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ABSTRACT

This notebook contains 21 standards established by the Center for Educational Statistics (CES); CES legislation; and a description of the CES publication and publication review processes. The publication clearance procedures and the external advice and peer review policies are established by the Office of Educational Research and Improvement (OERI) of which the CES is a part. The standards described here cover all phases of the Center's work, including (1) planning; (2) Request for Proposals (RFP) development and contract monitoring; (3) implementation, data collection and processing; (4) release and publication of data; and (5) sampling and non-sampling error. Each standard has a three-field reference number, encoding the year the standard was implemented, the subject group of the standard, and its sequence within the subject group. These standards are intended as guidelines for CES staff and contractors in their data collection, analysis, and dissemination, and for users of the data in making appropriate applications of CES information. Appendices include the General Education Provisions Act, Sections 406 (mandating the Center for Education Statistics) and 405 (mandating the National Assessment of Educational Progress), the Carl D. Perkins Vocational Education Act, Part C, Sections 421, 422, and 423, and a statement of OERI's external advice and peer review policy. (JGL)

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# STANDARDS & POLICIES

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Office of Educational Research and Improvement  
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## ACKNOWLEDGEMENTS

This notebook of CES standards and policies was prepared in the Center for Education Statistics (CES), Office of Educational Research and Improvement (OERI), U.S. Department of Education, under the general direction of Iris Silverman, Office of the Director.

Elizabeth VanderPutten, under contract to DRC, Washington, D.C., is the principal author of the standards. Her work was supplemented by Chuck Cowan, CES Chief Statistician who wrote a number of the standards after joining CES in September 1986, and Gary Phillips, Chief, Cross-Sectional and Special Studies Branch, Education Outcomes Division, CES, who wrote the standard on educational tests.

Those CES staff whose assistance requires a special acknowledgement are: Dennis Carroll, William Freund, Jeffrey Owings, Samuel Peng, Mary Williams and Douglas Wright.

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## FOREWORD

I am very pleased to announce the adoption of standards for the Center for Education Statistics. This notebook contains the full set of standards, adopted as of March 16, 1987. It also contains CES legislation and the CES publication review process.

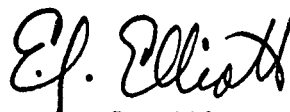
CES standards must be followed by all Center staff and contractors:

- o Performance agreements for Center staff are to include a section on responsibilities to adhere to and administer the standards.
- o All Requests for Proposals (RFP's) must include a section referencing the standards and requiring their use in work conducted for the Center.
- o New staff to the Center will be introduced to the structure and mission of the Center and each of the standards.

In the fall, the Chief Statistician will initiate a formal evaluation of the standards program to ensure that the standards have been implemented in all phases of the Center's work, and to review their operational feasibility. We will probably find some inconsistencies among the standards as we work with them, and these will be reconciled during the review and revised. In a year, we expect to reissue the standards.

Adoption of a set of written standards is important to any Federal statistical agency. They codify how we expect to behave professionally, and indicate the basis on which we expect to be judged by our peers in the statistical community. They represent the minimum level of quality and effort we would expect in any of our efforts or those of our contractors and grantees. For the Center, they provide a means for and assurance of consistency between and within the studies the Center conducts. Finally, users of Center data have before them clear documentation of methods and principles the Center employs in the collection of data.

I consider adoption of the standards to be the Center's most visible declaration of commitment to the highest quality in all of its products.



Emerson J. Elliott  
Director

## INTRODUCTION

### Purpose

This notebook contains a compendium of the standards of the Center for Education Statistics, CES legislation and a description of the CES publication review process. It is intended for CES staff and contractors to guide them in their data collection, analysis, and dissemination activities. It also presents a clear statement for contractors and users of CES data regarding how the data should be collected in CES surveys and the limits and acceptable applications for the use of CES data. With the adoption of written standards, we expect that CES products and procedures will become more uniform in their collection and application.

### Background

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

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

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

This document is the culmination of the reviews and discussions of Center staff with outside experts and advocates. The number of standards has varied, as has the content of each during the developmental period. This first publication is the end product of a process of distilling the essential issues facing the Center, and determining how the Center can best meet its objectives in a professional manner. First drafts for many of the standards were reviewed by staff concerned with statistical data analysis or processing issues. These drafts were circulated to the entire Center staff, and then meetings were held with each of the Divisions to discuss changes to the standards and to get recommendations on additional standards needed. This process served both to introduce staff to the standards and to get the entire staff involved in the production of the standards.

## Status

There are currently 21 standards adopted by the Center, presented in this notebook. In the fall of 1987, a review of each of the standards will be conducted, with revisions issued in the spring of 1988. The review will consider whether the standards have been put into operation, what aspects of the standards have kept the standards from being fully implemented, whether there remain any gaps in the standards, and whether the standards are consistent among themselves. The standards will also be reviewed with an eye towards whether they are clear in setting forth attainable goals or present instead prosaic but unattainable ideals.

## Contents

This notebook contains eight sections:

- o Standards on Planning
- o Standards on RFP Development/Contract Monitoring
- o Standards on Project Implementation/Data Collection/Processing
- o Standards on Release/Publication of Data
- o Standards on Sampling and Non-Sampling Error
- o CES Legislation
- o Publication Policy
- o Other

Finally, note that each standard has a three-field reference number. The first field refers to the year the standard was implemented, the second field refers to the subject group of the standard, and the last field is the sequence number of the standard within its subject group. These numbers have been added to facilitate cross references among the standards.

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SUBJECT: STANDARD FOR PLANNING STATISTICAL SURVEYS  
EFFECTIVE DATE: 12/08/86

CES STANDARD 86-01-01

PURPOSE: To ensure that the surveys conducted by CES are thoroughly planned in terms of goals, related surveys and research, methodology, implementation and user needs.

- o CES adopts as its standard for planning OMB Directive No 1: Standards for Statistical Surveys
- o The survey must be justified in terms of information needs, hypotheses to be tested or problems to be solved.
- o Related studies, surveys and reports of Federal and non-Federal sources must be reviewed to ensure that part or all the data are not available from some existing source or could not be more appropriately obtained by adding questions to an existing survey sponsored by CES or other agencies.
- o Representatives of institutions or groups from whom information will be collected and/or which will use the data must be consulted.
- o A study plan must be developed that analyzes target population and extent of coverage; sampling; frequency and timing; method of collection; considerations of sampling and nonsampling errors; evaluation of survey data; allowance for pretests and pilot tests; provisions for follow-up; time lines and milestones; and cost estimates.
- o A preliminary analysis plan must be developed that identifies analysis issues, major variables and proposed statistical techniques.
- o A preliminary publication and dissemination plan identifying primary users and major publications tailored for these users must be developed.

RELATED STANDARDS:

- o OMB Directive No 1: Standards for Statistical Surveys, Statistical Policy Handbook, Federal Statistical Policy and Standards, U.S. Department of Commerce, 1978
- o OERI Peer Review Policy

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Planning Statistical Surveys Checklist
- o Standard Form 83 (OMB Clearance)
- o Statistical Policy Working Paper 9: Contracting for Surveys, Office of Management and Budget, 1983



## CHECKLIST

### PLANNING STATISTICAL SURVEYS

#### A. Purpose of the Survey

1. The survey is justified in terms of information needs, hypotheses to be tested or problems to be solved.
2. The specific purposes are consistent with appropriate legislative mandates and agency priorities.
3. Research, policy and/or programmatic questions were used to guide the development of the survey.

#### B. Related Studies and Surveys

1. Existing information or related surveys were reviewed to ensure that a new data collection effort is needed.
2. Research and analysis reports on similar topics were reviewed during the design of the study.
3. Problems identified in previous or related surveys are corrected or documented.

#### C. Outside Consultation

1. Representatives of institutions or groups from whom data will be collected and potential users of the data were consulted during the planning process.
2. OERI Peer Review Policy was followed.

#### D. Survey Plan

1. The target population and extent of coverage are identified and are appropriate for the goals of the survey.
2. At least a preliminary sample design is developed including
  - a. definition of the sampling frame at each stage of sample selection
  - b. criteria or definitions of strata at each stage
  - c. strategy for sample selection at each stage (i.e., stratification, etc.)
  - d. levels of precision for critical variables
3. The proposed frequency and timing of the survey are justified in terms of the goals of the survey and the need to limit data collection burden.

## CHECKLIST FOR PLANNING STATISTICAL SURVEYS

4. The primary method of data collection is identified and is appropriate for the survey goals and budget.
  5. Plans for pretesting and pilot testing are developed.
  6. Provisions are made to evaluate survey results, particularly for repetitive surveys.
  7. Plans for processing and tabulating the data are consistent with the goals and purposes of the project.
    - a. Procedures for editing, imputing, coding and tabulating the data are developed.
    - b. Quality control procedures consistent with CES Standard for Data Tape Preparation are planned.
    - c. Tabulation plans, including dummy tables, are developed.
  8. Optimal effort is given to reducing the impact of sampling and non-sampling error within the context of costs and benefits to be obtained.
    - a. Plans for estimating sampling error for probability samples are developed.
    - b. The potential magnitude of non-sampling errors including reporting errors, response variance, interviewer and response bias, non-response, imputation strategies and potential effects are identified and analyzed.
    - c. Alternative research designs were compared in terms of potential sampling and non-sampling errors.
  9. Provisions are made for followup on nonresponse.
  10. Timelines and milestones for all major aspects of the survey are identified.
  11. Government cost estimates are developed.
- E. Preliminary Analysis Plan
1. Analysis issues are identified.
  2. Critical variables are identified.
  3. Statistical techniques to be used in analysis are identified.
- F. Publication Plan
1. The primary audience(s) for the survey data are identified.
  2. Proposed major publications tailored for specific audiences are identified.

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SUBJECT: STANDARD FOR INDEPENDENT EVALUATION OF SURVEYS  
EFFECTIVE DATE: 03/16/87

CES STANDARD 87-01-02

PURPOSE: To ensure that the data collected are of the highest quality consistent with cost and other constraints, and that corroborating evidence can be found regarding the information collected in CES surveys.

- o At the time a survey is being planned and developed, a research plan should also be developed that will allow the independent evaluation of the survey. This plan should identify possible sources of nonsampling error in the survey and indicate how these will be dealt with and measured. In addition, the plan should list how data will be obtained for the evaluation of the survey: through checks for internal consistency, external comparison against other data sources, and experiments built into the survey to study alternative data collection methodologies.
- o Where possible, the pretest for a survey should include some experiments designed to study sources and control of nonsampling error. Normally, no survey should be initiated without a formal pretest and evaluation of the pretest results.
- o Items should be identified that can be used in the internal checking process once the data has been collected in a survey. Tables should be generated to study this data before any other set of data from the survey, and results of this analysis should be used to correct the data if outliers are found or data are found to be inconsistent.
- o Sources outside the data collected in a survey should be identified and put to use to analyze the survey results. Again, tables should be generated and compared to these outside sources to help ensure the validity of the data before analysis of the data begins.
- o The study plan for the survey or data collection operation should have an ongoing research plan built into the study design. This means that consideration should be given to having a small independent replicate of the sample preidentified for use as a test group while the survey continues. This is especially important for longitudinal studies, where design changes, new items, or other effects introduced to the survey without prior testing can severely affect the time series.

RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys 86-01-01
- o CES Standard for Testing Data Collection Instruments 87-03-01
- o CES Standard for Technical Documentation in Data Releases 87-04-02

RELATED CHECKLISTS AND FORMS:

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SUBJECT: STANDARD FOR RFP DEVELOPMENT FOR SURVEYS  
EFFECTIVE DATE: 02/09/87

CES STANDARD 87-02-01

PURPOSE: To ensure that RFPs for survey research issued by the Center for Education Statistics contain the information necessary to enable all prospective offerors to be equally responsive in submitting a proposal, and to ensure that the proposals submitted address the needs of CES.

- o RFPs issued by CES for survey research should specify a technically sound survey design that is consistent with project objectives. For sample surveys, the statement of work should discuss the survey design including the sampling frame or method of obtaining the universe, method of selecting the sample at each stage, expected number of sampling units, and the sample size or required level of precision for estimates for key variables; data collection method; either a draft questionnaire or specific instructions on objectives, length of interview and data specifications; requirements for pretesting; ADP processing requirements; and weighting procedures. Under some circumstances, an RFP can require the offerors to propose a research design consistent with the survey objectives.
- o The Project Officer has primary responsibility for writing the scope of work of the RFP. The Project Officer must arrange for technical input prior to writing the scope of work from CES staff and, in accordance with OERI Peer Review Policy, outside experts from the Department of Education, other Federal agencies and universities, or the private sector. Input should occur at several points during the development of the survey, but is essential before final decisions are made on the survey design, and before final RFP preparation.
- o Evaluation criteria must include points for technical quality (understanding of the issues, sampling, interviewer training, field work, editing and coding); appropriateness and feasibility of proposed milestones; experience of the offeror, experience of key staff, and management plan. The distribution of points will depend on the nature of the procurement.

RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for Monitoring Survey Contracts, 87-02-02
- o CES Standard for Maintaining Contract Files, 87-02-03
- o CES Standard for Codes, Abbreviations and Acronyms, 87-03-05
- o CES Standard for Survey Documentation, 87-04-01
- o OERI Peer Review Policy

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Statistical Policy Working Paper 9: Contracting for Surveys, Office of Management and Budget, June, 1983.

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SUBJECT: STANDARD FOR MONITORING SURVEY CONTRACTS  
EFFECTIVE DATE: 02/09/87

GES STANDARD 87-02-02

PURPOSE: To ensure that contracts for GES surveys are performed as written, Project Officers have the following responsibilities.

o ADMINISTRATIVE RESPONSIBILITIES:

- Maintain a current contract file.
- Provide technical direction to contractors, as necessary and appropriate, depending on the type and terms of the contract.
- Review and make recommendations to the Contracting Officer as to the approval, disapproval, or other action to take concerning a contractor's submission of (or failure to submit) payment requests, deliverables, interim or final progress or financial reports, or any other requirements of the contract.
- Notify GES officials of developing problems, in a timely manner.
- Assure that the contractor has access to or use of government property or services as agreed to in the contract.
- Make recommendations on contract modifications, if necessary, and ensure that changes are made only after notification by contracts officer.
- Prepare closeout documentation.

o QUALITY ASSURANCE RESPONSIBILITIES:

- Hold meetings with the contractor and advisory panels which the contractor must attend.
- Insure that OERI peer review policy and guidelines with reference to quality control are followed.
- Monitor critical stages in the development and implementation of the survey to ensure that the objectives of the survey are met. Critical stages include sample selection, questionnaire development, training of data collectors, coding of responses and preparation of data documentation. Project Officer should also monitor the overall response rates and, where appropriate, critical item response rates.
- Provide written reviews of contract deliverables for completion, quality and accuracy. Reviews should be completed within two weeks of receipt.
- Prepare summary of project history and results.

## STANDARD FOR MONITORING SURVEY CONTRACTS

### RELATED STANDARDS:

- o CES Standard for Maintaining Contract Files, 87-02-03
- o CES Standard for Survey Documentation 87-04-01
- o CES Standard for Maintaining Confidentiality, 87-04-03
- o OERI Peer Review Policy

### RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Contract Monitoring for Program Officials, Departmental Directive, U.S. Education Department, 1987.
- o Statistical Policy Working Paper 9: Contracting for Surveys, Office of Management and Budget, June, 1983.
- o The Negotiated Contracting Process: A Guide for Project Officers. U.S. Department of Health, Education and Welfare, 1977.

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SUBJECT: STANDARD FOR MAINTAINING CONTRACT FILES  
EFFECTIVE DATE: 02/09/87

CES STANDARD 87-02-03

PURPOSE: To ensure that contract files contain all information about the requirements and conduct of a contract.

- o Project Officers are responsible for maintaining an up-to-date file on each contract. The file must be maintained for the same period as official files (those maintained in the contracting office) normally 6 years and 3 months after final payment has been made. This file will include:
  - Planning documents, notes from planning meetings, and comments from peer reviewers.
  - Copies of relevant legislation and Department policies, if applicable.
  - The RFP; PAR, and Government cost estimates.
  - The Recommendation for Award memo and Technical Evaluation Report including individual evaluations of panel members.
  - Contract and modifications.
  - Copies of approved vouchers.
  - Deliverables and copies of written reviews of the deliverables by the project officer and other peer reviewers.
  - Copies of signed correspondence between project officer or contract officer and the contractor.
  - Dated notes of meetings or substantive telephone conversations between project officer and contractor.
  - Dated notes of meetings or substantive telephone conversations with project officer and contract officer.
  - Approvals by Assistant Secretary and Director, CES.
  - OMB approval package and approval notifications.
  - Copies of technical documentation prepared in accordance with CES Standard for Survey Documentation.
  - Project Officer's summary and evaluation of the project.

RELATED STANDARDS:

- o CES Standard for Survey Documentation, 86-04-01
- o CES Standard for Monitoring Survey Contracts, 87-02-02
- o CES Standard for Maintaining Confidentiality, 87-04-03

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Comprehensive Records Disposition Schedules, 05-83, U.S. Department of Education

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SUBJECT: STANDARD FOR TESTING DATA COLLECTION INSTRUMENTS AND DATA COLLECTION SYSTEMS

EFFECTIVE DATE: 02/09/87

CES STANDARD 87-03-01

PURPOSE: To ensure that the data instruments and systems used by CES to collect data are adequately tested before a survey is conducted.

- o The Project Officer must review questionnaires to determine that each question is needed for the survey objectives and that overall the questions will provide the needed data.
- o Questionnaires developed for all CES surveys must be pretested for feasibility before field testing by the Project Officer, other CES staff and representatives of persons and groups who will participate in the survey. The questionnaire should be reviewed for clarity, flow of questions, adequacy of instructions and length of response time, appropriate grouping and sequencing of questions.
- o Once a questionnaire is developed it must be pretested in the field. Sample size for the pretest should be sufficiently large to identify potential problems and therefore should not be limited to fewer than ten to avoid OMB clearance procedures. In most cases, purposive sample designs for a pretest are preferable to probability samples in order to ensure that important subpopulations are included.
- o Provision for successive pretests should be made when the first indicates the need for a substantial change in the questionnaire or the system.
- o The method or system by which the data will be collected must also be tested. For face-to-face and pre-arranged telephone interviews this includes procedures for contacting respondents, setting up meeting times and places, notifying respondents of materials they may need to review or have at the interview, and other logistical considerations. For mailed questionnaires, procedures for sending and receiving the questionnaire, logging responses and follow-through on non-response must be tested.
- o For surveys based on an analysis of administrative records, a field-based test of the survey collection instrument must be done to ensure that the information requested is available without undue data burden; that definitions and instructions are provided and are comparable among the reporting units; and that appropriate staff to respond are identified.
- o Quality control procedures should be tested before beginning a major survey. Quality control procedures may include validity checking, data-editing, followup on non-response and data processing checks.

RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for RFP Development for Surveys, 87-02-01

RELATED CHECKLISTS, FORMS AND DOCUMENTS

- o Testing Data Collection Instruments and Data Collection Systems Checklist.



CHECKLIST  
TESTING DATA COLLECTION INSTRUMENTS AND DATA COLLECTION SYSTEMS

A. PURPOSE AND AUTHORITY

1. Purpose of the questionnaire is clearly stated including a description of how the data are to be used.
2. Clear, specific statements about who is requested to complete the questionnaire are included.
3. Clear statements on the authority to collect the information and on the voluntary nature of participation are on the first page of the form.
4. A Privacy Act statement and a statement regarding data confidentiality appear on the first page of the questionnaire.
5. Reference is made to any groups officially supporting the survey.
6. OMB clearance number is placed in the upper right-hand corner of the first page of the questionnaire.
7. Expiration date, form number and edition dates are located on each page of the questionnaire.

B. DATA REQUIREMENTS

1. Each data element is needed to support the purpose of the survey.
2. Time requirements for completing the questionnaire is not excessive (in most cases, less than 30-45 minutes).

C. QUESTION CONTENT AND WORDING

1. Question structure (i.e. open-ended, multiple choice, etc.) is the most suitable for information requested.
2. Questions do not lead to biased answers.
3. Wording is geared to the particular respondents.
4. Double or compound questions are not used.
5. Only commonly accepted abbreviations are used.
6. Reference periods or dates are clearly specified.

D. FORMATTING

1. Questions on the same general topic are grouped together.
2. Skip patterns, clearly identified, are used to ensure that only appropriate questions are asked of each respondent.
3. Complex skip patterns and ambiguous questions are avoided.
4. Sufficient space is provided for responses.
5. Use of check boxes and preprinted data is maximized.
6. All items are numbered.

E. INSTRUCTIONS

1. All necessary definitions are provided.
2. Instructions are provided for each item on the form where necessary to avoid ambiguities or uncertainties.
3. Instructions for specific questions are numbered to correspond to the questions they explain and are located next to the question where feasible.
4. Instructions for returning questionnaire are provided.
5. A phone number is provided for respondent inquiries.

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SUBJECT: STANDARD FOR EDUCATIONAL TESTS  
EFFECTIVE DATE: 03/16/87

GES STANDARD 87-03-02

PURPOSE: To ensure that educational tests produced by the GES meet professional standards of integrity. GES adopts as its standard the "primary standards" specified in Standards for Educational and Psychological Testing (American Psychological Association, 1985). The standards apply to performance tests, questionnaires (such as rating scales), and behavioral observations.

- o Evidence of validity should be presented for each recommended use of the test.
- o Evidence of reliability and standard errors of measurement should be presented for each recommended use of the test.
- o The procedure used to develop tests should be clearly specified.
- o Test administration should be standardized.
- o Standardized scoring and reporting procedures should be followed.
- o Special testing conditions should be arranged for special populations of examinees.
- o The rights of test takers should be protected.

RELATED STANDARDS:

- o Standard for Planning Statistical Surveys, 86-01-01
- o Standard for Testing Data Collection Instruments, 87-03-01
- o Standard for Maintaining Confidentiality, 87-04-03

RELATED CHECKLISTS, FORMS AND DOCUMENTATION:

- o Standards for Educational and Psychological Testing, American Psychological Association, 1985

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## CHECKLIST

### EDUCATIONAL TESTS

#### A. Evidence of Validity

1. When a test measures a construct, evidence should be presented that the test scores are highly related to that construct (include inter-item correlations, bases for weighting subscores, theoretical basis for the construct, and a description of the construct-related validity study).
2. If a test is purported to be related to an outcome criterion, then evidence of the relationship between the test score and the outcome measures must be provided. Information should be available related to the rationale for choosing criteria, justification for selecting cut-scores, and a description of the criterion-related validity study.
3. When test content is especially important (as in achievement tests), content-related evidence of validity should be provided. Clear definition for the content universe, domain specifications, item specifications, and a description of the content-related validity study should be provided.

#### B. Evidence of Reliability and Standard Errors of Measurement

1. Methods of calculating reliability coefficients and standard errors of measurement should be reported (include equations, and a description of the reliability study).
2. The psychometric procedures underlying the calculation of reliability indices should be specified (such as classical measurement theory, item response theory, etc.)
3. Limitations in the reliability indices should be specified. For example, how does the index vary with changes over populations, the effects of adjustments for attenuation (e.g., due to restriction of the measurement range) and the effects of speededness (due to testing time limits).

#### C. Test Development Procedures

1. Domain definitions and specifications should be provided. Similarly item and test specifications should be clearly reported.
2. Item selection procedures should be indicated (including statistical item performance data, item bias information, and psychometric criteria for selection.)

#### D. Test Administration

1. Administration procedures should be standardized to reduce unwanted variation in test scores. The same administration manuals, training and testing conditions should be used.

CHECKLIST  
FOR EDUCATIONAL TESTS

2. Steps should be taken to insure test security, proper distribution and collection of materials, and a minimum of respondent burden.

E. Scoring and Reporting

1. Scoring procedures should be standardized, documented and checked for accuracy.
2. The analysis of item responses or test scores should be clearly described (such as scaling, norming, equating, etc.)
3. Score reports should be promptly reported in a standard format that is easy to read.
4. The generalizability and limitations of reported scores should be presented.

F. Special Testing Conditions

1. Testing modifications should be provided for examinees with handicapping conditions or language differences.
2. When feasible, the validity, reliability and other indices of test integrity should be investigated for special populations.

G. Rights of Test-Takers

1. Proper consent should be obtained prior to test administration.
2. Rights of confidentiality should be guaranteed for all uses of the data.

CENTER FOR EDUCATION STATISTICS  
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT  
U.S. DEPARTMENT OF EDUCATION

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SUBJECT: STANDARD FOR MINIMIZING SURVEY NONRESPONSE  
EFFECTIVE DATE: 03/16/87

GES STANDARD 87-03-03

PURPOSE: To ensure that studies routinely perform those actions necessary to study the causes of and to minimize both survey and item nonresponse.

- o Nonresponse (or total nonresponse) refers to the failure of the survey respondent, or for administrative record studies, of the person or organization providing the data, to provide any information in response to the data request. Item nonresponse refers to certain items in the data request being missing when initially a response is expected.
- o For total nonresponse, in studies conducted by the Center or its contractors, very serious efforts should be made to collect information not obtained initially in the survey. Callbacks with the respondents or data providers will be scheduled during and immediately after the data collection period. Records on the number of callback attempts and their outcome should be kept, and a final disposition of the case (the reason it continues as a nonresponse case) should be kept in lieu of a completed interview or shuttle form. Attempts should be made to determine characteristics of the nonrespondents for use in weighting and imputation.
- o For item nonresponse, key statistics to be collected will be identified in the analysis plan; some provision should be made in the field operations to monitor the responses on these items to ensure that no one interviewer (in a survey) has an exceptionally high item nonresponse rate for key items. The project officer should also consider a field or office edit that would require telephone followup for cases with key items missing.
- o The survey design should consider explicitly the motivation of respondents, and the kinds of messages and publicity that might improve total response.
- o In addition, well-designed survey or shuttle forms and well-trained interviewers or clearly written survey (shuttle) instructions will be the most efficient devices for ensuring a high response. Procedures for minimizing nonresponse must be well documented. These procedures should be reviewed as part of and in conjunction with any pretest of the survey questionnaire or the use of shuttle forms for administrative record data collection.

RELATED STANDARDS:

- o GES Standard for Planning Statistical Surveys, 86-01-01
- o GES Standard for Testing Data Collection Instruments, 87-03-01
- o GES Standard for Treatment of Item Nonresponse, 87-05-01

CENTER FOR EDUCATION STATISTICS  
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT  
U.S. DEPARTMENT OF EDUCATION

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SUBJECT: BENCHMARKS FOR DATA COLLECTION, PROCESSING, AND ANALYSIS  
EFFECTIVE DATE: 03/16/87 CES STANDARD 87-03-04

PURPOSE: To establish minimum levels for performance in surveys and studies conducted by the Center. The levels of data completeness and minimum levels of data required for processing procedures and analysis are established to ensure that researchers and users will have confidence in the quality of the data. Benchmarks are reference points for judging quality.

There are occasions when the benchmarks listed below are not appropriate to the study being conducted (e.g. certain types of experiments, pretests, or policy studies where a quick response is the highest priority). In these cases, the researcher will know in advance that the benchmarks are not appropriate to the study; the project officer should request an exception to the specific targets that he or she believes will not be met. This request must come in writing to the Chief Statistician and be part of the CES clearance process for the survey. The request must clearly state which targets or benchmarks will not be met, what the project officer's expectations are for the targets, and the reason why an exception should be granted. Reports for such studies must include in the technical appendices a statement about the deviation from the benchmarks including both the rationale for the deviation and the magnitude of the deviation.

- o The overall<sup>1</sup> survey target response rate specified in RFP's should be at least 90 percent for longitudinal surveys, 85 percent for cross-sectional surveys. In the case where the sample is selected hierarchically (e.g. schools, and then teachers within those schools), these rates apply to each hierarchy (e.g. 85 percent of schools responding, and then 85 percent of teachers within the responding schools, for an overall rate of  $85\% \times 85\% = 72.25\%$ ). Response rates for sample surveys are calculated on weighted data; response rates for census or administrative record data are based on unweighted data.
  
- o Within any stratum of a sample, the overall survey target response rate should be no less than 85 percent for longitudinal surveys and 80 percent for cross-sectional surveys. In the case where the sample is selected hierarchically, these rates apply to each hierarchy. Response rates for sample surveys are calculated on weighted data; response rates for census or administrative record data are based on unweighted data.

BENCHMARKS FOR DATA COLLECTION, PROCESSING,  
AND ANALYSIS

- o The target item response rate for each critical variable should be at least 85 percent (critical variables are defined in the analysis plan for the study). Response rates for sample surveys are calculated on weighted data; response rates for census or administrative record data are based on unweighted data.
- o Deviations from the benchmark figures given above should be anticipated in the planning phase of a survey. If the project officer expects the deviations to be severe, they should be documented in the analysis plan with a proposal as to how to minimize problems before they happen in the survey and a proposal regarding how the analysis of the data will adjust for deviations that cannot be overcome by the survey design.
- o If response rates and item response rates are lower than anticipated and fall below the benchmark levels, an analysis of the reasons for the low rates and the anticipated impact on the quality of the data must be conducted before any analysis of the survey data is done.
- o Variables with more than 30 percent missing data should not be used in analysis, except in tabulations where the missing data are tabulated as a separate category and clearly identified.
- o Weighting of sample data for nonresponse, when done by strata or within cells so that the weighting factors are calculated as ratios, should be based on a minimum of 30 respondents (unweighted) per cell. Cells that have fewer than 30 respondents should be collapsed with the "closest" cell with the fewest number of respondents. "Closest" is defined as logically closest, i.e. contiguous age categories or contiguous geographic areas that make substantive sense.
- o Weighting of sample data for nonresponse should also be done with caution. The ratio of the largest stratum nonresponse weighting factor to the smallest stratum nonresponse weighting factor should be no more than 5. In cases where the ratio is larger than this, the smallest stratum in terms of unweighted respondents should be collapsed with the "closest" cell with the fewest number of respondents.
- o Estimates of means, proportions, and totals should be computed from at least 30 respondents for each subgroup for which the estimate is made; estimates of ratios, rates, regression coefficients (in cases where pairwise deletion methods are used in computation of the correlation matrix), and similar multivariate statistics should be based on at least 30 respondents in both the numerator and denominator of each statistic when the data used come from a survey or the numerator and denominator come from different data sources, at least one of which is a survey. These minimums do not apply when the data come from a census or administrative record study not involving sampling.

BENCHMARKS FOR DATA COLLECTION, PROCESSING,  
AND ANALYSIS

- o Confidence levels for any results of statistical tests reported in a document should be at least 90 percent before the null hypothesis is rejected.
- o Confidence intervals around key statistics (as defined in the analysis plan) reported in a document or a table should be 95 percent confidence intervals and should be clearly identified as such.
- o There should not be more than 20 "simple" comparisons made within a bulletin or a report. "Simple" is defined as a t-test, chi-square test, or any other test that examines a simple hypothesis like the difference of means or proportions. Consideration must be given to use of multivariate techniques in analyses involving multiple variables, factors, or levels, and/or an analysis of overall error rates should be conducted where multiple comparisons and univariate variables are used.
- o Overall response rates (Ro) are to be calculated as the ratio of the number of completed interviews (see CES Standard 87-05-01) divided by the number of sample respondents drawn minus respondents considered out-of-scope (in a household interview this would be number of units sampled minus vacant units, condemned units, or units that have been converted from residential to business use):

$$R_o = \frac{\text{weighted \# of completed interviews}}{\text{weighted \# of units sampled} - \text{weighted \# of out-of-scopes}}$$

- o Item response rates (Ri) are to be calculated as the ratio of the number of respondents for which an in-scope response was obtained (i.e. the response conformed to acceptable categories or ranges) divided by the number of completed interviews for which the question (or questions if a composite variable) was intended to be asked:

$$R_i = \frac{\text{weighted \# of respondents with in-scope response}}{\text{weighted \# of completed interviews for which question was intended to be asked}}$$

- o When the items being studied are continuous or additive (e.g. number of teachers is discrete but additive, whereas affiliation categories are not), coverage rates should also be calculated. Coverage rates describe the relative loss of information because of size of the unit which gave an incomplete response, not the number not responding.

$$C_i = \frac{\text{weighted total of in-scope responses}}{\text{weighted total of completed interviews for which question was intended to be asked (includes imputed values)}}$$



BENCHMARKS FOR DATA COLLECTION, PROCESSING,  
AND ANALYSIS

RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for Testing Data Collection Instruments, 87-03-01
- o CES Standard for Minimizing Survey Nonresponse, 87-03-03
- o CES Standard for Treatment of Item Nonresponse, 87-05-01
- o CES Standard for Technical Documentation in Data Release, 86-04-02

CENTER FOR EDUCATION STATISTICS  
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT OF PRACTICE  
U.S. DEPARTMENT OF EDUCATION

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SUBJECT: STANDARD FOR CODES, ABBREVIATIONS AND ACRONYMS  
EFFECTIVE DATE: 03/16/87

CES STANDARD 87-03-05

PURPOSE: To provide uniform codes, abbreviations and acronyms for use in CES data collection and processing in order to facilitate the exchange of information and to ensure uniformity in CES publications.

o The following Federal Information Processing Standards (FIPS PUBS) are to be used in all CES publications:

- 5-1 States and Outlying Areas of the U.S.
- 6-3 County and County Equivalent of the States of the U.S. and D.C.
- 8-5 Standard Metropolitan Statistical Areas
- 9 Congressional Districts of the U.S.
- 66 Standard Industrial Classification Codes (SIC)
- 92 Standard Occupational Codes (SOC)

If it is not appropriate to use these codes, a justification in writing to the Forms Clearance Officer is needed as a part of the CES clearance process for the survey.

o The variables of "race" and "ethnic origin" are generally treated as two separate population characteristics. OMB has specified four minimum categories or race designation to be used in collecting and presenting data:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- White

o The designation "nonwhite" is not acceptable for use in the presentation of Federal Government data, and the term "color" is not acceptable for use by OERI. Therefore, the designations "black and other races" and "all other races" are used as collective descriptions of minority races when the most summary distinction between the majority and minority race is appropriate. "White," "black" and "all other races" are used when the distinction among the majority race, the principal minority race, and other races is appropriate. Similarly, the designation of a particular minority race or races with "white" and "all other races" is used if such a collective description is appropriate.

o Statistical data collections that include a question on race also should include a question to determine, at a minimum, whether an individual is or is not of Hispanic origin. The minimum detail expressed on ethnic background presented in tables must include "total," "Hispanic origin" and "non-Hispanic origin." More detailed groups must be organized in such a way that the additional categories can be aggregated into either Hispanic or non-Hispanic.

## STANDARD FOR CODES, ABBREVIATIONS AND ACRONYMS - (Continued)

- o The approved list of acronyms in the OERI Editorial Stylebook is to be used in all CES publications.
- o CES manuals and glossaries of definitions should be used in all CES surveys and publications. Pending a revision of this standard, which will include a dictionary of terms, glossaries must also be submitted for clearance.
- o Official national, State and international abbreviations are listed on pages 135-160 of the Style Manual of the U.S. Government Printing Office. These abbreviations will be used where appropriate in CES publications.

### RELATED STANDARDS

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for RFP Development for Surveys, 87-02-01
- o CES Standard for Survey Documentation, 86-04-01
- o CES Standard for Technical Documentation in Data Releases, 86-04-02

### RELATED FORMS, CHECKLISTS AND PUBLICATIONS

- o OERI Editorial Stylebook
- o Federal Information Processing Standards Publications (FIPS PUBS)
- o Race and Ethnic Standards for Federal Statistics and Administrative Reporting, Office of Management and Budget
- o Style Manual, U.S. Government Printing Office, 1984

CENTER FOR EDUCATION STATISTICS  
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SUBJECT: STANDARD FOR ROUNDING  
EFFECTIVE DATE: 02/09/87

CES STANDARD 87-03-06

PURPOSE: To assist researchers in attempting to summarize and study the data from a survey.

- o Before rounding figures for publication, decision must be made about the appropriate number of significant digits. The problem of implying a spurious degree of accuracy must be balanced with the need to have consistency between and within tables.
- o When adding, multiplying or dividing figures that have been rounded to different significant digits, the product can only be stated in terms of the number with the fewest significant digits. (If 4.5 and 5.75 are rounded numbers, the product can be stated only as 26, with 4.5 having two significant digits and 5.75 having three.)
- o Tabulations to produce summary data and computations performed for purposes of estimating standard errors should be done on unrounded numbers.
- o Sums of column (row) figures in a table should be derived using unrounded figures, with appropriate rounding of the total after its derivation. To handle the problem of column(row) figures not summing to a rounded total, an explanatory footnote should be used.
- o The final rounded value should be obtained from the original figure available, not from a series of roundings (e.g. 7.1748 can be 7.175 or 7.17 or 7.2 or 7 but not 7.18).
- o Percentages should generally be rounded to no more than one decimal place.
- o Specific rules to be used for rounding:

If the first digit to be dropped is less than 5, the last retained digit is not changed.

6.1243      6.124

If the first digit to be dropped is greater than or equal to 5, the last digit retained is increased by 1.

6.688      6.69

- o Documents need footnotes explaining cases where actual numbers are used in all calculations, and rounded results are presented which seem inconsistent.

RELATED STANDARDS:

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

CENTER FOR EDUCATION STATISTICS  
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SUBJECT: STANDARD FOR DATA TAPE PREPARATION  
EFFECTIVE DATE: 12/08/86

CES STANDARD 86-03-07

PURPOSE: To ensure that master data files prepared by CES staff and by contractors are fully useable by researchers in and outside the Center.

- o Data Set Names should identify the survey system, component, year and version number.
- o Tapes stored at the Department's central computer facility must be 9-track EBCDIC, 6250 BPI with IBM standard labels. Tapes in different formats will be produced to meet user requests.
- o File structure, record format and data element conventions must be consistent with CES checklist on "Data Tape Preparation."
- o OERI Form 27, Data Base Documentation, must be completed for all tapes. This includes:

Abstract or summary

Survey methodology including universe and sample,  
respondents, dates of coverage, frequency counts  
and response rates

File description

Record length, format and count

Data element definitions

- o A machine readable file with a file description and record layout information must be copied on all tapes prepared for public distribution.
- o If a SAS system file is prepared, appropriate documentation must be developed.

RELATED STANDARDS:

- o CES Standard for Survey Documentation, 86-04-01
- o CES Standard for Technical Documentation in Data Releases, 86-04-02

RELATED CHECKLISTS AND FORMS:

- o Data Tape Preparation Checklist, 87-03-07
- o OERI Form 27: Data Base Documentation

**CHECKLIST  
DATA TAPE PREPARATION**

A. Data set names give the survey system, component, year and version.

B Standard Definitions

1. FIPS Standards are used where applicable.
2. CES standard definitions and codes are used where applicable.

C. Data Element Conventions

1. Numeric fields contain only numbers, zeros or missing values.
2. Zeros are represented by "0". Do not use a "-" or blank.
3. Suppression symbols are removed from numeric fields and stored in associated "flag" fields.
4. Negative numbers are represented in standard (IBM) signed numeric format.
5. When practical, numeric data fields containing continuous variables should be identical in length.
6. Separate record locations are used for all data items.

D. Record Conventions

1. Rectangular structures are used, where possible.
2. Single record type is used.
3. Logical record lengths are constant.
4. Each record contains a unique identifier such as ID.

E. Record Layout

1. Record layout, location and format are documented.
2. Blocking factors and block size are documented.
3. Record counts are included.
4. Each record type is identified.

F. Tape Format

1. 9 track, EBCDIC, 6250 BPI standard label tapes are used.
2. Standard alphanumeric characters are used.
3. Binary or packed decimal fields are avoided unless required by the size of the file or other factors.

G. Quality Control Procedures

1. Record counts and totals are consistent between preliminary files and the final released tapes or explanations are included in the documentation.
2. Internal inconsistencies are corrected or documented.
3. Major inconsistencies between current and past data are resolved or documented.
4. Imputed data are flagged.
5. Flags are consistently positioned within a file.
6. Codes for missing, refused and non-applicable data are consistent within a survey or survey system.
7. All necessary steps have been taken to protect the confidentiality of respondents.

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SUBJECT: STANDARD FOR SURVEY DOCUMENTATION  
EFFECTIVE DATE: 12/08/86

CES STANDARD 86-04-01

PURPOSE: To ensure that data released by CES are documented in a consistent manner.

Documentation must allow the non-statistical user to understand the limitations and quality of the data. Researchers must have more specific and detailed documentation of the data to permit independent verification and analysis.

Written detailed documentation must be available on all major surveys conducted or supported by CES. Topics to be included are provided on the attached checklist, and summarized below:

- o Abstract: purpose, target population, time and geographic coverage, and contact person or office.
- o Status of data: current status (preliminary, revised or final) and relation to previous surveys in series;
- o Methodology and data preparation: definitions, sample selection, data collection process, data reduction and estimation, extent of editing and its effects;
- o Sampling and non-sampling errors: methods for estimating and adjusting for errors.
- o Guidelines for using the data: major caveats, use of weights, use of statistical packages, related surveys and research.

RELATED STANDARDS

- o CES Standard for Data Tape Preparation, 87-03-07
- o CES Standard for Technical Documentation in Data Releases, 86-04-02

RELATED CHECKLISTS, FORMS AND DOCUMENTS

- o Survey Documentation Checklist, 86-04-01

CHECKLIST  
SURVEY DOCUMENTATION

A. Abstract

1. The history, purpose and legislative mandates for the survey are clearly explained.
2. The target population is described.
3. The time and geographic coverages of the survey are described.
4. Contact persons(s) or relevant office are named with current phone numbers.

B. Status of Data

1. The data are clearly identified as preliminary, test, revised or final.
2. A schedule of revisions is included, where applicable.
3. Differences between this survey and previous surveys in the same series are explained.

C. Methodology and Data Preparation

1. Definitions

- a. Technical definitions are included.
- b. Concepts critical to understanding data are defined.

2. Sample Design

- a. The target population is described.
- b. The survey frame is described with regard to the source of the frame, reference date and number of units.
- c. The units selected for the sample at each stage are identified.
- d. The numbers of sampling units at each stage are provided.
- e. The procedures for allocating the sample at each stage are discussed.
- f. The sample selection process at each stage is described.
- g. The response rates and their derivations are provided.
- h. Measures of size defined for sampling with "probability proportionate to size" are provided.
- i. Improvements in precision that result from the choice of a particular sample design are discussed.

3. Data Collection Process

- a. There is a general description of how the instrument(s) were administered.
- b. Copies of the interview forms/questionnaires are included.



CHECKLIST FOR SURVEY DOCUMENTATION - (Continued)

- c. Quality control procedures used in the data collection process and the results of the implementation of these procedures are described.
  - d. Results of pretests and independent evaluations are discussed.
4. Data Reduction and Estimation
- a. The derivations of the base weights and any special weights are specified.
  - b. Estimation procedures are described.
  - c. Procedures used to adjust for non-response are described.
5. Editing and Imputation
- a. Methods for imputing data are described.
  - b. Procedures for editing data are described.
  - c. Problems or limitations that resulted from edit procedures are described.
- D. Sampling and Non-Sampling Error
1. Sampling Errors
- a. Methods for estimating sampling errors are discussed.
  - b. Generalized or specific sampling error tables are provided.
  - c. Guidance is provided on how to apply tables of sampling errors to the errors in reported statistics.
2. Non-sampling Errors
- a. Response levels as well as methods for adjusting for non-response are discussed.
  - b. Response bias and measurement errors are discussed.
  - c. Conceptual and other limitations of the data are pointed out.
- E. Guidelines for Using the Data
- 1. Caveats are included about how data can and cannot be used.
  - 2. Instructions are provided on which sample weights to use.
  - 3. Control counts, tables or distributions for critical variables are provided.
  - 4. Confidence levels are appropriate and explained.
  - 5. Design effects are provided, where appropriate.
  - 6. Any special considerations for using statistical packages such as SAS or SPSS are included.
  - 7. Related surveys and studies are listed in a bibliography.

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SUBJECT: STANDARD FOR TECHNICAL DOCUMENTATION IN DATA RELEASES

EFFECTIVE DATE: 12/08/86

CES STANDARD 86-04-02

PURPOSE: To ensure that reports, bulletins, press announcements and data tapes released by the CES accurately report results of surveys and other studies conducted by CES in such a way that the reader can evaluate the conclusions drawn.

The level of documentation, length and technical nature of the discussion will vary with type of publication and the audiences for whom the publication is intended.

- o Major reports on surveys prepared by contractors or by CES staff for publication must contain or refer to a technical appendix that discusses all topics required in CES Standard for Survey Documentation. This includes:
  - summary or abstract of when the data were collected, target population and purposes of the survey;
  - a statement on the status of the data (preliminary, revised or final);
  - a discussion of the methodology used;
  - a discussion of sampling errors including how the sampling errors were calculated and tables of sampling errors if not in the text;
  - a discussion of non-sampling errors including sources of error, what was done to control these sources and any external corroborating evidence used to validate the data; and
  - guidelines for using the data.
- o All key statistics in technical reports should be followed by confidence intervals. Where comparisons are made between two or more statistics, a statement should be made as to the significance of the test performed (e.g. "significant at the 95% confidence level" or "alpha less than .05"). The test used must be cited. If the same test is used throughout the report, this should be stated at the beginning of the report and then exceptions noted at relevant points.
- o Short reports and bulletins must have a statement about the status of the data, sample selection, data collection process, the sampling error for key statistics presented, or alternatively, present confidence intervals after the key statistics. The report must reference more detailed documentation and give the name and phone number of a contact person or office.

STANDARD FOR TECHNICAL DOCUMENTATION IN DATA RELEASES - (Continued)

- o Press releases, one or two-page bulletins, and responses to ad hoc requests must give the status of the data and include a statement indicating the sampling error for key statistics.
- o Public release data tapes must conform to CES Standard for Data Tape Preparation including documentation of file structure, record size, count and blocking factors, data element definitions and locations. The data set name (DSN) must refer to the survey name, the series if appropriate, and the version or release date.
- o E.D. TABS and other tabulations prepared in either print, tape or disk format, must discuss status of data, sample design, data collection procedures, salient definitions, response rates, type of data collected, sampling and non-sampling errors.
- o Proper documentation must be provided for any data reported from a source other than the survey including source name, publication information, table number and page.

RELATED STANDARDS:

- o CES Standard for Survey Documentation, 86-04-01
- o CES Standard for Codes, Abbreviations and Acronyms, 87-03-05
- o CES Standard for Data Tape Preparation, 87-03-07
- o CES Standard for Estimating Sampling Error, 87-05-02
- o OERI Publication Policy
- o CES Publication Policy

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Maria E. Gonzalez, Jack L. Ogus, Gary Shapiro and Benjamin J. Tepping, "Standards for Discussion and Presentation of Errors in Survey and Census Data," Journal of the American Statistical Association, September, 1975, Volume 70, Number 351, Part II.

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SUBJECT: STANDARD FOR MAINTAINING CONFIDENTIALITY  
EFFECTIVE DATE: 02/09/87

CES STANDARD 87-04-03

PURPOSE: To ensure that the rights of individuals responding to CES surveys are protected and that confidentiality of responses is maintained.

- o As required by OMB, respondents must be told whether or not participation in the survey is voluntary and about the legislative or executive mandate for the survey.
- o Respondents must be told in a cover letter or in instructions whether responses will be kept confidential and what provisions will be made to ensure this confidentiality.
- o In developing RFPs for surveys, Project Officers must describe the extent to which confidentiality must be maintained. The more sensitive the data, the more it is important that voluntary participants know that individual responses will be not identifiable.
- o Where absolute confidentiality has been promised or is required by law, Project Officers should not physically accept from a contractor a document or tape that gives the identification of individuals.
- o In reporting on surveys and preparing data tapes, care must be taken to ensure that individual respondents cannot be identified where confidentiality has been promised. If the nonzero value of a column, row or total is based on information from one or two respondents, the cell is considered sensitive and must be suppressed in such ways that the cell cannot be constructed from values in other cells. Suppressed cells must be flagged.

RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for RFP Development for Surveys, 87-02-01
- o CES Standard for Monitoring Survey Contracts, 87-02-02
- o CES Standard for Standard for Survey Documentation, 86-04-01

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

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SUBJECT: STANDARD FOR TABULAR PRESENTATION

EFFECTIVE DATE:

CES STANDARD 87-04-04

PURPOSE: To ensure that tables used in CES publications display data in such a way that readers can evaluate the accuracy and significance of the results presented.

- o All tables must have a short title concisely stating the subject of the table and the relevant time period.
- o All variables used in a table, whether bivariate or multivariate, must be labeled with the name of the variable and with categories clearly labeled.
- o When data presented in a table come from multiple sources or come from a source which is not the direct subject of the report, the sources must clearly be cited at the bottom of the table. Multiple sources must be footnoted so the reader knows exactly which survey or report was the source of the data.
- o All row and column totals must be presented in tables.
- o For tables of percentages or rates, population sizes must be presented at the bottom of the table. If different rows or columns of the table are based on different population sizes, each population size must be presented at the bottom of the table.
- o Standard errors (se's) or confidence intervals (ci's) on statistics in tables can be handled in two ways. The first and preferred method is to include se's or ci's in the table being presented, either in a separate subsection of the table or in columns accompanying the statistics being presented. The second method is to have a separate table of standard errors on the statistics being presented which follows the tables in the report.

RELATED STANDARDS:

- o CES Standard for Dissemination of Survey Data and Results, 87-04-05
- o CES Standard for Estimating Sampling Error, 87-05-02

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o Suggestions for Use of Graphics, p. 31
- o NCES Guidelines for Tabular Presentation
- o James Filliben and David DesJardins, The Graphic Analysis and Display of Statistical Data, Washington Statistical Society, 1986.
- o Calvin F. Schmid and Stanton E. Schmid, Handbook of Graphic Presentation, 1979.
- o Edward R. Tufte, The Visual Display of Quantitative Information, Graphics Press, 1983.

## Suggestions for Use of Graphics

- o Simplicity is critical; cluttered graphs are ineffective. Generally no more than 7 segments in a pie graph and 4 time series in line and bar graphs should be used.
- o When using longitudinal data, horizontal axes intervals should be equal to time intervals.
- o Ordinarily, the vertical scale should start at zero. Otherwise, scale breaks should be clearly and unmistakably visible.
- o Vertical rather than horizontal bar graphs should be used for showing changes over time.
- o Stacked bar graphs, stacked area line graphs, histograms and scattergraphs are hard to read and easily misinterpreted and should be avoided.
- o The use of multiple pie charts to compare similar items is generally inappropriate because of the difficulty in comparing the relative sizes of wedges.
- o On the axes of a line graph, labels for months or years should be placed in the interval between the tick marks, but numerical values such as 1, 2, 3 should be placed on the tickmarks.
- o In using black and white maps, areal data should contain only one variable and no more than 5, preferably 3, levels of distinction.
- o Because of the visual break between increments, high-low graphs, while not often used, should be considered as an alternative to line graphs when the purpose is to compare two cases of the same variable over time.

CENTER FOR EDUCATION STATISTICS  
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT  
U. S. DEPARTMENT OF EDUCATION

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SUBJECT: STANDARD FOR DISSEMINATION OF SURVEY DATA AND RESULTS

EFFECTIVE DATE: 02/09/87

CES STANDARD 87-04-05

PURPOSE: To ensure that the public have the data and results of CES surveys in a predictable and timely fashion.

- o Planning for dissemination of results of a survey must be done concurrently with planning for the survey itself, i.e., in the beginning.
- o Major findings from recurrent and annual data collection efforts will be published on a fixed schedule so that the public will know when to expect these data series from year to year.
- o Publications, data tapes and analyses must be ready for distribution on planned dates.
- o The shortest practical interval should exist between the date or period to which the data refer and the date when a clean data tape is completed. A clean data tape should be ready within 6 months of completion of data collection.
- o Project Officers are encouraged to prepare articles for journals and to make presentations at professional meetings.
- o Publications and data tapes released by CES will be 100% accurate in terms of consistency with master data files and internal consistency (e.g. columns and rows total) . Appropriate technical documentation, consistent with CES Standard for Technical Documentation in Data Releases will be followed.

RELATED STANDARDS:

- o CES Standard for Technical Documentation in Data Releases, 86-04-02
- o Standard for Timely Processing and Release of Data and Data Tapes, 87-04-06
- o OERI Publication Policy
- o CES Publication Policy

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

CENTER FOR EDUCATION STATISTICS  
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SUBJECT: STANDARD FOR TIMELY PROCESSING AND RELEASE OF DATA AND DATA TAPES  
EFFECTIVE DATE: 02/09/87 GES STANDARD 87-04-06

PURPOSE: To ensure that data, tapes and reports from GES are released in a timely, scheduled manner.

- o Data from recurrent surveys and annual publications will be released according to a published schedule. If changes in the published schedule become necessary, they must be cleared with the CES Director and announced at least 30 days in advance of the originally scheduled date of publication.
- o To meet publication deadlines, other deadlines and milestones in the survey process must also be met including timely completion of planning, issuance of the RFP, review of proposals and awarding of contracts, and review of deliverables.
- o To help minimize the number of non-responding units by publication time, all units (e.g. State departments of education) should be notified of the scheduled release date and the fact that the data will be reported on that day with or without their information.
- o The shortest practical interval should exist between the date or period to which the data refer and the date when a clean data tape is completed. A clean data tape should be ready within 6 months of completion of data collection.
- o E.D.TABS or another printed report should be scheduled for publication two months after availability of a data tape.
- o Release of a data file to Information Services should be scheduled for no more than twenty working days after expected production of a clean data tape with documentation. After official approval by the Office of the Director, a data tape may be released to the public with a copy of technical documentation if final published documentation is not ready.
- o Data and data tapes must not be released to anyone or any group before official approval and release by the Office of the Director.

RELATED STANDARDS:

- o GES Standard for Technical Documentation in Data Releases, 86-04-02
- o GES Standard for Dissemination of Survey Data and Results, 87-04-05
- o GES Standard for Treatment of Item Nonresponse, 87-05-01



CENTER FOR EDUCATION STATISTICS  
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SUBJECT: STANDARD FOR RELEASE OF STATISTICAL DATA

EFFECTIVE DATE: 02/09/87

CES STANDARD 87-04-07

PURPOSE: To ensure that CES data are released without undue delay, on a publicly released schedule and with the minimum number of revisions.

- o Data may not be released in any form prior to official clearance and sign-off by the Office of the Director.
- o The release date for publications, data tapes and other data releases must be scheduled and available to the public.
- o The goal should be to have no more than two revisions of the data set for a particular survey series.
- o Only data from official CES released data tapes may be used in CES publications. The survey title, series and version must be referenced.
- o A released file must be kept with appropriate documentation at the designated Education Department Computer Center. Data set names must give survey, series and version number. Divisions are responsible for implementing procedures to ensure that tapes are maintained at the central Education Department computer facility.
- o Working data files used to produce published statistics must be archived for at least eighteen months. These files, together with the appropriate documentation, should be sufficient to allow an experienced computer programmer/analyst to duplicate the numbers released.

RELATED STANDARDS:

- o CES Standard for Data Tape Preparation, 87-03-07
- o CES Standard for Technical Documentation in Data Releases, 86-04-02
- o CES Standard for Timely Processing and Release of Data and Data Tapes, 87-04-06

RELATED CHECKLISTS, FORMS AND DOCUMENTS:

- o "Statistical Policy Directive on Compilation, Release and Evaluation of Principal Federal Economic Indicators." Office of Federal Statistical Policy and Standards, Office of Management and Budget, September, 1985.

CENTER FOR EDUCATION STATISTICS  
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U. S. DEPARTMENT OF EDUCATION

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SUBJECT: STANDARD FOR TREATMENT OF ITEM NONRESPONSE  
EFFECTIVE DATE: 03/16/87

CES STANDARD 87-05-01

PURPOSE: To ensure consistency of data over time and to ensure internal consistency of data before analysis.

- o Best efforts should be made to minimize the occurrence of item nonresponse. Normally, adequate pre- and pilot testing will identify likely item nonresponse problems and protect against them. Geniuently unanticipated problems are to be dealt with post facto. The respondents should be contacted to complete the questionnaire before resorting to use of weighting or imputation.
- o If more than thirty percent of the key items in a record are missing, consideration should be given to deleting the record and making a weighting adjustment for survey nonresponse, rather than imputing items.
- o If less than thirty percent of the key items in a record are missing, the missing items should be imputed. The type of imputation will depend on the type of survey and the type of data.
- o Any imputation on a data tape should be clearly indicated by a separate field with a flag set to indicate the data values which have been imputed.
- o For continuing or longitudinal surveys where categorical data have been gathered in the past on the same items to be imputed, missing values should be imputed directly from the previous survey.
- o For continuing or longitudinal surveys where continuous data have been gathered in the past on the same items to be imputed, a previous observation for the same unit is available, and no strong trends are perceived in the data set, missing values should be imputed directly from the previous survey. A strong trend is defined as one where a linear or curvilinear regression has at least one coefficient significantly different from zero at the 95 percent confidence level.
- o For continuing or longitudinal surveys where two or more rounds of continuous data have been gathered in the past on the same items to be imputed, at least one previous observation for the same item for this same unit is available, and strong trends are perceived in the overall data set for this item, missing values should be imputed by estimating the trend using linear regression on the data collected in the previous time period and data in the current time period. The regression would be run only on cases where observations were present in both time periods, and a separate regression would be run for each variable to be imputed.
- o For continuing or longitudinal surveys where continuous data are not available for more than 2 time periods, but a previous observation for the same unit is available, a ratio factor can be computed from those

## STANDARD FOR TREATMENT OF ITEM NONRESPONSE (Continued)

cases where observations are available in both time periods. This can be used to inflate or deflate prior observations to provide an imputed value for missing data. Alternatively, if an inflation factor is known from outside sources (like CPI), it can also be used. Ratios computed from the data are preferable.

- o For longitudinal surveys where previous observations are not available, or for one-time surveys, missing items should be imputed using the best practical estimator available. Normally, this means using hot deck, typically nearest neighbor, or other techniques that, for each imputation case, assign a donor case that is as similar as possible in terms of the characteristics being used to impute.
- o Zero-filling a record because of missing data, or zero filling certain items which are missing, should only be used as a last resort, and reasons for these actions should be documented with the data tape.

### RELATED STANDARDS:

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for Testing Data Collection Instruments, 87-03-01
- o CES Standard for Minimizing Survey Nonresponse, 87-03-03

### RELATED CHECKLISTS AND FORMS:

- o Kalton, Graham, and Kasprzyk, "Imputing for Missing Survey Responses, 1982 Proceedings, American Statistical Association, p. 22-31.

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SUBJECT: STANDARD FOR ESTIMATING SAMPLING ERROR  
EFFECTIVE DATE: 03/16/87

CES STANDARD 87-05-02

PURPOSE: To establish procedures for developing estimation methods that can be used to generate standard errors for key statistics to be studied or reported in CES publications.

- o During the sample design phase for any survey to be conducted by or for the Center, consideration should be given to the methods to be used for variance estimation. If variances are to be calculated directly on the statistics to be studied, the variance estimators should be developed as part of the sample design. If variances are not calculated directly, but instead are calculated using a replication technique, the formation of replicates should be done as part of the sample design and the variance estimators that use the replicates should be developed as part of the sample design.
- o Where possible, estimation should make use of other data from the survey, from prior surveys, or from administrative records or censuses to minimize the variance of the survey estimates. Ratio or regression estimators should be used whenever possible if they do not substantially complicate the analysis while providing some reduction in the variance of the statistics being estimated.
- o If replication techniques are used, some research should be done as part of the sample design to determine the number of random groups to be used, and the stability of the estimators for the statistics being estimated. As a rule of thumb, jackknife estimators and balanced repeated replication are to be preferred over random groups estimators because of their greater stability in most cases, and the fact that jackknife estimators can eliminate the first order bias in ratio or regression estimates.
- o As part of the reporting of survey results, if there are a large number of statistics being estimated and presented, it may be more practical to model the variances and present the summary form of the model. This can be done by presenting the relationships between the relative variances and the values being estimated as a hyperbola called a GATT curve. A regression is run with the relative variance as the dependent variable and the reciprocal of the estimate for which the variance is calculated as the independent variable. A broad selection of variables to be reported on in the survey are used in the regression to establish the relationship, and different GATT curves can be calculated for different subgroups of the population to reflect both different sample sizes and different design effects. The closeness of the fit of the GATT curve should be tested before the GATT curve is reported in a publication - a poorly fitting curve gives a bad approximation to the actual variances and should not be reported.

**STANDARD FOR ESTIMATING SAMPLING ERROR (Continued)**

**RELATED STANDARDS:**

- o CES Standard for Planning Statistical Surveys, 86-01-01
- o CES Standard for Technical Documentation in Data Releases, 86-04-02
- o CES Standard for Tabular Presentation, 87-04-04

**RELATED CHECKLISTS, FORMS, AND DOCUMENTS:**

LEGISLATION

CENTER FOR EDUCATION STATISTICS, OERI

- |                                                                             |                                      |
|-----------------------------------------------------------------------------|--------------------------------------|
| General Education Provisions Act (GEPA), Section 406                        | - CES mandate                        |
| General Education Provisions Act (GEPA), Section 405                        | - NAEP                               |
| Carl D. Perkins Vocational Education Act, Part C, Sections 421,<br>422, 423 | - Vocational<br>education<br>mandate |

GENERAL EDUCATION PROVISIONS ACT (GEPA)  
as amended  
Section 406

Center for Education Statistics Legislation

**NATIONAL CENTER FOR EDUCATION STATISTICS**

SEC. 406. (a) There is established, within the Office of ~~the Assistant Secretary~~ Educational Research and Improvement, a National Center for Education Statistics (hereafter in this section referred to as the "Center"). The Center shall be headed by ~~an Administrator~~ a Director who shall be appointed by the Assistant Secretary in accordance with the provisions of title 5, United States Code, relating to appointments in the competitive service.

(b) The purpose of the Center shall be to collect, and disseminate, and analyze, statistics and other data related to education in the United States and in other nations. The Center shall—

if feasible, on a State-by-State basis

(1) collect, collate, and, from time to time, report full and complete statistics on the conditions of education in the United States;

(2) conduct and publish reports on specialized analyses of the meaning and significance of such statistics;

(3) assist State and local educational agencies, including State agencies responsible for postsecondary education, in improving and automating their statistical and data collection activities;

(4) review and report on educational activities in foreign countries; and

(5) conduct a continuing survey of institutions of higher education and local educational agencies to determine the demand for, and the availability of, qualified teachers and administrative personnel, especially in critical areas within education which are developing or are likely to develop, and assess the extent to which programs administered in the ~~Education Division~~ Department of Education are helping to meet the needs identified as a result of such continuing survey; and

(6) access periodically the current and projected supply and demand for elementary and secondary school teachers (including teachers at the pre-school level) and early childhood education development personnel with particular attention to--

(A) long-term and short-term needs for personnel in various subject areas or teaching specialities;

(B) shortages in particular types of schools or communities, and in States or regions;

(C) the number of minorities entering teaching;

(D) the proportions of women and minorities in educational administration, and the trends over time;

(E) the demographic characteristics, academic qualifications, job preparation, experience and skills of existing teachers and new entrants in the field of education;

(F) the effect of the introduction of State mandated teacher competency tests on the demographic and educational characteristics of teachers and the supply of teachers; and

(G) the rate at which teachers leave teaching, their reasons for leaving, the sources of supply for new entrants, and the trends over time.



(c)(1) There shall be an Advisory Council on Education Statistics which shall be composed of 7 members appointed by the Secretary and such ex officio members as are listed in subparagraph (2). Not more than 4 of the appointed members of the Council may be members of the same political party.

(2) The ex officio members of the Council shall be—

- ~~(A) the Commissioner of Education,~~  
(A) ~~(B) the Director of the National Institute of Education,~~ ← Assistant Secretary  
(B) ~~(C) the Director of the Census, and~~  
(C) ~~(D) the Commissioner of Labor Statistics.~~

(3) Appointed members of the Council shall serve for terms of 3 years, as determined by the Secretary, except that in the case of initially appointed members of the Council, they shall serve for shorter terms to the extent necessary that the terms of office of not more than 3 members expire in the same calendar year.

(4) The Assistant Secretary shall serve as the non-voting presiding officer of the Council.

(5)(A) The Council shall meet at the call of the presiding officer, except that it shall meet—

- (i) at least four times during each calendar year; and  
(ii) in addition, whenever three voting members request in writing that the presiding officer call a meeting.

(B) Six members of the Council shall constitute a quorum of the Council.

(6) The provisions of section 448(b) of part D of this title shall not apply to the Council established under this subsection.

(7) The Council shall review general policies for the operation of the Center and shall be responsible for establishing standards to insure that statistics and analyses disseminated by the Center are of high quality and are not subject to political influence.

(d)(1) The Assistant Secretary shall, not later than June 1 of each year, submit to the Congress an annual report which—

(A) contains a description of the activities of the Center during the then current fiscal year and a projection of its activities during the succeeding fiscal year;

(B) sets forth estimates of the cost of the projected activities for such succeeding fiscal year;

(C) includes a statistical report on the condition of education in the United States during the two preceding fiscal years and a projection, for the three succeeding fiscal years, of estimated statistics related to education in the United States; and

(D) clearly sets forth areas of critical need for additional qualified education personnel in local education agencies and, after discussion and review by the Advisory Council on Education Statistics, identifies priorities within projected areas of need, and includes recommendations of the Council with respect to the most effective manner in which the Nation and the Federal Government may address such needs.

(2) The Center shall develop and enforce standards designed to protect the confidentiality of persons in the collection, reporting, and publication of data under this section. This subparagraph shall not be construed to protect the confidentiality of information about institutions, organizations, and agencies receiving grants from or having contracts with the Federal Government.

~~(e) In order to carry out the objectives of the Center, the Assistant Secretary is authorized, either directly or by grant or contract, to carry out the purposes set forth in subsection (b), and for that purpose the Assistant Secretary is authorized to make grants to, and contracts with public and private institutions, agencies, organizations and individuals.~~

(e) ~~(1)(A)~~ The Center is authorized to furnish transcripts or copies of tables and other statistical records of the Office of Education, the Assistant Secretary, and the National Institute of Education to, and to make special statistical compilations and surveys for, State or local officials, public and private organizations, or individuals.

and

and

← The Center shall provide State and local educational agencies opportunities to suggest the development of particular compilations of statistics, surveys, and analyses that would assist those educational agencies.

The Center shall furnish such special statistical compilations and surveys as the Committees on Labor and Human Resources and on Appropriations of the Senate and the Committees on Education and Labor and on Appropriations of the House of Representatives may request. Such statistical compilations and surveys, other than those carried out pursuant to the preceding sentence, shall be made subject to the payment of the actual or estimated cost of such work. In the case of nonprofit organizations or agencies, the Assistant Secretary may engage in joint statistical projects, the cost of which shall be shared equitably as determined by the Assistant Secretary: *Provided*, That the purposes of such projects are otherwise authorized by law.

~~(B) All funds received in payment for work or services enumerated under subparagraph (A) shall be deposited in a separate account which may be used to pay directly the costs of such work or services, to repay appropriations which initially bore all or part of such costs, or to refund excess sums when necessary.~~

(2)(A) The Center shall participate with other Federal agencies having a need for educational data in forming a consortium for the purpose of providing direct joint access with such agencies to all educational data received by the Center through automated data processing. The Library of Congress, General Accounting Office, and the Committees on Labor and Human Resources and Appropriations of the Senate and the Committees on Education and Labor and Appropriations of the House of Representatives shall, for the purposes of this subparagraph, be considered Federal agencies.

(B) The Center shall, in accordance with regulations published for the purpose of this paragraph, provide all interested parties, including public and private agencies and individuals, direct access to data collected by the Center for purposes of research and acquiring statistical information.

~~(3) The Commissioner and the National Institute of Education are directed to cooperate with the Center and make such records and data available to the Center as may be necessary to enable the Center to carry out its functions under this subsection.~~

~~(f)(1) The amount available for salaries and expenses of the Center shall not exceed \$5,000,000 for the fiscal year ending June 30, 1975, \$10,000,000 for the fiscal year ending June 30, 1976, and \$14,000,000 for each of the fiscal years ending prior to October 1, 1989.~~

(f)(1) Funds to carry out this section are authorized by section 405(g) of this Act.

~~(2) The amount available for grants and contracts by the Assistant Secretary under subsection (e) shall not exceed \$10,000,000 for fiscal year 1985, \$12,000,000 for fiscal year 1986, \$14,000,000 for fiscal year 1987, \$16,000,000 for fiscal year 1988, and \$18,000,000 for fiscal year 1989.~~

~~(3) Sums appropriated for activities and expenses of the Center which are not limited by paragraph (2) of this subsection shall be appropriated apart from appropriations which are so limited, as separate line items.~~

(g) ~~(1) In addition to its other responsibilities, the National Center for Education Statistics shall, in consultation with the Department of Education, collect uniform data from the States on financing of elementary and secondary education. Each State receiving funds under the Elementary and Secondary Education Act of 1965 shall cooperate with the National Center in this effort.~~

(h) ~~(1) For purposes of this section, the terms "United States" and "State" include the District of Columbia and Puerto Rico.~~

(20 U.S.C. 1221e-1) Enacted August 21, 1974, P.L. 93-380, sec. 501(a), 88 Stat. 556, 558; amended April 21, 1976, P.L. 94-273, sec. 12(1), 90 Stat. 378; amended October 12, 1976, P.L. 94-482, sec. 401(c), 90 Stat. 2226; sec. 406, 90 Stat. 2231, 2232; sec. 501(g), 90 Stat. 2238; amended Nov. 1, 1978, P.L. 95-561, secs. 1201, 1212(a), (c), 1243(a), 92 Stat. 2333, 2334, 2338, 2341, 2353; see also general reference Oct. 17, 1979, P.L. 96-88, sec. 301, 93 Stat. 677; amended Oct. 19, 1984, P.L. 98-511, secs. 702(b), 704(b), 98 Stat. 2406.

Education Consolidation and Improvement Act

*(1) In addition to the other responsibilities of the Office under this section, the Office shall carry out, by grant or cooperative agreement with a nonprofit educational organization, a National Assessment of Educational Progress which shall have as a primary purpose the assessment of the performance of children and young adults in the basic skills of reading, mathematics, communication, and other subjects and skills. Such a National Assessment shall—*

*(A) collect and report at least once every five years data assessing the performance of students at various age or grade levels in each of the areas of reading, writing, and mathematics;*

*(B) report periodically data on changes in knowledge and skills of such students over a period of time;*

*(C) conduct special assessments of other educational areas, as the need for additional national information arises;*

*(D) include in assessment activities information on special groups of individuals;*

*(E) provide technical assistance to State educational agencies and to local educational agencies on the use of National Assessment objectives, primarily pertaining to—*

*(i) the basic skills of reading, mathematics, and communication, and*

*(ii) on making comparisons of such assessments with the national profile (including special population profiles) and change data developed by the National Assessment; and*

*(F) with respect to each State which voluntarily participates in accordance with paragraph (5), provide a statement of information collected by the National Assessment for each such State.*

*(2)(A) The organization through which the Office carries out the National Assessment shall be responsible for overall management of the National Assessment. Such organization shall delegate authority to design and supervise the conduct of the National Assessment to an Assessment Policy Committee, established by such organization. The Assessment Policy Committee shall be composed of—*

*(i) five members appointed by the organization of whom two members shall be representatives of business and industry and three members shall be representatives of the general public; and*

*(ii) fourteen members appointed by the organization from the categories of membership specified in subparagraph (B).*

*(B) Members of the Assessment Policy Committee appointed in accordance with subparagraph (A)(ii) shall be—*

- "(i) one chief State school officer;*
- "(ii) two State legislators;*
- "(iii) two school district superintendents;*
- (iv) one member of a State board of education;*
- (v) one member of a local school board;*
- (vi) one Governor of a State;*
- (vii) four classroom teachers;*
- (viii) one elementary school principal; and*
- (ix) one secondary school principal.*

*(C) The Assistant Secretary shall serve as an ex officio member of the Assessment Policy Committee. The Assistant Secretary shall also appoint a member of the Council to serve as nonvoting member of the Assessment Policy Committee.*

*(D) Members appointed in accordance with subparagraph (A) (i) and (ii) shall be appointed for terms for three years on a staggered basis.*

*(3) The Assessment Policy Committee established by paragraph (2) shall be responsible for the design of the National Assessment, including the selection of the learning areas to be assessed, the development and selection of goal statements and assessment items, the assessment methodology, the form and content of the reporting and dissemination of assessment results, and studies to evaluate and improve the form and utilization of the National Assessment. The appropriateness of all cognitive, background, and attitude items developed as part of the National Assessment shall be the responsibility of the Assessment Policy Committee. Such items shall be subject to review by the Department of Education and the Office of Management and Budget for a single period of not more than sixty days.*

*(4) Each learning area assessment shall have goal statements devised through a national consensus approach, providing for active participation of teachers, curriculum specialists, subject matter specialists, local school administrators, parents, and members of the general public. All items selected for use in the assessment shall be reviewed to exclude items which might reflect racial, sex, cultural, or regional bias.*

*(5) Participation in the National Assessment by State and local education agencies selected as part of a sample of such agencies shall be voluntary.*

*(6) The Secretary shall provide for a periodic review of the National Assessment. This review shall provide an opportunity for public comment on the conduct and usefulness of the National Assessment and shall result in a report to the Congress, the President, and the Nation on the findings and recommendations, if any, of the review. The Secretary shall consider the findings and recommendations in designing the competition to select the organization through which the Office carries out the National Assessment.*

**PART C—VOCATIONAL EDUCATION AND OCCUPATIONAL INFORMATION  
DATA SYSTEMS**

**DATA SYSTEMS AUTHORIZED**

**SEC. 421. (a)(1)** The Secretary shall develop, within the National Center for Education Statistics, a national vocational education data reporting and accounting system using uniform definitions. The system required by this section shall include information on vocational education—

- (A) students (including information concerning race, sex, and handicapping condition),
- (B) programs,
- (C) program completers and leavers,
- (D) placement and followup,
- (E) staff,
- (F) facilities, and
- (G) expenditures in relation to the principal purposes of this Act.

Such information shall include the participation of special populations, including women, the disadvantaged, the handicapped, individuals of limited English proficiency, and minorities.

(2) The Secretary shall take such action as may be necessary to secure the data required by this section at reasonable cost. The Secretary, in consultation with the Congress, shall determine the number and types of vocational education institutions to be sampled, the methodology to be used, group sample sizes, appropriate breakdown analyses of such groups, and the frequency with which such studies under this section are to be conducted.

(b)(1) In maintaining and updating such system, the Secretary shall endeavor to the fullest extent feasible to make the system compatible with the occupational information system (established pursuant to section 422), with the vocational education data system authorized under section 161(a) of the Vocational Education Act of 1963, and with other systems developed or assisted under the Job Training Partnership Act and with information collected pursuant to the Education of the Handicapped Act.

(2) Any State receiving assistance under this Act shall cooperate with the Secretary in supplying the information required to be submitted by the Secretary and shall comply in its reports with the vocational education data system developed by the Secretary pursuant to subsection (a). Each State shall submit the data required to carry out this subsection to the Secretary in whatever form the Secretary requires.

(3) The Secretary shall every 2 years update the national vocational education information and accounting system and prepare acquisition plans of data for operating the system. In carrying out the requirements under this paragraph, the Secretary shall use scientific sample surveys for the information required, except that the information required with respect to handicapped students shall be furnished in accordance with section 423 of this Act.

(4) The Secretary may conduct special studies on enrollment of disadvantaged students in vocational education programs, on the participation of handicapped students in vocational education programs, and any other similar subjects which the Secretary deems appropriate.

(c) In carrying out the responsibilities imposed by this section, the Secretary shall cooperate with the Secretary of Labor in implementing section 463 of the Job Training Partnership Act to ensure that the data system operated under this section is compatible with and complementary to other occupational supply and demand information systems developed or maintained with Federal assistance.

(20 U.S.C. 2421) Reenacted October 19, 1984, P.L. 98-524, 98 Stat. 2472.

OCCUPATIONAL INFORMATION SYSTEM

SEC. 422. (a) There is established a National Occupational Information Coordinating Committee which shall consist of the Assistant Secretary for Vocational and Adult Education, the Commissioner of the Rehabilitative Services Administration, the Director of the Office of Bilingual Education and Minority Language Affairs, and the Administrator of the National Center for Education Statistics of the Department of Education, the Commissioner of Labor Statistics and the Assistant Secretary for Employment and Training of the Department of Labor, the Undersecretary for Small Community and Rural Development of the Department of Agriculture, the Assistant Secretary for Economic Development of the Department of Commerce, and the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics). The Committee, with funds available to it under section 451, shall provide funds, on an annual basis, to State occupational information coordinating committees and to eligible recipients and shall—

(1) in the use of program data and employment data, improve coordination and communication among administrators and planners of programs authorized by this Act and by the Job Training Partnership Act, employment security agency administrators, research personnel, and personnel of employment and training planning and administering agencies (including apprenticeship training agencies) at the Federal, State, and local levels;

(2) develop and implement, in cooperation with State and local agencies, an occupational information system to meet the common occupational information needs of vocational education programs and employment and training programs at the national, State, and local levels, which system shall include data on occupational demand and supply based on uniform definitions, standardized estimating procedures, and standardized occupational classifications;

(3) conduct studies on the effects of technological change on new and existing occupational areas and the required changes in knowledge and job skills; and

(4) assist State occupational information coordinating committees established pursuant to subsection (b).

(b) Each State receiving assistance under this Act shall establish a State occupational information coordinating committee composed of representatives of the State board, the State employment security agency, the State economic development agency, the State job training coordinating council, and the agency administering the vocational rehabilitation program. Such committee shall, with funds available to it from the National Occupational Information Coordinating Committee established pursuant to subsection (a)—

(A) implement an occupational information system in the State which will meet the common needs for the planning for, and the operation of, programs of the State board assisted under this Act and of the administering agencies under the Job Training Partnership Act; and

(B) use the occupational information system to implement a career information delivery system.

(20 U.S.C. 2422) Reenacted October 19, 1984, P.L. 98-524, 98 Stat. 2473.

INFORMATION BASE FOR VOCATIONAL EDUCATION DATA SYSTEM

SEC. 423. The Secretary shall assure that adequate information on the access to vocational education programs by handicapped secondary school students be included in the national vocational education data systems, required by section 161 of the Vocational Education Act of 1963 and by this part, for the biennial survey. The information base for the biennial survey for the handicapped shall be in 4-digit detail as defined in A Classification of Instructional Programs published by the National Center for Educational Statistics. The survey shall include information with respect to total handicapped enrollment by program, by type of instructional setting, and by type of handicapping condition.

(20 U.S.C. 2423) Reenacted October 19, 1984, P.L. 98-524, 98 Stat. 2474.

CENTER FOR EDUCATION STATISTICS (CES)  
Office of Educational Research and Improvement (OERI)  
PUBLICATION CLEARANCE PROCEDURES

I. Regular Publications

1. OERI Publication Plan. OERI prepares an annual publication plan, approved by the Assistant Secretary, that serves as a device to organize decisions, and to record these decisions, on each publication with regard to audience, cost and allocation of staff time. Proposed CES publications titles are submitted as part of overall OERI publication proposals for Assistant Secretary review in September (or in a memorandum requesting an addition to the plan thereafter). The Office of Director approves or modifies CES Division proposals. Information Services (IS) provides oversight, guidance and technical assistance for editorial review and production of all OERI publications and products. It generates ideas for publications and other OERI products, establishes production priorities, tracks development of publications, implements editorial review procedures and devises dissemination strategies.
2. Division Review. CES has assigned primary responsibility to Divisions for preparation of publications, maintenance of standards and meeting timelines. Exact procedures are left up to the Divisions but must culminate with Division Director sign-off. At a minimum, sign-off implies the data have been checked for accuracy and the draft manuscript meets Center standards.
3. CES Review. CES conducts a Center-wide review as a quality control measure. The process is based on the concept of "peer review" commonly used in scientific or technical adjudications in statistical agencies, other parts of the Government, and academia. Individuals from inside and outside the Center participate by reviewing and critiquing drafts, an adjudication meeting is held where all issues are discussed and resolved, and final revisions are made by the author overseen by the Chief Statistician. Principal elements include: peer review, POC review, and adjudication of reviewers comments.
  - a. Peer Review. Names of at least three reviewers are submitted by the Division to the Director, CES. The Director approves the two in-house reviewers (one from the Condition of Education Division, one from another Division). (The Chief Statistician, or his representative, also reviews all publications.) Names of external reviewers are submitted by the Director to the Assistant Secretary for approval. In practice, the Director, CES, approves reviewers for regular CES publications. External reviewers are chosen for their expertise and the diversity of opinion they bring to the review process; the number of external reviewers will vary with the nature, content, complexity and intended audiences of publications.

The approved peer reviewers and the Chief Statistician are given copies of the manuscript and are asked to review the technical presentation, to determine if the exposition is based on the data, and to ensure the content is set in context. Specifically:

the Chief Statistician is responsible for technical review and adherence to standards;

the reviewer from the Condition of Education Division has major responsibility for checking consistency with data in the Center's major compendia;

the reviewer from the other division has major responsibility for content and context issues; and,

the external reviewers are asked to review for subject matter and content.

Written comments are sent to the author prior to the adjudication meeting.

- b. POC Review. Copies of the manuscript are sent by the Office of the Director to the Assistant Secretary and other pertinent department offices (called principals' operating components or "POCs") for information and written comment. Among the Department POCs that may be sent reports are the Offices of the Under Secretary; Planning, Budget and Evaluation; Intergovernmental Affairs; Management; and all Assistant Secretaries. Comments received from POCs are given to the author and the Chief Statistician prior to the adjudication meeting.
  - c. Adjudication. Timely resolution of peer and POC reviewers comments is provided at a meeting scheduled by the Division to occur after distribution and critique of the manuscript. The Chief Statistician chairs the meeting of peer reviewers at which time major points are discussed and adjudicated. The author then revises the manuscript and resubmits it to the Chief Statistician for sign-off and submission to IS. (Time frames for CES review are established by the Divisions and the Chief Statistician when the publication plan is developed).
4. Responsibilities of Information Services. Information Services is responsible for directing dissemination strategies, the publication process and distribution of reports:
- a. Dissemination. IS calls and chairs a dissemination meeting involving the author, a representative of the Office of the Director, CES, the editor, and the Branch Chief of the Publications Branch, to determine what groups (drawn from the OERI mailing lists) will receive announcements and publications, whether GPO will sell the publication, whether the publication will be made available through other sources (e.g., ERIC, NTIS), and the number of copies to be made available to the Information Office for response to requests.
  - b. Publication. IS is responsible for editing, copy preparation and printing of manuscripts. (In practice, computers, statistical and graphics software and laser printers are moving an increasing amount of copy preparation to the Center). Note: All substantive changes in editing are reviewed and approved by the Chief Statistician.
  - c. Distribution. Information copies of publications are sent by IS to key offices in the Department a few days prior to external release.



## II. Special Publications

Contractor Reports. Work statements calling for contractor reports must include provision for revisions of reports and sufficient time must be specified between draft and final reports for Division and CES review.

Clearance procedures are the same as for regular publications except:

- POC review is ordinarily limited to OERI;
- Comments from the adjudication meeting are provided to the contractor for his consideration; and,
- The project officer, in addition to determining whether a final report satisfies the terms of the contract, recommends, through the Division to the Chief Statistician, to the Assistant Secretary whether the Government should publish a final contractor report.

Grantee Reports. Clearance procedures are the same as for regular publications except:

- The Assistant Secretary approves the external peer reviewers;
- POC review is ordinarily limited to OERI; and,
- There is no adjudication meeting. Reviews by the Government are submitted to the grantee within 30 days of original submission to the Government. Reviewers comments are submitted to the project officer who summarizes them and transmits the summary and reviews to the grantee through the Director, CES.

Digest of Education Statistics Clearance procedures are the same as for regular publications except:

- Relevant portions are assigned to the Divisions for review; and,
- A series of meetings are held with each Division prior to the adjudication meeting.

Condition of Education Report. This is a Secretarial report, by law. To be consistent with Department review requirements for Secretarial reports, clearance procedures are the same as for any other Secretarial document. However, prior to formal clearance, this report goes through regular CES review except that POC review is limited to OERI.

## III. Data Tapes

Data tape announcements and documentation are submitted to and cleared by the Chief Statistician and the ADP Coordinator.

- IV. General Note. At all stages of the publication process, except for the Condition of Education report, the Director, CES, is the final judge of the content of CES publications.



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

EXTERNAL ADVICE AND PEER REVIEW  
in the  
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT  
Effective August 18, 1986

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POLICY STATEMENT:

It is the policy of the Office of Educational Research and Improvement to seek advice from outside experts on all major program decisions. For this reason, principles of peer review permeate all aspects of important OERI decisions. These include but are not limited to decisions pertinent to program planning and development, the review, evaluation and redirection of OERI systems and programs, appraisals of reports and publications, and other aspects or dimensions of quality control throughout the organization.

Peer review is a concept or principle that gives rise to a wide array of practices. It is not a single uniform procedure. In its simplest and most general form, the use of peer review involves obtaining advice about a decision.

For a federal agency such as OERI, peer review represents and protects that which all government officials vow to serve--namely, the public interest. OERI uses peer review to improve the quality, utility, and worth of all its research, data gathering, and dissemination activities. It is also used to enhance OERI's accountability, to introduce into OERI a broader range of viewpoints and ideas, and it is a valuable means of updating knowledge of relevant developments and findings from outside sources.

Peer review in OERI means obtaining advice so that the decisions made by OERI are informed by sound advice from multiple and often competing perspectives. A number of studies of the peer review process in other fields and agencies indicate that much of its benefit derives from informed disagreement. Indeed, the interactions associated with such disagreement are powerful self-correcting mechanisms for scientific and other forms of inquiry.

For these reasons, so long as peer review yields an array of well-founded advice, it need not yield group consensus. To be sure, there are times when it is desirable to seek agreement from reviewers functioning as a group. This is especially true in determining which of many proposals for a major project are so deficient that they ought not remain within the competitive range. Yet even where formal evaluations complete with point scores are provided by panels of reviewers, totals and averages can be calculated even if reviewers do not agree with each other.

A truly effective peer review system should yield intellectual ferment, creative disagreement, and testing of conclusions and assumptions in the "marketplace of ideas" which, in turn, will be enriched and enlarged by the process. Furthermore, a truly effective system will foster diversity, originality, and innovation in thinking and not simply project current conventional wisdom into the future. In so doing, it will guard against dated assumptions, provoke new ideas, and seek unconventional approaches and new strategies.

Consensus will be welcomed where it is authentic and critical, but agreement will not be feigned where there is none. More often than not, peer review in OERI should produce informed debate and creative disagreement in disciplined forms that deepen knowledge, widen critical understanding, and enhance practice.

Central to the process of peer review in OERI is the conviction that reviewers should be drawn from the varied constituencies and audiences of OERI, as well as from the academic community. Individual advisors and reviewers must have no direct stake in the outcome of the decision. That is, advice is solicited from persons for whom there is no conflict of interest. This includes both an actual conflict of interest as well as the appearance of one. Furthermore, peer reviewers must have no other constraints on their ability to supply their best individual judgments.

The combination or mix of reviewers will vary according to the specific requirements of the situation. For example, it is often desirable for OERI outside reviewers to include parents, teachers, principals, and other school practitioners. In addition, state and local officials and professional staff members, journalists and social critics, business and labor leaders, authors and analysts, and librarians and library users are all potential members of peer review panels.

In short, a peer reviewer's credentials may come from academia as well as life experience. What unites this diverse group from different walks of life is their interest in and commitment to education and their ability to make cogent well-informed contributions to the OERI peer review process based on their perspectives, knowledge, and experiences. Their advice is of special value to OERI.

EXTERNAL ADVICE AND PEER REVIEW:  
OERI IMPLEMENTATION PROCEDURES  
August 18, 1986

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SCOPE:

In accordance with its external advice and peer review policy, the Office of Educational Research and Improvement (OERI) seeks the advice of outside experts about all major program activities, including:

PROGRAM PLANNING

PROCUREMENTS

EVALUATION OF OERI SUPPORTED ACTIVITIES

PUBLICATIONS AND PRODUCTS\*

It is the intention of OERI that decisions in the categories cited above be informed by external advice and peer review. In no instance, however, does implementation of OERI's external advice and peer review policy absolve the Secretary of Education, the Assistant Secretary, or any OERI official of responsibility for activities undertaken or decisions made by OERI. Reviewers\* assist, but they do not decide; final decisions are made by OERI.

RESPONSIBILITIES OF OERI PROGRAM DIRECTORS:

Program Directors, working with professional staff, have primary responsibility for ensuring that the work of OERI adheres to the highest standards of excellence and intellectual rigor. They are held accountable for ensuring that the principles of peer review permeate all of OERI's activities. OERI Program Directors have considerable flexibility in planning for external advice and peer review and are the first line of decision in determining whether plans and procedures for obtaining peer review and advice from outside experts are soundly conceived, appropriate to the tasks, conducted with integrity, and well documented.

All OERI activities must reflect OERI's commitment to peer review and external advice. Plans for OERI program initiatives must address the ways in which the advice and counsel of outside experts will be sought. Program

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\*Note: See "OERI Publications and Products: External Advice and Peer Review Implementation Procedures".

For purposes herein, the terms reviewer and advisor may be used interchangeably to refer to outside experts, e.g., researchers, statisticians, methodologists, policymakers, parents, education practitioners, etc., from whom OERI seeks advice.

Directors are to submit these plans through the Deputy Assistant Secretary for Policy and Planning to the Assistant Secretary for review and approval. Program Directors also must incorporate into their budget plans for particular activities, the costs associated with obtaining external review and advice. This is especially important where major decisions-making processes may warrant relatively high-cost review procedures.

#### RESPONSIBILITIES OF OERI PROFESSIONAL STAFF:

The professional involvement of OERI program staff is critical to the successful implementation of the external advice and peer review policy. Specific responsibilities of program staff under this OERI policy are included in their individual performance agreements and plans.

In general, program staff are responsible for the management and direction of the review process throughout its duration as well as for the provision of logistical support. They are responsible for determining the nature of the advice or review required for program plans, issues, initiatives, publications, etc., and for framing the issues about which advice or review is sought. Program staff also will identify potential reviewers, develop review strategies, and prepare and forward required decision packages through the Program Director to the Assistant Secretary for review and approval. It is expected that program staff will brief and orient reviewers, synthesize reviewers' comments, ensure the appropriate and timely involvement of other OERI staff and officials, and share their own professional opinions and judgments. Professional staff also will work closely with the Department's Grants and Contracts service to ensure productive negotiations and timely awards.

#### REVIEW STRATEGIES:

Based upon the stated purposes of a particular review or the rationale for seeking the advice of outside experts, OERI Program Directors and their professional staffs have a range of possible strategies from which to choose. These include, but are not limited to: (1) intensive technical reviews of a single proposal by individual reviewers; (2) review and discussion of several proposals by reviewers convened in a single location or communicating via telephone conferencing; (3) a two tiered review process involving a technical review at the first level and an assessment of policy, program, or practice implications at the second level or vice versa; or (4) provision of advice on program plans and direction by a study panel established for that purpose.

It should be noted that the processes used to obtain external advice and peer review will not always include face-to-face meetings of reviewers, traditionally referred to as a panel process. Research has indicated that groups not meeting in person, but whose members are contacted by mail and phone, can be as effective as panels. Indeed, these nominal groups, as they are called, possess certain advantages. For example, they avoid the possibility of having an overpowering personality dominate panel meetings, thereby inhibiting others in expressing dissent. In addition, mail reviews are more economical. The latter is particularly important during periods of scarce resources.

#### REVIEWER SELECTION:

The mix of reviewers will vary according to the specific requirements of the situation. For example, appraising the competing merits of alternate sample designs for a statistics-gathering project or gauging the validity of a technical analysis of a large scale data set are tasks for which OERI would best be served by reviewers with specialized expert knowledge. But selecting those issues, of, say, the preparation and certification of school administrators to which OERI might most appropriately apply some of its research resources is a task wherein the views of practitioners and policymakers are particularly germane. As another example, when evaluating which of the findings of prior research in early learning might be of greatest public interest and value, parents as well as researchers and practitioners certainly should be enlisted in the peer review process.

Reviewers may be selected in part from among knowledgeable employees of the federal government, provided that they have no conflicts of interest or constraints on their ability to supply their best professional judgments. Selection of federal employees as reviewers should occur in the following descending order of preference:

- (1) employees of agencies other than the U.S. Department of Education;
- (2) employees of Department of Education units other than OERI;
- (3) staff of an OERI Program other than the Program conducting the review or soliciting advice;
- (4) staff of other Divisions within the OERI Program conducting the review or soliciting advice.

In selecting individuals to provide external advice, conflict of interest, either actual or apparent, must be avoided. There must be no doubt as to whether an individual has financial or other interests in the outcome that would raise questions about his or her objectivity. In general, a conflict of interest situation exists when any of the following have a financial or other interest in the outcome:

- (1) the individual being considered, his or her spouse, minor child, or partner;
- (2) a profit or nonprofit organization in which the individual being considered is serving as an officer, director, trustee, partner, or employee;
- (3) any person or organization with whom the individual being considered is negotiating or has an arrangement concerning prospective employment.

Inquiries from OERI professional staff concerning conflict of interest guidelines as they pertain to the selection of external reviewers should be directed to OERI's Planning Coordinator in the Office of the Deputy Assistant Secretary for Policy and Planning.

Individual advisors or reviewers can be suggested or nominated by any OERI professional staff member, any other employee of the Department of Education, any other Federal employee, or members of the general public. These nominations may be received by any OERI professional staff member. They then

should be forwarded through an OERI Program Director to the Deputy Assistant Secretary for Policy and Planning who in turn will forward them to the Assistant Secretary.

All reviewers must be approved by both the cognizant OERI Program Director and the Assistant Secretary. Program Directors, working with professional staff, will prepare for the Assistant Secretary's review and approval a list or slate of suitable reviewers when external advice or review is to be solicited. The slate should include more names than are required, with a ordinarily at least two names for each available review slot. Depending on the nature of the advice or review desired, Program Directors may choose to add to the slate individuals who are not yet included in the approved OERI Central File. In submitting these additional names for consideration, Program Directors will ensure that sufficient information is included regarding the individual's qualifications, experience and appropriateness for the particular task. If the new individual is approved as a reviewer by the Assistant Secretary, the name of the individual will be added to the OERI Central File.

In addition, a timetable and written plan describing the process and criteria to be used in the review or in obtaining external advice should be submitted by the Program Director to the Assistant Secretary. The plan should contain a rationale for the proposed procedures and an explanation of the ways in which the proposed slate of reviewers offers a mix of personal and professional qualities that is appropriate to the required tasks. The timetable, written plan, and slate are to be forwarded through the Deputy Assistant Secretary for Operations and the Deputy Assistant Secretary for Policy and Planning to the Assistant Secretary for comments and final approval.

If the Assistant Secretary does not approve the entire slate and the proper mix of skills, talents, expertise, and experience is not present among the approved reviewers, the Program Director will submit additional names accompanied by appropriate documentation to the Assistant Secretary for approval.

If for any reason an individual who initially consents to serve as a reviewer is unable or cannot fulfill that commitment, the Program Director must inform the Assistant Secretary. The Program Director will then fill the vacancy with an individual taken from the slate of potential reviewers approved initially by the Assistant Secretary or with an individual added through the above-described procedures. In no case is an individual to be added to the slate without the approval of the Assistant Secretary.

When approval to use an individual as a reviewer is received, a professional staff member should contact the potential reviewer to ascertain whether the individual is willing to serve. If the individual is willing and available, a letter is to be prepared by a program staff person for the signature of the Assistant Secretary and sent to the individual confirming this information and expressing appreciation for the individual's willingness to serve as a reviewer. The External Reviewer Information Sheet and the individual's resume are filed with IS.

OERI CENTRAL FILE:

The OERI Central File of external reviewers should be consulted by Program Directors and professional staff whenever they need to develop a slate of reviewers. Information Services (IS) will manage and maintain the File. The OERI Central File will be an automated system and should contain relevant and appropriate background information useful to Program Directors and professional staff in developing their lists of potential reviewers.

When approval to use an individual as a reviewer is received, the cognizant Program Director must submit to IS a completed External Reviewer Information Sheet and a resume. IS will review the form for accuracy and completeness and enter the information into the OERI Central File. IS also is responsible for annotating the File as to the instance and manner in which an individual was used for external advice or peer review. In addition, IS will conduct an annual audit of the File to update information about each reviewer. A printout from the File will be submitted for review and revision to the professional staff member who submitted the original information or to the appropriate Program Director.

Any changes in the status of an individual, e.g., change in employment, that might alter the initial judgement that an individual is to be included in the File is to be brought to the attention of the Program Director. The Program Director then will recommend an appropriate course of action to the Deputy Assistant Secretary for Policy and Planning.

REVIEWER COMPENSATION:

Those who serve as peer reviewers or provide advice to OERI perform an act of public service involving a contribution of time and expertise. In order to acknowledge this valuable service, a letter of appreciation is sent by the Assistant Secretary to each reviewer following completion of the proceedings. This letter is prepared by program staff. Two other forms of recognition are provided to acknowledge the individual's public service. First, OERI will distribute nationally, on a periodic basis, a list that publically recognizes the contributions of those who have served as reviewers. In addition a certificate of appreciation is awarded to these individuals. Information Services is responsible for coordinating these activities. In some instances, Program Directors may recommend that the Assistant Secretary approve the granting of honoraria for services rendered. These occasions must be consistent with Department-wide policy. They must be justified and submitted in writing to the Assistant Secretary for consideration and approval. Program Directors are expected to take whatever action is appropriate to generate the sense of obligation and public service necessary for causing individuals to be willing to serve as potential reviewers.

Within the limits of its resources and consistent with Department of Education policies and prudent fiscal management, OERI will reimburse reviewers for necessary and reasonable expenses incurred for their service. However, Program Directors must minimize costs whenever possible by using economical procedures such as reviews by mail and conference telephone calls rather than meetings which involve reviewer travel. Our concern for quality is rivalled only by our insistence on prudence and parsimony in the deployment of taxpayers' money.