirmed by interviewers during the interviewer debriefing.

Sample members’ total compensation from all sources (in categories; Q66B) was missing for 31 percent of those reaching this item. There was no difference in nonresponse by mode. This question was asked only when respondents did not provide answers to one or more of the questions about compensation from the institution and other sources on the previous screen (Q66). In other words, this item attempted to convert nonresponse to a sensitive income item. Despite this high rate of nonresponse, this item was effective in converting nonresponse. Together these two screens soliciting amount of income garnered responses from 98 percent of the sample.

“Don’t Know” Responses

A “don’t know” response option was available for six items in the faculty questionnaire to which “don’t know” was considered to be a legitimate answer. Table 4.14 summarizes the rates of “don’t know” responses to these items.

Table 4.14 Faculty questionnaire items with “don’t know” responses: 2003

Item	Description	Percent		
		Total	Web	CATI
Q60A	Scholarly activity: grants/contracts funding amount	23.4	31.1	9.9
Q60B	Scholarly activity: grants/contracts funding amount (range)	24.2	22.5	30.0
Q63	Age expecting to retire from postsecondary employment	35.2	46.5	17.6
Q65	Age expecting to retire from all paid employment	37.1	50.1	16.7
Q70A	Income: total household	13.3	17.3	7.1
Q70B	Income: total household (range)	15.2	19.0	7.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The “don’t know” option on the question asking for the amount of funding for grants and contracts (Q60A) was chosen by 23 percent of those with funded scholarly activities. Web respondents were more likely to use the “don’t know” option than were CATI respondents (31 percent versus 10 percent, $\chi^2 = 16.1, p < 0.0001$). This is not surprising since the “don’t know” option was visible to web respondents whereas CATI respondents were not read that response option. CATI interviewers were also trained to encourage respondents to provide a “best guess” of the amount. The follow-up question, for those who did not provide an amount, asked for the amount of funding with ranges as response options (Q60B). Nearly one-quarter of those who got this item responded with “don’t know.” Of those who answered “don’t know” to the first question, 63 percent chose a categorical response option to the follow-up question. Together, these questions collected a funding amount from 88 percent of those who received funding for their scholarly activities.

The two questions asking the ages at which sample members plan to retire from postsecondary education (Q63) and all paid employment (Q65) provided “don’t know” response options. Thirty-five percent of respondents were unsure at what age they would retire from postsecondary employment and 37 percent of respondents did not know at what age they would retire from all paid employment. Given that the average age of all respondents was 48 years, it is not surprising that many of these respondents were unwilling to specify an exact age. Web respondents were more likely than CATI respondents to select the “don’t know” option (Q63: 47 percent versus 18 percent, $\chi^2 = 79.1, p < 0.0001$; Q65: 50 percent versus 17 percent, $\chi^2 = 103.0, p < 0.0001$). Again, this difference by mode of data collection may be attributed to the option being visible to web respondents while CATI interviewers were encouraged to probe for the best answer.

The questions about household income also had high “don’t know” access rates. Thirteen percent of respondents said that they did not know their total household income (Q70A) and an additional 7 percent left the item blank. Web respondents were more likely than CATI respondents to answer “don’t know” to this item (17 percent versus 7 percent, $\chi^2 = 19.5, p < 0.0001$). Those who did not answer or said they did not know were asked a follow-up question with ranges for providing household income (Q70B). Sixty-nine percent provided a response to the follow-up question. Together, these questions collected the total household income from 94 percent of respondents.

4.3.4 Item Mode Effects

A goal for the NSOPF:04 field test was to minimize potential mode effects by designing a single instrument to be used for both self-administration and CATI, and by eliminating the paper version of the survey used in previous NSOPF cycles. However, whenever multiple modes are used for data collection, the possibility of mode effects is inherent. Because respondents were offered the option of completing the interview by themselves on the web or with an interviewer, there was the potential for bias due to self-selection or other variables for which we cannot account. Therefore, these results should be interpreted as how respondents in different modes of administration answered the survey questions, and not as true mode differences.

For this analysis, 63 variables were selected, covering the following topic areas: demographic variables, descriptive items, factual items, and opinion-based questions. Criteria for selection of items included importance to the content of this study. Items for which project staff had concerns that there might be mode effects (e.g., complex matrix items) were also selected.

Demographics

Compared to their CATI counterparts, web respondents were more likely to be male (Q71; 56 percent versus 47 percent, $\chi^2=7.05$, $p<0.01$), younger (Q72; mean age 48 versus mean age 51, $t=3.48$, $p<0.001$), and White (Q74; 92 percent versus 88 percent, $z=1.96$, $p<0.05$). Conversely, Blacks or African Americans (Q74) were a larger proportion of CATI completed cases than of web completed cases (9 percent versus 5 percent, $z=-2.3$, $p<0.05$).

Descriptors

Web respondents were more likely than CATI respondents to report administration as their primary activity (Q4: 7 percent versus 4 percent, $z=2.59$, $p<0.01$), be employed full-time (Q5: 61 percent versus 48 percent, $z=3.85$, $p<0.001$), be an associate professor (Q10: 15 percent versus 8 percent, $z=3.14$, $p<0.01$), and be tenured (Q12: 31 percent versus 23 percent, $z=2.58$, $p<0.01$). CATI respondents were more likely than web respondents to be instructors (Q10: 37 percent versus 23 percent, $z=-4.57$, $p<0.001$), not on tenure track (Q12: 54 percent versus 44 percent, $z=-2.90$, $p<0.01$), and employed outside the target institution (Q18: 43 percent versus 36 percent, $z=-2.12$, $p<0.05$).

Factual Items

Thirty-six factual items were chosen, based on their importance to the study objectives. These factual items were expected to show few, if any, mode differences. These questions centered on eight main topic areas: number of classes taught, year began teaching, employment sector of previous job, hours per week spent on various tasks, percent time spent on various tasks, use of various methods in the classroom, other activities, and publications.

Classes taught. There were no significant differences observed in mean number of classes taught full time or part time at other postsecondary institutions (Q19C1 and Q19C2), or mean number of credit and noncredit classes taught at the target postsecondary institution (Q35A1 and Q35A2).

Year began teaching. There was no significant difference in the mean year web respondents began teaching (Q23) compared to their CATI counterparts.

Employment sector of previous job. CATI respondents were more likely to have been employed in an elementary or secondary school prior to their current position (Q28) than were web respondents (19 percent versus 13 percent, $z = -2.20$, $p < 0.05$).

Hours per week spent on various tasks. Web respondents reported spending more time on paid tasks at the institution (Q31A), on average, than their CATI counterparts (31 hours versus 27 hours, $t = 3.27$, $p < 0.001$). No significant differences were found on hours spent on unpaid tasks at the institution (Q31B), paid tasks outside the institution (Q31C), unpaid tasks outside the institution (Q31D), or hours spent e-mailing students each week (Q41).

Percentage of time spent on various tasks. Respondents were asked to provide the percentage of time they spent on instructional activities (Q32A), research activities (Q32B), and other activities (Q32C); and were further asked to break down these activities. No significant differences were observed between web and CATI respondents in reports of percentage of time spent overall on instructional activities, research activities, and other activities. However, within other activities, web respondents reported spending a greater percentage of their “other” time, on average, on administration (Q34A) than their CATI counterparts (47 percent versus 30 percent, $t = 6.54$, $p < 0.001$). Compared to web respondents, CATI respondents reported spending a greater percentage of their “other” time on service (Q34C: 22 percent versus 17 percent, $t = -2.91$, $p < 0.01$) and other activities (Q34D: 21 percent versus 11 percent, $t = -4.67$, $p < 0.001$).

Use of various methods in the classroom. Of the 11 methods in question, only 2 showed a significant difference by mode. CATI respondents were more likely to report using essay midterm or final exams (Q38C) than were web respondents (66 percent versus 57 percent, $z = -2.41$, $p < 0.05$). Web respondents were more likely to report using a website for instructional duties (Q39) compared to CATI respondents (50 percent versus 41 percent, $z = 2.61$, $p < 0.01$).

Other activities. There were no significant differences in reports of how often web and CATI respondents met with other instructional faculty to plan instruction (Q43A), talked with students about their career plans (Q43B), met with business or industry representatives to develop a curriculum (Q43C), or called or met with business or industry representatives to develop employment opportunities for students (Q43D).

Publications. The average number of articles published in refereed journals in their careers (Q52AA) was no different for web and CATI respondents.

Opinion

Thirteen opinion-based questions were evaluated for mode differences. Eight of these questions asked how satisfied respondents were with various aspects of their job, including: authority to make decisions, technology-based activities, equipment/facilities, institutional support for teaching improvement, workload, salary, benefits, and job overall (Q61 and Q62). As shown in table 4.15, CATI respondents were significantly more likely to report being either somewhat or very satisfied with six of the eight items—including their authority to make decisions, equipment and facilities, institutional support for teaching improvement, workload,

salary, and job overall—compared to web respondents. These differences may be due to the effect of social desirability on responses when an interviewer is involved.

Table 4.15 Satisfaction items, by mode of administration: 2003

Item	Description	Web		CATI	
		Number	Percent	Number	Percent
Q61A	Authority to make decisions	494	92.5	335	97.7**
Q61C	Equipment/facilities	374	69.8	279	81.3***
Q61D	Institutional support for teaching improvement	320	61.8	258	79.4***
Q62A	Workload	417	75.4	291	82.9**
Q62B	Salary	339	61.6	244	69.5*
Q62D	Job overall	490	88.5	328	93.7**

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

The remaining five opinion-based questions asked respondents to indicate whether they agreed or disagreed that teaching was rewarded, part-time faculty were treated fairly, female faculty were treated fairly, and racial minorities were treated fairly (Q82); and whether they would choose an academic career again (Q83). There were no significant differences in reports of agreement between web and CATI respondents for any of these questions. This may, however, be due in part to the lack of variance on these questions overall.

4.3.5 Breakoffs

A total of 959 sample members started the faculty interview. Twenty of these were deemed ineligible based on their responses to the questions about instructional duties (Q1) and faculty status (Q3), and exited the interview. Of the 939 eligible sample members, 908 completed the entire interview and 31 (3 percent) broke off at some point in the interview. Of the 31 respondents who broke off, 6 did so in the employment section (A), 5 in the academic section (B), 14 in the workload section (C), and 6 in the scholarly activities section (D). The 6 respondents who broke off after completing the workload section (C) were considered partial completes.

4.3.6 Use of Help Text

Help text was available for every screen in the field test faculty instrument to assist respondents and telephone interviewers while conducting an interview. The help text displayed the purpose of the question, definitions of words or phrases referenced in the question or response options, and any additional information or instructions needed to accurately answer the question. The toll-free number and e-mail address of the help desk was also included in the help text for each screen, so web respondents had a contact if additional help was needed. In addition to the item-level help, a general help screen was available to answer technical questions. The general help screen provided assistance on web browser requirements as well as explanations of the radio buttons, text boxes, and drop-down boxes used for entering responses.

Counters were used to determine the number of times each help screen was accessed, making it possible to identify items that were confusing to interviewers or respondents. Of the

113 forms (screens) in the faculty interview, 9 had help-text access rates greater than 10 percent. These forms with high rates of help-text access, summarized in table 4.16, were then analyzed by mode to determine whether any issues associated with the screen were related to the mode of the interview.

Table 4.16 Faculty questionnaire items with more than 10 percent usage of help text: 2003

Form	Description	Percent		
		Total	Web	CATI
Q3	Faculty status, Fall 2002	13.0	10.4	17.2
Q31	Hours per week: paid/unpaid tasks, all jobs	11.4	2.5	25.4
Q35B	Number credit/noncredit remedial classes taught	18.3	15.6	22.4
Q35C	Number credit/noncredit distance education classes taught	11.9	4.6	23.3
Q45	Professional training hours, calendar year 2002	12.0	5.3	21.7
Q47B	Individual instruction: number of contact hours	11.9	4.3	21.5
Q52A	Career publications/presentations	13.4	1.8	31.6
Q55	Scholarly activity: funded	11.2	4.4	21.5
Q59	Scholarly activity: number grants/contracts	13.7	6.2	26.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Q3. This critical item in determining respondent eligibility asked, “During the 2002 Fall term, did you have faculty status at [institution name]?” This form had a high rate of help-text hits for both self-administered and CATI respondents. Sample members who accessed help text for this form tended to be part-time respondents (Q5), suggesting that they were unsure whether they were considered to be faculty members and may have been looking for a definition of faculty.

Q31. This form asked for the number of hours the respondent worked at paid and unpaid activities at the target institution and the number of hours worked at paid and unpaid activities at any other jobs. Help-text accesses for this form were overwhelmingly made by CATI interviewers. During the interviewer debriefing at the end of data collection (see later section summarizing the debriefing), interviewers reported that faculty and instructional staff asked for specific examples of what was included in “unpaid professional service” and noted that sample members’ ideas of what constituted paid and unpaid activities often differed from the examples provided on screen.

Q35B, Q35C. The first of these forms asked, “Of the classes you taught at [institution name] in the 2002 Fall term, how many were remedial or developmental classes?” The other asked, “Again, thinking about all the classes you taught in the 2002 Fall term at [institution name], how many classes did you teach through distance education, either exclusively or primarily?” One reason for the high rate of help-text hits on these forms is that there was an on-screen instruction directing web respondents and interviewers to select the help button for additional guidance on how to count classes. Feedback from interviewers indicated that the terms “developmental” and “distance education” required clarification for some respondents.

Q45. This form asked, “How many hours during the 2002 calendar year did you spend in training or professional development?” Interviewers reported that respondents found the timeframe (calendar year) difficult. Help text may also have been reviewed to determine what sorts of activities to include or exclude when answering the question.

Q47B. This form asked, “Of the students who received individual instruction from you during the 2002 Fall term, what was the total number of contact hours you had each week with your [undergraduate/graduate/first-professional students]?” The level of students asked about was based on the response to the previous question, which asked whether they had individual instruction with students at each of these levels. One explanation for the high rate of help-text accesses had to do with confusion over what was meant by the terms “individual instruction,” “first-professional,” and “contact hours.”

Q52A. One of the more complex forms in the instrument, this screen asked for the number of career publications and presentations. Interviewers reported confusion over whether the term “career” meant their career as a teacher or their entire lifetime of work. Help text may also have been used for clarification of where to classify certain types of publications.

Q55 and Q59. This form asked about funding of scholarly activities, with Q55 serving as a gate for Q59. Q55 asked, “During the 2002–03 academic year, were your scholarly activities at [institution name] funded, nonfunded, or both funded and nonfunded?” There appear to have been two reasons for accessing help text on this form. First, interviewers used the help text to provide the definition for “scholarly activities” as needed. The most frequent reason for accessing the help text, according to interviewer feedback, was a common misunderstanding of what constitutes “funded,” particularly with respect to the follow-up question, Q59. Q59 asked, “How many grants/contracts did you have from all sources in the 2002–03 academic year?” Interviewers reported many sample members answering “zero,” which was not an allowable answer. Help text was amended to direct respondents to return to Q55 and change their answer if they did not have any funded grants/contracts.

4.3.7 Coding “Other, Specify” Items

Four screens in the faculty interview included an “other, specify” option in addition to their fixed response options. Typically, the “other, specify” option is provided for items whose response categories may be incomplete. This option may be selected when the respondent’s answer does not fit into one of the existing response categories and a text string with more information can be entered.

Upcoding—that is, attempting to code these text strings into existing categories—was done by project staff. In some cases the text string could be upcoded into an existing response option. The text strings that could not be upcoded were analyzed to determine whether new response options should be added for the full-scale study.

Q34. This question, administered to those who indicated they had work activities other than instruction and research, asked “Finally, of the time you spent on activities other than instruction and research during the fall term at [institution name] or any other institution, what percentage did you spend in the following four areas: administration, professional growth, service, and other activities not related to research and instruction and not included above? What

percentage of your nonresearch and nonteaching time did you spend on...?” Approximately one-quarter of respondents indicated they spent time on “other” activities and specified what those activities were. While some of the text strings could be coded as instructional activities (i.e., advising students, teaching, preparing for class), the majority of “other, specify” strings did not fit into the categories listed.³⁴ Respondents appear to have misinterpreted the meaning of this question, often reporting their personal activities (e.g., family activities, sports, faith-related activities).

Q40. This question asked, “How did you use the websites for your instructional activities?”³⁵ A total of 76 strings were collected, 61 percent of which were upcoded into an existing category. The largest number of strings was upcoded to the Q40A response category, “To facilitate communication with and between students.” The most common answers that were upcoded into this category included the following: to answer students’ e-mail questions; to provide feedback; to deal with general communication; to hold discussions or host discussion boards; and to provide announcements or reminders to students. The second largest response category to be upcoded was Q40B, “To provide content.” The most common answers that were upcoded included the following: online references/links to research; instructional materials/course reading; PowerPoint presentations; and lecture notes/lecture material. Since most of the text strings corresponded to examples provided on screen, it may be beneficial to have interviewers read those examples to respondents so they have a clearer understanding of what is included in each response category. One frequent response that could not be upcoded was “research.”

Q44. This question asked, “During the 2002 calendar year, did you use training or professional development resources provided by your department or institution to...a) develop new or improved curriculum, b) learn how to use new instructional practices, c) learn how to better use educational technology, d) learn how to use student performance data to improve curriculum or teaching, e) keep up with skills and knowledge required of your students in the workplace, f) other, please specify?” Eleven percent of the text strings were upcoded into an existing category. Since the text strings often referenced specific types of technology training (i.e., classroom equipment or instructional media workshops), it is recommended that in the full-scale study, examples of educational technology be included in the item wording, where appropriate.

Q68. This question, administered to those not on a 9-, 10-, 11-, or 12- month contract, asked, “What was the basis of your pay? Was it by...course, credit hour, academic term, or other, please specify?” Twenty-one percent of the text strings were upcoded into an existing category. Based on these upcoded strings, it is recommended that “(semester/quarter/trimester)” be added to the response option “academic term.” Two frequent responses (40 percent of text strings provided) that could not be upcoded into existing categories were “student” and “hour/hourly rate.”

³⁴ Actual upcoding was impossible for this item because the responses were percentages rather than indicators of whether they did the activity or not. Nevertheless, the text strings were analyzed to determine whether additional items should be added to the form.

³⁵ The gate question for this item asked “During the 2002 Fall term at [institution name], did **you** have one or more Internet websites or network sites for instruction, materials exchange, or other purposes for any of your teaching, advising, or other instructional duties?”

4.3.8 Classification of Instructional Programs (CIP) Coding

The NSOPF field test instrument included tools that allowed online coding of literal responses for field of teaching, field of research, and field of highest degree. The codes for each of these fields were identical (see appendix F for a list of codes). The literal string was first coded into a general category from the 32 categories provided in a drop-down box. It was then coded into a specific category within the general category. There were a total of 137 specific categories, but within a general category there were never more than 18 specific categories to choose from.

The anticipated benefit to performing this coding in the interview for web respondents is obvious; the sample member can see the categories and select the appropriate general and specific categories. For telephone-administered interviews, this real-time coding may also improve data quality by capitalizing on the availability of the respondent to clarify coding choices at the time the coding was performed; interviewers were trained to use probing techniques to assist in the coding process.

As part of the field test data evaluation activities, a random sample of 10 percent of the results for each of the three CIP codings (teaching, research, highest degree) was selected. An expert coder evaluated the verbatim strings for completeness and for the appropriateness of the assigned codes, determining whether a string was too vague to code or whether a different code should be assigned.

Overall, 69 percent of those sampled for recoding were coded correctly, 21 percent were incorrectly coded, and 10 percent of the strings were too vague to determine whether they were correctly coded. Table 4.17 shows the results of the 10 percent recode, by mode. There were no mode differences in the coding results; the expert coder agreed with web respondent coding at about the same rate of agreement as with CATI interviewer coding ($\chi^2=0.56$, $p=.76$).

Table 4.17 Summary of 10 percent recoding of CIP: 2003

Classification of Instructional Programs (CIP) field item	Web respondents				CATI respondents			
	Coding attempts sampled	Percent coded correctly	Percent recoded	Percent too vague to code	Coding attempts sampled	Percent coded correctly	Percent recoded	Percent too vague to code
Total	108	66.7	23.1	10.2	70	71.4	18.6	10.0
Teaching field	52	71.2	17.3	11.5	31	67.7	22.6	9.7
Research field	6	50.0	33.3	16.7	3	100.0	0.0	0.0
Highest degree field	50	64.0	28.0	8.0	36	72.2	16.7	11.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

In addition to the 10 percent recode, all strings that were not coded, were partially coded (into a general area but not a specific discipline), and were coded “other” were evaluated by the expert coder and upcoded into the appropriate CIP categories, where possible. Of the 1,871 verbatim strings provided, a total of 190 strings (10 percent) qualified for this upcoding; 83 percent of these were web respondents and 17 percent were CATI respondents. Of these 190

strings for which upcoding was attempted, 75 percent were upcoded, 23 percent were too vague to code, and 2 percent were correctly coded as “other.”

4.3.9 IPEDS Coding

The faculty instrument included an online coding system that assisted web respondents and interviewers in collecting postsecondary institution information. This system was designed to improve data quality by allowing respondents to clarify coding choices at the time coding was performed. To assist in the online coding process, web respondents were given detailed instructions on screen that enabled them to locate the postsecondary institution. In addition to these on-screen instructions, interviewers were given additional supervised training on how to effectively probe and code respondents’ answers.

The institution coding system was used to assign a six-digit IPEDS identifier for the postsecondary institution that awarded the respondent’s highest degree. To facilitate coding, the coding system requested the state and city in which the school was located, followed by the name of the institution. The system relied on a look-up table of institutions constructed from the IPEDS institutional database.

Of the approximately 1,500 institutions coded over the course of data collection, 53 were initially deemed uncodeable. However, based on the information collected (institution name, location, level, and control), 43 institutions were positively identified and recoded during the data file editing stage of the project. Of the remaining 10 uncodeable institutions, five were identified as closed, four provided insufficient data, and one institution was identified as foreign.

4.3.10 Monitoring

Regular monitoring of telephone data collection serves a number of goals, all aimed at maintaining a high level of data quality. These objectives are to obtain information about the interview process that can be used to improve the design for the full-scale study; to obtain information about the overall data quality; to improve interviewer performance by reinforcing good interviewing behavior and discouraging poor behavior; and to detect and prevent deliberate breaches of procedure, such as data falsification.

Two types of monitoring were performed during the NSOPF field test data collection. The first type was monitoring by project staff, which involved listening to the interview and simultaneously viewing the progress of the interview on screen, using remote monitoring telephone and computer equipment. Project staff evaluated such things as whether the interviewer sounded professional, probed for complete answers, used the help text to answer respondents’ questions, and handled refusal cases appropriately. Interviewers received feedback on their skills, and additional training was provided, if necessary. When monitoring interviews, project staff also evaluated whether the interview was functioning properly and identified questions in the interview that were difficult to administer so that those items could be revised for the full-scale study.

The second type, quality assurance monitoring, was conducted by specially trained monitoring staff within the call center. Similar to project staff monitoring, the monitoring system provided for simultaneous listening and viewing of the interview. Monitors listened to

up to 20 questions during an ongoing interview and, for each question, evaluated the interviewer-respondent interchange on whether the interviewer (1) delivered the question correctly and (2) keyed the appropriate response. Monitors recorded their observations on laptop computers, which contained computerized monitoring forms. Each of these measures was quantified and daily, weekly, and cumulative reports were produced. Monitoring took place throughout data collection, although monitoring efforts were scaled back around the 10th week due to lighter caseloads. Of the 848 items monitored, only eight delivery errors and two entry errors were observed, all within the first 8 weeks of data collection.

4.3.11 Respondent Feedback

Respondents were given the opportunity to provide feedback on the last form of the faculty instrument (Q84). This open-ended question asked for comments, questions, or concerns that would be used to improve data collection procedures for the full-scale study.

Of the 908 respondents who completed the interview, 380 (42 percent) provided comments, which were evaluated and categorized by type of comment. One-quarter of the comments concerned instrument issues, including CIP coding (categories too broad, too specific), definitions, response options, response metric, or personal/sensitive nature of particular questions. Seventeen percent commented that the questionnaire content did not apply to them for various reasons (e.g., part-time faculty member, on sabbatical, librarian). Interview length and screen load times accounted for 17 percent of responses. Ten percent gave complimentary feedback on the survey. Four percent commented about technical difficulties (e.g., computer configuration, window sizing). Confidentiality or web security was a concern for 3 percent. A miscellaneous category compiled all other comments.

4.3.12 Interviewer Feedback

Quality Circle Meetings

Quality Circle meetings provided opportunities for interviewers, supervisors, and project staff to discuss issues pertinent to the NSOPF:04 field test. These meetings were scheduled regularly throughout the data collection period to ensure that CATI interviews were being conducted in the most effective manner. Interviewer representation was determined by a supervisor so that all staff would have the opportunity to attend these meetings. Project staff updated interviewers and supervisors on the progress of data collection and gathered information to solve problems encountered by interviewers while conducting interviews. As a result of these meetings, slight modifications were made to the instrument. The minutes from these meetings were prepared by project staff and were distributed to all interviewers and supervisors. Meeting minutes were available in hardcopy and online. Examples of issues raised in Quality Circle meetings included the following.

Progress of data collection. Project staff provided updates regarding the interviews completed to date and goals for the upcoming week. This information benefited both the interviewers and technical staff by recognizing interviewers' efforts and encouraging continued professionalism.

CATI Case Management System (CMS) issues. Interviewers identified and reported several CMS issues—accessibility of help screens, case-level comments not being saved, cases spontaneously moving out of the supervisor review queue, and appointment setting—that required fixes during data collection. They also requested CMS customization for this population. Using the information provided, project staff resolved these issues during data collection.

Data collection reminders. Several issues were stressed throughout data collection: read all response options where applicable, give appropriate feedback to sample members, and ask for an evening instructional supervisor at the institution to aid in locating part-time employees. Interviewers were reminded not to code sample members as ineligible in the front-end screens, instead allowing the interview responses to determine (based on Q1 and Q3) whether the sample member was eligible. Interviewers were also reminded to complete problem sheets (see later section in this chapter) for any cases that needed attention.

Instrument issues. During the Quality Circle meetings, project staff clarified specific items in the instrument for the interviewers. These items were brought to the attention of project staff in problem sheets, project staff monitoring, or Quality Circle meetings. The instrument designers asked interviewers to note particular questions or help text that could be revised. Other instrument discussions focused on how to properly code responses (e.g., for Q10, adjunct faculty should be coded as “other”; for questions expecting a numeric response, answers between zero and one should be rounded up to one).

Changes to the instrument. Updates were made to the instrument during data collection. An example of an instrument change based on an issue raised by interviewers in a Quality Circle meeting was the addition of help text to the items regarding funding of scholarly activities. The revised help text defined what was meant by “funded” and recommended backing up to change the gate question (Q55) if the answer to the nested item (Q59) indicated the respondent did not have funded scholarly activities. For questions such as the follow-up income items with categorical response options (Q66B and Q70B), interviewer notes (which appeared at the top of each screen for CATI interviews only) were changed to instruct interviewers to stop reading response options once the sample member had answered the question. These minor changes enabled the interview to be conducted more efficiently.

Coding. The majority of online coding during data collection was accurate, based on evaluation of verbatim strings and the codes assigned (see earlier section in this chapter on CIP coding), although in some cases the verbatim string was too vague to code. Interviewers were reminded to ask the sample member for the necessary level of detail while entering the verbatim string.

Web issues. A number of web-related issues were raised during Quality Circle meetings. Responding to reports of slow screen loads, interviewers were asked to time delays between screens (i.e., transit or load time) in order to gather precise information about web delays. Interviewers were reminded to clearly state the study web address (URL) to sample members.

Interviewer Debriefing

A debriefing meeting was held at the end of data collection for the field test. The purpose of this meeting was to elicit feedback from the interviewers on various aspects of the field test data collection process, including training, contacting and locating, and the faculty questionnaire. In attendance were telephone interviewers, help desk operators and their supervisors, selected project staff, and the study project officer. The field test debriefing session was highly informative and gave project staff a wealth of information that will inform instrumentation and data collection activities for the full-scale study.

Training. Interviewers indicated that the training they received, both technical and instrument-specific, was sufficient for their needs. Project staff and interviewers agreed that more training on the CMS is needed, particularly since inexperienced interviewers will be hired for the full-scale study.

The interviewers stated that the CIP coding was helpful, but they indicated that they would have liked additional practice and that they would have benefited from feedback from project staff about the accuracy of their coding in the initial days of interviewing. A hands-on coding session, similar to those provided in other National Center for Education Statistics (NCES) project trainings, is recommended for the full-scale training.

Contacting and locating. Names and telephone numbers of sample members were preloaded into the CMS. Interviewers stated that it would be helpful if home and office telephone numbers were differentiated in the CMS. This would allow for more efficient calling because the scheduler could select the appropriate telephone number based on the time of day.

Interviewers reported that it was advantageous to call faculty sample members at home on the weekends because they were willing to schedule an appointment to be interviewed at their offices. Interviewers also noted that early morning (weekdays) was the most successful time for faculty contact.

Part-time faculty were often difficult to locate (e.g., no office telephone number was available or receptionists were not allowed to provide home telephone numbers). Interviewers reported that departmental secretaries or evening instructional supervisors were sometimes able to provide locating information.

Some colleges have more than one campus. Locating the sample member would have been more efficient if the sample member's campus was identified in the preload information.

The CMS did not have a place to collect an e-mail address for the sample member. This has been requested for the full-scale study.

The need for improved refusal conversion techniques for the full-scale interview was discussed. The interviewers believed that the addition of refusal conversion scripts tailored to the particular type of refusal would help engage sample members in the survey. For example, if a respondent had told the previous interviewer he/she was too busy, the script might begin, "I understand this is a busy time of the year...." Thorough and accurate comments regarding the

reason for refusal would also aid in refusal conversion. Interviewers suggested that an earlier mention of the incentive for refusal cases might be beneficial.

Instrument. In preparation for NSOPF:04 full-scale instrumentation activities, project staff asked interviewers which items in the instrument were problematic. Interviewers responded with general comments as well as item-specific ones, based on their interviewing experience.

General comments. Interviewers reported that sample members repeatedly indicated that parts of the survey (e.g., questions about club assistance, scholarly activities) did not apply to them. Typically these respondents were part-time faculty or those with no instructional duties.

Question 3. Q3 (faculty status) had a high rate of help-text hits for both the web and CATI formats. Interviewers explained that some sample members were not sure if they were faculty. It was recommended that the wording be changed to ask: “Did [institution name] consider you to have faculty status?”

Question 4. Interviewers pointed out that Q4 asks an open-ended question (“What was your principal activity at [institution name] during the 2002 Fall term?”) followed by a restatement with response options (“Was your principal activity...teaching, research, public service, clinical service, administration, on sabbatical, or some other activity?”). Respondents tended to answer before the list was read. Project staff and interviewers redesigned the wording to improve the administration of this item.

Question 10. Interviewers indicated that respondents often provided an answer to Q10 (academic rank) before the list was read. Project staff emphasized that the list must be read to distinguish assistant and associate professors from full professors.

Question 15. Q15 (reason for not being a member of a union) had a high rate of missing data. Interviewers said this was because part-time and adjunct faculty often did not know whether unions were available and could not answer using the response options provided.

Question 17. The IPEDS coding screens (Q17A4, Q17C3, Q17D2) often appeared to “hang” when users were trying to search/select the institution, due to the slow computer system response times. The slow load-time issue is addressed under *Additional issues* below.

Questions 31 through 34. Numerous issues were raised regarding Q31 through Q34 (allocation of work time on various activities). For Q31D, sample members requested specific examples regarding what was included in “unpaid professional service.” Sample members’ ideas of paid and unpaid activities often differed from the examples provided in the instrument. Interviewers reported that some sample members equated “service” with faith-related activities. Project staff recommended changing the wording to “unpaid professional services related to your work.”

Interviewers reported that at Q32 they often had to back up to Q31 because sample members had not included some of their work-related activities (e.g., did not count their research time).

Respondents found it difficult to allocate their time, and interviewers reported that this series of questions was so wordy that sample members could not comprehend it all. In particular, on Q33 and Q34, interviewers reported confusion on the part of sample members in making the numbers sum to 100 percent when they said in Q32 that activity accounted for only a portion of their time. They recommended asking Q33 immediately after Q32A, and Q34 immediately after Q32C rather than on a new screen.

Question 35. Sample members often were unclear what was meant by the term “developmental” in Q35B, and “distance education” in Q35C. More information, either in the help text or in the question, is recommended for the full-scale study.

Question 37. Interviewers requested that the tab function for Q37 (matrix to collect information about each class taught) be changed to move from top to bottom (to match the order in which the questions are asked) rather than left to right.

Question 38. Interviewers reported several problems with Q38 (student evaluation). The first item, “student evaluations of each other’s work,” was confusing to respondents. There was also uncertainty over whether the question was asking if these tools were ever used or if they were exclusively used. Interviewers noted that the current wording/response options (“used in all classes, some classes, or no classes”) do not work well if the sample member teaches only one class. The instrument designers indicated the items will be rearranged and the terminology made clearer in the full-scale instrument.

Questions 44 and 45. Several issues were reported concerning the training/professional development questions (Q44 and Q45). Respondents did not understand what was being asked in Q44, and coming up with a total of hours for the calendar year in Q45 was difficult for many respondents. Interviewers stated that some faculty members were disappointed that the survey did not have any follow-up questions about the effectiveness of training asked about in Q44 and Q45.

Question 47. For Q47 (individual instruction), it would be helpful to add the phrase “for credit.” Based upon earlier responses in the questionnaire about level of students (Q33, Q37), skip logic could be added so that the interview would route to undergraduate, graduate, or first-professional questions. Sample members were often unclear what was meant by the terms “individual instruction,” “first-professional,” and “contact hours” in Q47 and Q47B. More information, either in the help text or in the question, is recommended for the full-scale study.

Question 50. Advising of students (Q50) was a difficult concept for some sample members. Alternative wording (“Were you an advisor? How many students did you advise?”) was suggested to clarify the meaning.

Question 52. In Q52A (number of scholarly works), sample members expressed confusion over whether “career” meant their career as a teacher or their entire lifetime of work. Interviewers recommended adding the word “entire” (i.e., “During your entire career...”) to provide clarification on the timeframe. Interviewers suggested combining Q52A and Q52B (i.e., “and how many of those were in the past 2 years?”) to reduce the interview length and improve the flow.

Question 59. A recurring problem was that sample members indicated their scholarly activities were funded (Q55), but when asked the number of grants/contracts (Q59), they responded with zero (which was not allowed by the instrument). Interviewers suggested positioning question Q59 immediately following Q55 to facilitate backing up to correct the gate question. Alternatively, question wording may be changed to clarify what is meant by funded activities.

Questions 61 and 62. The response options for Q61 and Q62 (job satisfaction) should be altered to allow “satisfied” as an acceptable response rather than requiring the respondent to choose between very and somewhat satisfied. Interviewers requested changing the order of the response options on screen so that “satisfied” is on the left and “dissatisfied” is on the right. In addition, interviewers pointed out that the question wording for Q62 was redundant with Q61 (because Q61 was skipped for sample members without instructional duties). Q62C (satisfaction with benefits) was not answered by many respondents (mostly part-timers) because it did not apply to them. It would be good to know if this group is dissatisfied with the benefit or dissatisfied because of not being offered the benefit.

Questions 63 through 65. The order of questions Q63, Q64, and Q65 (retirement) should be changed to ask the two questions about age at retirement (Q63 and Q65) consecutively.

Question 66. Sample members complained that Q66 (income) was intrusive. Interviewers suggested that Q66C, Q66D, Q66E, and Q66F be combined into a single question about “other” (i.e., not from target institution) income. Interviewers thought this would help reduce refusals for these questions. Another suggestion was to place Q70 (household income) adjacent to Q66 and change the wording (“Do you have additional household income?”) to aid in resolution between the two amounts.

Question 84. Interviewers requested that Q84 (comments) remain in the full-scale interview to allow sample members the opportunity to express concerns or provide other information they deem important. They felt they could use this as an incentive to get the sample member to complete the interview.

Additional issues. The help desk staff stated that many sample members were unwilling to change the settings on their computers (i.e., cookies, Java) in order to complete the survey on the web.

The length of the interview, particularly slow page load times, was problematic. Interviewers indicated that web delays disrupted the flow of the interview; they expressed concern that inexperienced interviewers in the full-scale study, faced with slow system response, would not be adept at filling the void. Interviewers requested putting more than one question on a page to reduce the number of page loads; they foresaw no problems with scrolling down the screen to access questions. Project staff stated that the U.S. Department of Education is working to increase the bandwidth on its server, which should speed the screen transition time of web-based surveys.

Problem Sheets

When interviewers encountered problems during an interview, a description of the issue was documented in the form of an electronic problem sheet. Project and interviewer supervisory staff regularly reviewed these problem sheets and worked on resolving these problems, as appropriate. Approximately 250 problem sheets were submitted during the faculty field test data collection period.

Problem sheets were used as follows:

- To address technical CMS issues. Interviewers documented details of the front-end issues so that a programmer could resolve them.
- To report system and web delays.
- To document sample member contact information as a workaround for front-end issues.
- To alert project staff to questions about sample member eligibility, contact information, and refusals.
- To record incorrect data that were entered (but not corrected) for a case. Interviewers noted cases where project staff needed to take specific action. Project and interviewer supervisory staff ensured that issues pertinent to data collection were resolved as soon as possible.

4.4 Data File Preparation

The following files were produced from the NSOPF:04 field test data:

- *Institution data file.* Contains institution interview data collected from 114 institutions. Topics include numbers of part-time and full-time faculty and instructional staff, tenure, employee benefits, and personnel evaluation.
- *Faculty data file.* Contains interview data collected from 914 faculty and instructional staff. Topics include employment, academic background, workload, scholarly activities, job satisfaction, compensation, sociodemographic characteristics, and opinions.

In addition to the coding described earlier in this chapter, the NSOPF:04 field test data were edited using procedures developed and implemented for previous NCES-sponsored studies. These procedures were tested again during the field test in preparation for the full-scale study.

During and following data collection, the institution and faculty data were reviewed to confirm that the data collected reflected the intended skip-pattern relationships. At the conclusion of data collection, special codes were inserted into the database to reflect the different types of missing data. A variety of explanations are possible for missing data. For example, an item may not have been applicable to certain respondents or a respondent may not have known

the answer to the question. Table 4.18 lists the set of consistency codes used to assist analysts in understanding the nature of missing data associated with NSOPF data elements.

Table 4.18 Description of missing data codes: 2003

Missing data code	Description
-1	Don't know
-3	Not applicable (item was intentionally skipped)
-5	Not applicable (item was asked but respondent indicated it was not applicable)
-7	Item was not reached (partial interview)
-8	Item was not reached due to a programming error ¹
-9	Data missing, reason unknown

¹A programming error related to form Q37 for the subset of respondents who taught more than eight classes during the 2002 Fall term (Q35A1>8) was discovered during data collection and corrected. The error prevented the Q37 data from being recorded for five cases.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Skip pattern relationships in the database were examined by systematically running cross-tabulations between gate items and their associated nested items. In some instances, gate-nest relationships had multiple levels within the instrument. That is, items nested within a gate question were themselves gate items for additional items. Therefore, validating the gate-nest relationships often required multiway cross-tabulations to ensure the proper data were captured.

The data cleaning and editing process for the NSOPF:04 field test data files consisted of the following steps:

- Step 1.** *Review of one-way frequencies for every variable to confirm no missing or blank values and to check for reasonableness of values.* This involved replacing blank or missing data with -9 for all variables in the instrument databases and examining frequencies for reasonableness of data values.
- Step 2.** *Review of two-way cross-tabulations between each gate-nest combination of variables to check data consistency.* Legitimate skips were identified using the interview programming code as specifications to define all gate-nest relationships and replace -9 (missing values that were blank because of legitimate skips) with -3 (legitimate skip code). Additional checks ensured that the legitimate skip code was not overwriting valid data and that no skip logic was missed. In addition, if a gate variable was missing (-9) then the -9 was carried through the nested items.
- Step 3.** *Identify and code items that were not administered due to a partial faculty interview.* This code replaced -9 and -3 values with -7 (item not administered) based on the section completion indicators. The -7 code allowed analysts to easily distinguish items not administered from items that were either skipped or simply left blank.
- Step 4.** *Identify items requiring recoding.* During this stage, previously uncodeable values (e.g., text strings) collected in the various coding systems were upcoded, if possible (see earlier sections in this chapter on other specify coding, CIP coding, and IPEDS coding). Typically, logical imputations are implemented at this stage to assign values

to missing items whose values could be implicitly determined (i.e., the item was appropriately skipped). This was not done in the field test due to time constraints.

Step 5. Final check of data. One-way and two-way frequencies on all variables were regenerated and examined.

Concurrent with the data cleaning process, detailed documentation was developed to describe question text, response options, recoding, and the “applies to” text for each delivered variable.

4.5 Conclusion

The goal of this chapter was to evaluate the quality of the data collected in the NSOPF:04 field test. The major findings of these evaluations are as follows:

- With regard to list quality, IPEDS counts were often smaller than those obtained from the institutional questionnaire or tallied faculty lists, due to definitional differences. This shortage was more pronounced for part-time faculty.
- Institution questionnaire and tallied faculty list counts were relatively more consistent with each other, with 89 percent being within + or – 25 percent of each other for full-time faculty and 86 percent for part-time faculty.
- Item nonresponse was below 10 percent for all but 2 of the 83 items in the institution questionnaire and for all but 11 out of the 250 items in the faculty questionnaire.
- Web respondents to the faculty survey were significantly more likely to use the “don’t know” response option (available for 6 items in the instrument) than were CATI respondents. This was not unexpected, given that the “don’t know” option was visible to web respondents whereas CATI respondents were not read that option.
- The temporal stability of a subset of faculty items was evaluated using a reinterview. Of the 26 items evaluated, 15 had percent agreement over 90 percent, 6 had percent agreement between 80 and 90 percent, and 5 had percent agreement less than 80 percent. There were no statistically significant modal differences in percent agreement for any of these items.
- Resolution screens were effective in reducing the amount of inconsistent data collected in the faculty instrument.
- Nine of the 113 forms (screens) in the faculty instrument had help text access rates greater than 10 percent, suggesting that there were problems with the wording or lack of information provided.
- Four screens with “other, specify” verbatim strings were evaluated and additional response options were proposed for addition to the full-scale instrument.

- A 10 percent recoding of CIP verbatim strings (during the data file editing stage of the project) showed that 69 percent were coded correctly, 21 percent were incorrectly coded, and 10 percent of the strings were too vague to determine whether they were correctly coded. There were no significant modal differences in the coding results.
- Fifty-three of the approximately 1,500 institutions coded during data collection were initially deemed uncodeable. Based on the school information collected, 43 of these were positively identified and recoded during the data file editing stage of the project.

In addition to these evaluations of data, respondent feedback (an open-ended question at the end of both the institution and faculty questionnaires), interviewer feedback (problem sheets, quality circle meetings, and an interviewer debriefing) and project staff monitoring provided information that will inform the full-scale instrumentation. Plans for the full-scale study, and the institution and faculty instruments in particular, are the focus of chapter 5.

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Chapter 5

Plans for the Full-Scale Study

The primary goal of the National Study of Postsecondary Faculty (NSOPF:04) field test was to test procedures and inform planning for the full-scale study. Overall, the essential aspects of the field test study—including sampling design, list collection, instrumentation, institution and faculty data collection, and data editing—were successfully conducted, as documented in chapters 3 and 4. Planned changes, based on the field test experience, are summarized below.

5.1 Incentives

The results of the field test incentive experiment supported the hypotheses that offering incentives would significantly increase the response rate during the first phase of data collection and increase the completion rate during the computer-assisted telephone interviewing (CATI) nonresponse follow-up phase of data collection. Based on these findings, it is planned that incentives will be offered to all sample members during the web early-response period and again during the CATI nonresponse period for the full-scale study. Because there was no significant difference in response rates for those who were offered \$20 versus \$30 during the early incentive phase, the use of a \$20 incentive to encourage early response is planned for the full-scale study. The use of a \$30 incentive is planned for nonresponse conversion.³⁶

5.2 Instrumentation

Based on analyses of the NSOPF:04 field test data for the institution and faculty/instructional staff questionnaires, interviewer debriefings, monitoring of interviews, examination of the open-ended comments provided by the respondents, and comments and rankings of the NSOPF Technical Review Panel, several pertinent recommendations emerged for the NSOPF:04 full-scale study. These actions should improve the quality of the data collected with the instruments, improve the efficiency of the electronic data collection, and (importantly for the faculty/instructional staff questionnaire) reduce the overall time to complete the instruments.³⁷

Institution. While the average time to complete the NSOPF:04 field test institution questionnaire was 27 minutes, considerably less than the goal of 50 minutes for the study, it is likely that processing efficiency can be increased nonetheless for the full-scale study. The instrumentation design for the full-scale study will incorporate these efficiency-gaining steps, including reducing database table sizes, reducing the volume of text transported between

³⁶ This was our request to the Office of Management and Budget, however, the final decision was to offer a \$30 incentive for both early response and nonresponse to make them equitable. See the methodology report for the full-scale study for detailed information on incentives used in the full-scale study.

³⁷ In addition to these planned changes, the Department of Education doubled its Internet connection bandwidth shortly after the end of the NSOPF:04 field test. This step is likely to improve data collection performance for the full-scale study.

respondents’ computers and the instrument server for each instrument screen, and reducing the information stored in each data table (e.g., 8-byte vs. 1-byte variables for yes/no responses).

In addition, several institution items could benefit from revision for the full-scale study. We plan to update instrument forms, help screens, and informed consent for the full-scale study (e.g., change target time period to “2003 Fall term”). Based on field test monitoring and timing analysis, we concluded that help screens were unnecessary and will be removed from the full-scale instrument. Changes planned for the institution questionnaire appear in table 5.1.

Table 5.1 Changes to institution questionnaire items planned for the full-scale study: 2003

Item	Planned change
1A–1B	Change data collection “flow” for the instrument. Allow respondents to temporarily skip items 1A– 1B (numbers of full-time and part-time faculty and instructional staff at target institution) and complete later instrument items.
2	Revise wording for response option C (number of new hires).
10A–10B	Add medical, dental, disability, and life insurance items to the stem wording to make this question on employment benefits comparable to 15A; expand response options from yes/no to all/some/none.
11	Expand response options from yes/no to all/some/none.
15A–15B	Expand response options from yes/no to all/some/none.
19	Revise name of section heading (Assignment of Undergraduate Instruction) and item stem B (including adjuncts).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

Faculty. In order to achieve the instrumentation goal for a 30-minute self-administered web questionnaire or CATI interview with faculty and instructional staff, the time to complete the instrument, as demonstrated during the NSOPF:04 field test, must decrease by 12 minutes. Procedures and approaches planned for the full-scale study that are expected to reduce the time to complete the instrument include the following:

- Eliminate field test instrument items from the full-scale study faculty/instructional staff instrument to shorten the time to complete. Table 5.2 describes the planned deletions. Our priorities for selecting items were based on each item’s policy relevance, historical use in congressionally mandated or other National Center for Education Statistics analytical reports, rankings of the Technical Review Panel concerning the item, and population size upon which the instrument item can be generalized. Based on the field test per item timing analyses, these deletions will shorten the interview by approximately 7 minutes.
- Implement efficiency-gaining activities, as noted above for the institution questionnaire, to improve information transmission and data reading/writing performance for the instrument. In addition, the increase in U.S. Department of Education bandwidth (implemented at the end of the field test) is expected to reduce transmission times in the full-scale study.

Table 5.2 Faculty and instructional staff questionnaire items planned for deletion and amount of time saved from the full-scale study: 2003

Item	Label	Time saved (seconds)
Total		449.0
Q7	Part-time faculty: years employed part time	9.8
Q17B	Holds Ph.D. in addition to professional degree	0.3
Q17C	Year received doctoral degree	0.0
Q17C2VS	Doctoral field—verbatim	0.0
Q17C2CD	Online coding: doctoral field	0.0
Q17C3	Online coding: doctoral degree institution (name, city, state)	0.2
Q17D2	Online coding: bachelor's degree institution (name, city, state)	38.5
Q19C	Number classes taught full time/part time at other postsecondary institution	3.9
Q20	Non-postsecondary education jobs related to teaching field	6.1
Q22	Total number of postsecondary educators employed as faculty	13.3
Q25	First postsecondary faculty position—academic rank	6.9
Q29	Previous job related to teaching field	10.7
Q30	Years teaching in postsecondary institutions	9.1
Q34A–Q34D	Percentage allotment of other time	76.4
Q40A–Q40G	Uses of website	24.6
Q43A–Q43D	Plan/develop instruction/curriculum/employment opportunities	51.9
Q44A–Q44F	Training opportunities	56.0
Q45	Hours professional training in 2003	27.1
Q52AiCAT	Categorical items for nonresponse follow-up to Q52AA–Q52AG	6.3
Q58	Primary funding source	6.9
Q59	Number of grants/contracts	7.8
Q60A	Total funding grants/contracts	3.5
Q60B	Range total funding grants/contracts	0.7
Q63	Age expecting to stop working at postsecondary institution	20.3
Q76A–Q76E	Type of disability	0.9
Q78	Number of dependents	14.1
Q84	Respondent comments and suggestions	53.7

NOTE: Plans for item deletion were developed based on examination of timing reports, use of the item in previous reports, monitoring of interviews, reliability testing, and rankings of the item by project staff and Technical Review Panel members. Estimates of time saved are based on the total time spent on a given form (on-screen plus transit time) summed across all cases that reached the form in the field test, divided by the number of completed surveys (n=914).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Study of Postsecondary Faculty (NSOPF:04) field test.

- Develop and implement an online autocoding routine for the academic disciplines or fields collected during the interview. (During the field test, Classification of Instructional Program [CIP] codes were identified using drop-down boxes for each sample member's fields of teaching, scholarly activity, and highest degree. The field of teaching coding took 42 seconds, on average [49 seconds for self-administered respondents and 36 seconds for CATI respondents].) The autocoding utility will match respondent-provided verbatim strings for teaching (Q16VS), highest degree (Q17A3VS), and research (Q54VS) to a data table of CIP codes, and will ask

respondents for confirmation. (The current online coding system will be used for all discipline strings that do not autocode successfully.)

- Revise and more closely target the online help text for all instrument screens to ensure that the help provided to respondents is necessary and sufficient for this purpose. This will involve moving some of the help text to the questionnaire screens and eliminating unneeded help text for several items.
- Improve item wording, in particular screen fills to shorten item wording, and combine screens to reduce the numbers of data transmissions.

While it is impossible to accurately estimate the impact of these actions, they are projected to yield a 30 minute interview.

5.3 Institution Contacting and Data Collection

Early contacting. Timely submission of faculty lists has been a chronic problem on past iterations of NSOPF. Many institutions lack the resources to participate in nonmandatory studies, and other institutions put survey requests through lengthy internal review processes (institutional review boards [IRBs], faculty senate discussion, etc.). Although the total effect of combining data collection for NSOPF with the National Postsecondary Student Aid Study (NPSAS) under the National Study of Faculty and Students (NSoFaS) is unclear at this time, it is unlikely to alleviate these problems, which continue to negatively impact the data collection schedule. To ensure completion of the full-scale NSOPF and NPSAS studies in the abbreviated timeframe available, early contacting of institutions is planned to facilitate identification and resolution of problems (e.g., IRB and faculty senate requirements) prior to data collection.

Web forms and instruments. One of the changes made for the NSOPF:04 field test was to eliminate the paper version of the institution questionnaire, the “Designation of Coordinator” form, and other documentation. The overwhelming majority of respondents were, indeed, able to complete the institution questionnaire online, with only a handful completing the instrument over the phone or faxing it. While the “Designation of Coordinator” form was often completed by phone, this was also true in past NSOPF iterations, and the absence of a paper form did not lead to complaints from institutions. The availability of these forms on the website helped eliminate the delays caused by remailing. Because this elimination of paper forms in the field test was successful, the same methods are planned for the full-scale study.

Institution questionnaire data collection. Although the institution questionnaire is designed to be self-administered, in each cycle of NSOPF, a significant number of institution questionnaires have been completed through direct “interviewer assistance.” In such a case, the interviewer calls various offices and individuals at the institution to collect the data, often completing the questionnaire in installments. Due to the schedule constraints of the full-scale study, we plan to begin making these calls immediately after the deadline for completing the institution questionnaire has passed. Moreover, it may be possible to contact respondents for additional information by more efficient electronic means, using e-mail addresses provided by sample respondents for the instrument’s contact information item (20).

Twelve-state participation/collecting data at a system-wide level. Lead representatives from the 12 states participating in the NPSAS oversample proved particularly helpful in two states—Georgia and New York—where system-level assistance was offered to institutions that otherwise would have refused participation. Indeed, without this assistance, a majority of institutions in both states would have refused. For the full-scale study, some states already have indicated they could provide all data for both NSOPF and NPSAS at a system-wide level. Given the fruitfulness of these arrangements during the field test, these arrangements will be explored and developed for the full-scale study.

5.4 Faculty Data Collection

Training. For the field test, NSOPF used only experienced CATI interviewers. The size of the full-scale sample likely will require a mixture of experienced and new interviewers. Recognizing the different needs of new interviewers, the focus of training will change somewhat. That is, more time will be spent on modules that are more difficult for new interviewers, such as locating and contacting sample members and coding programs.

Contacting. The use of letters and e-mails to contact sample members will continue in the full-scale study. In addition to the contacting materials described in chapter 2, two additional e-mail reminders could be sent during the early incentive period. The first of these would be sent approximately halfway through the early-response incentive period and the other would be sent about 3 days before the end of the early-response incentive period. Letters and e-mails would be modified to extend the offer of the incentive to all sample members.

Tracing. Recognizing the short timeframe for full-scale data collection, speedy locating of sample members is crucial in achieving the required response rate. To this end, an immediate review of contact data from the faculty lists is planned as they come in, sending all sampled cases for which only a school address is available to the tracing staff. Tracing specialists may then contact the institution to request additional contact information for the sample member. In addition, any cases of missing critical contacting information (such as telephone number) should be referred for tracing early in the data collection period. A review of e-mail addresses on the sample file provided by the institution is planned, with follow-up of any e-mail addresses that appear to be incomplete or incorrect for the school.

Identifying duplicate office telephone numbers (e.g., a department phone number) for an institution—and making a single call to request telephone numbers or other contact information for those sample members—would make tracing more efficient. In addition, interviewers for the full-scale study can collect updated e-mail addresses for those sample members, as well as office hours. This information will be used by telephone interviewers to more efficiently reach sample members at times when they are scheduled to be in their office, or via e-mail.

Data collection schedule. A 4-week early-response incentive period (rather than the 3-week period used in the field test) is proposed for the full-scale study. Allowing an extra week for the early-response period is expected to increase the response rate while decreasing CATI costs.

Data collection systems. Minor revisions to the CATI–Case Management System (CMS) are planned for the full-scale study to better serve the NSOPF population. In particular, a place to enter and store sample member e-mail address and office hours is needed, as is an indicator to distinguish between office and home telephone numbers to target the appropriate number to call at any given time of day. Ongoing work continues to improve the efficiency and performance of this system.

5.5 Other Issues

In addition, development of data processing/edits, imputation plans, disclosure avoidance plans, and weighting and standard error plans will continue, as will the setting up of procedures for creation of the Electronic Codebook and Data Analysis System ahead of time so that the final data files and reports can be prepared quickly once data collection ends. The outline and tables for the first set of published results could be established during data collection, so that this publication also could be prepared very quickly following the end of data collection.

5.6 Conclusion

In conclusion, the plans for the full-scale NSOPF are as follows:

- The procedures used in the NSOPF field test worked well and will be used, with modification as needed, for the full-scale study.
- The sampling design and procedures for the field test were successful and will be implemented in the full-scale study.
- The results of the incentive experiment have led to the plan to offer incentives to all faculty sample members in the full-scale study in an effort to reach response rate goals.
- The institution and faculty websites were well-received, requiring only minor modifications for the full-scale implementation.
- The institution instrument requires very minimal revision.
- The web-based faculty instrument was effective for self-administration and as a telephone interview. Modifications to shorten it to a 30-minute interview, as well as minor changes to question wording in response to suggestions from the Technical Review Panel (see appendix G), will be implemented for the full-scale study.
- Minor adjustments to the CATI–CMS front-end system are expected to improve the documentation of contact information.
- More efficient tracing procedures are planned for the full-scale study, along with more focused training of telephone interviewers to address the various levels of experience.

References

- Agresti, A. (1984). *Analysis of Ordinal Categorical Data*. New York, NY: Wiley & Sons.
- Berger, A., Kirshtein, R., Zhang, Y., and Carter, K. (2002). *Developing the 2004 Faculty Survey: Themes from the Literature on Postsecondary Education*. Washington, DC: American Institutes for Research.
- Berlin, M., Mohadjer, L., Waksberg, J., Kolstad, A., Kirsch, I., Rock, D., and Yamamoto, K. (1992). An Experiment in Monetary Incentives. In American Statistical Association (Ed.), *Proceedings of the American Statistical Association Section on Survey Research Methods* (pp. 393-398). Alexandria, VA: American Statistical Association.
- Charleston, S., Riccobono, J., Siegel, P., Link, M., Dudley, K., and Cominole, M. (2004). *National Postsecondary Student Aid Study 2004 (NPSAS:04) Field Test Methodology Report* (NCES 2004-160). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Chromy, J.R., and Horvitz, D.G. (1978). The Use of Monetary Incentives in National Assessment Household Surveys. *Journal of the American Statistical Association*, 73, 473-478.
- Chromy, J.R. (1987). Design Optimization with Multiple Objectives. *Proceedings of the American Statistical Association, Section on Survey Research Methods*. San Francisco, CA.
- Church, A.H. (1993). Estimating the Effect of Incentives on Mail Survey Response Rates: A Meta-Analysis. *Public Opinion Quarterly*, 57, 62-79.
- DeRouvray, C., and Couper, M.P. (2002). Designing a Strategy for Reducing “No Opinion” Responses in Web-Based Surveys. *Social Science Computer Review*, 20(1):3-9.
- Education Sciences Reform Act of 2002*. (2002). Public Law 107-279, Title I, Section 153. Available: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_public_laws&docid=f:publ279.107.pdf
- Kendall, M. (1945). The Treatment of Ties in Rank Problems. *Biometrika*, 33: 81-93.
- Kulka, R. (1992). *A Brief Review of the Use of Monetary Incentives in Federal Statistical Surveys*. Paper presented at the Council of Professional Associations on Federal Statistics/OMB Symposium on Providing Incentives to Survey Respondents. Cambridge, MA: Harvard University.
- Kulka, R. (1994). *The Use of Incentives to Survey “Hard-to-Reach” Respondents: A Brief Review of Empirical Research and Current Practice*. Paper prepared for the Council of Professional Associations on Federal Statistics Seminar on New Directions in Statistical Methodology. Bethesda, MD: Author.

References

- Singer, E., Gebler, N., Raghunathan, T., VanHoewyk, J., and McGonagle, K. (1999). The Effect of Incentives on Response Rates in Face-to-Face, Telephone, and Mixed Mode Surveys. *Journal of Official Statistics*, 15, 217-230.
- Warriner, K., Goyder, J., Gjertsen, H., Hohner, P., and McSpurren, K. (1996). Charities, No; Lotteries, No; Cash, Yes. *Public Opinion Quarterly*, 60, 542-562.
- Zimble, L. (2001). *Background Characteristics, Work Activities, and Compensation of Faculty and Instructional Staff in Postsecondary Institutions: Fall 1998* (NCES 2001-152). U.S. Department of Education. Washington, DC: National Center for Education Statistics.