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NATIONAL CENTER FOR EDUCATION STATISTICS

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User's Manual

September 1994

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NATIONAL EDUCATION LONGITUDINAL STUDY OF 1988

SECOND FOLLOW-UP: STUDENT COMPONENT  
DATA FILE USER'S MANUAL

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

NCES 94-374

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DATA FILE USER'S MANUAL

Steven J. Ingels  
Kathryn L. Dowd  
John D. Baldridge  
James L. Stipe  
Virginia H. Bartot  
Martin R. Frankel

National Opinion Research Center (NORC)  
at the University of Chicago

Peggy Quinn  
Project Officer  
National Center for Education Statistics

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

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U.S. Department of Education  
Richard W. Riley  
Secretary

Office of Educational Research and Improvement  
Sharon Robinson  
Assistant Secretary

National Center for Education Statistics  
Emerson J. Elliott  
Commissioner of Education Statistics

National Center for Education Statistics

"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."--Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

September 1994

Contact:  
Peggy Quinn  
(202) 219-1743

## Foreword

This manual has been produced to familiarize data users with the procedures followed for data collection and processing of the second follow-up student component of the National Education Longitudinal Study of 1988 (NELS:88). A corollary objective is to provide the necessary documentation for use of the data file.

Use of the data set does not require the analyst to be a sophisticated statistician or computer programmer. Most social scientists and policy analysts should find the data set organized and equipped in a manner that facilitates straightforward production of statistical summaries and analyses. This manual provides extensive documentation of the content of the data file and how to use it. **Chapter VII and Appendix I, in particular, contain essential information that allows the user to immediately proceed with minimal startup cost. A careful reading of Chapter VII and Appendix I will help users to avoid common mistakes that result in costly computer job failures or incorrect results.**

The rest of the manual provides a wide range of information on the design and conduct of the National Education Longitudinal Study of 1988 (NELS:88). Chapter I begins with an overview and history of NCES's National Education Longitudinal Studies program and the various studies that it comprises. Chapter II contains a general description of the data collection instruments used in the NELS:88 second follow-up.

The sample design and weighting procedures used in the second follow-up study are documented in Chapter III, as well as standard errors and design effects, non-sampling measurement errors, and problematic variables.

Data collection procedures, schedules, and results are presented in Chapter IV. Chapter V describes data control and preparation activities such as monitoring receipt of questionnaires, editing, and data retrieval. Chapter VI describes data processing activities including machine editing and construction of the cleaned data tape. Finally, Chapter VII describes the organization and contents of the data file and provides important suggestions for using it.

The appendices contain a list of other NCES NELS:88 publications; guidelines for Statistical Analysis System (SAS) users; the second follow-up student questionnaire; the record layout for the student questionnaire; specifications for the composite variables; the content areas of the second follow-up components; a glossary of project terms; a discussion of conducting cross-cohort trend analyses of students; and a codebook for the student questionnaire data.

In addition to the study described in this manual, a number of supplemental NELS:88 components are also described in Appendix A.

Earlier NCES longitudinal studies that may be of interest to NELLS:88 users are described in Appendix B including the following: the High School and Beyond (HS&B) base year files; merged HS&B first, second, third, and fourth follow-up files; related HS&B files; and assorted files related to the National Longitudinal Study of the High School Class of 1972 (NLS-72).

### **A Note on Data Use and Confidentiality**

The NELS:88 second follow-up data files are released in accordance with the provisions of the General Education Provisions Act (GEPA) [20-USC 122e 1] and the Carl D. Perkins Vocational Education Act. The GEPA assures privacy by ensuring that respondents will never be individually identified.

The National Center for Education Statistics (NCES) is responsible under the Privacy Act and Public Law 100-297 for protecting the confidentiality of individually identifiable respondents, and is releasing this data set to be used for statistical purposes only. Record matching or deductive disclosure by any user is prohibited.

To ensure that the confidentiality provisions contained in PL 100-297 and the Privacy Act have been fully implemented, procedures commonly applied for disclosure avoidance in other Government-sponsored surveys were used in preparing the data file associated with this manual. These include suppressing, abridging, and recoding identifiable variables. Every effort has been made to provide the maximum research information that is consistent with reasonable confidentiality protection. Deleted, abridged, and/or recoded variables appear with an explanatory footnote in the codebook attached to each user's manual.

## **Acknowledgements**

A study such as this is built first and foremost upon the students, dropouts, teachers, school administrators, and parents who have so generously provided its basic data. We are grateful for their cooperation. We also thank the considerable numbers of school personnel who have assisted in the implementation of NELS:88.

We wish to acknowledge the role of a number of other individuals in the realization of the aims of this study. Donald Rock and Judith Pollack of Educational Testing Service served as task leaders for cognitive test development. Miriam Clarke provided counsel on management issues in the main study. Leslie Scott contributed significantly to the conceptualization and development of file specifications and composite variables for the components of the study.

We are also grateful to the members of NCES staff in the Longitudinal and Household Studies Branch who worked closely with us on this project. Jeffrey Owings, chief of the Longitudinal and Household Studies Branch; Peggy Quinn, project officer for the second follow-up; as well as other branch staff--Ralph Lee, Shi-Chang Wu, and Jerry West--who contributed to various aspects of this study. Bob Burton of the Statistical Standards and Methodology Division supplied statistical advice and review.

Three individuals in other agencies have worked particularly hard and effectively to help realize and extend the potential of NELS:88. Larry Suter of the National Science Foundation, Dick Berry (formerly of the National Science Foundation), and Carmen Simich-Dudgeon (formerly of the Office of Bilingual Education and Minority Languages Affairs (OBEMLA) of the U.S. Department of Education). We are grateful for their efforts.

In addition, we would like to express our appreciation to the members of what began in the base year as our National Advisory Panel, and became in 1989 the NELS:88 Technical Review Panel. The panelists--Jerald G. Bachman, Gordon Ensign, Lyle V. Jones, Nancy Karweit, Richard J. Murnane, Patricia Shell, Marshall S. Smith, and John Stiglmeier--provided wise counsel on many difficult issues of design, instrumentation and implementation. As consultants to the second follow-up, Aaron Pallas, Joan Talbert, Leigh Burstein, Anthony Bryk, and Senta Raizen also contributed importantly to the design and ultimate success of the study.

Steven J. Ingels was overall NELS:88 second follow-up project director. Lisa Thalji was associate project director responsible for securing school cooperation and locating NELS:88 cohort members. Katy Dowd was associate project director responsible for the student component during data collection. Laura Reed and Virginia Bartot were the data processing managers, and Martin R. Frankel was the task leader for sampling and statistics.

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## I. Introduction

This manual provides guidance and documentation for users of the public release data for the second follow-up student component of the National Education Longitudinal Study of 1988 (NELS:88). Because the student component public release files contain data from the base year (1988), first follow-up (1990), and second follow-up (1992) surveys, this manual will familiarize the user with each wave of NELS:88. Information about the purposes of the study, the data collection instruments, the sample design, and data collection and data processing procedures used in each wave is presented in this manual.

### 1.1 Organization of the Data User's Manuals

NELS:88 data sets have been produced in both public use and restricted use form. The **public use** data files reflect alteration or suppression of some of the original data imposed to minimize the risk of statistical disclosure of the identity of responding individuals. The **restricted use** files preserve the original data free of all confidentiality edits. Data files with high disclosure potential, specifically the transcripts file and the school effectiveness study files, are available in restricted form only. A more detailed discussion of measures used to preserve respondent confidentiality, and of procedures for gaining access to restricted use data, may be found in section 1.5 of this manual.

In addition to documentation for the restricted use transcript and school effectiveness study data files, five manuals have been produced for the NELS:88 second follow-up, one to accompany each of five public release files: student, dropout, parent, teacher, and school. Each manual furnishes the user with general information and documentation, as well as information and documentation for use with a specific public release data file.

While this manual is intended for use with the second follow-up of the student component, a set of manuals was produced and released to accompany each of the public release data files of the base year and first follow-up surveys; record layouts, codebooks, questionnaires, and variable descriptions for prior NELS:88 waves can be found in those previously published documents. Information on these publications and other documentation for NELS:88 is discussed in section 1.5 of this manual. This manual may also be utilized with the corresponding restricted use data files, as variables that were modified or suppressed on the public use files, but appear on the restricted use version of the data, are included in the codebook in their modified public use form.

## **1.2 Overview**

### **1.2.1 NCES's National Education Longitudinal Studies Program**

The U.S. Department of Education's National Center for Education Statistics (NCES) is mandated to "collect and disseminate statistics and other data related to education in the United States" and to "conduct and publish reports on specific analyses of the meaning and significance of such statistics" (Education Amendments of 1974-Public Law 93-380, Title V, Section 501, amending Part A of the General Education Provisions Act).

Consistent with this mandate and in response to the need for policy-relevant, time-series data on nationally representative samples of elementary and secondary students, NCES instituted the National Education Longitudinal Studies (NELS) program, a continuing long-term project. The general aim of the NELS program is to study the educational, vocational, and personal development of students at various grade levels, and the personal, familial, social, institutional, and cultural factors that may affect that development. The NELS program currently consists of three major studies: the National Longitudinal Study of the High School Class of 1972 (NLS-72); High School and Beyond (HS&B); and the National Education Longitudinal Study of 1988 (NELS:88). Taken together, these studies represent the educational experience of youth from three decades--the 1970s, 1980s, and 1990s. Figure 1-1 illustrates the increasing number of issues that have become part of NCES's National Education Longitudinal Studies research agenda. A brief description of these studies follows.

### **1.2.2 The National Longitudinal Study of the 1970s: NLS-72**

The first of the NELS projects, the National Longitudinal Study of the High School Class of 1972 (NLS-72), began in the spring of 1972 with a survey of a national probability sample of 19,001 seniors from 1,061 public, secular private, and church-affiliated high schools. The sample was designed to be representative of the approximately three million high school seniors enrolled in more than 17,000 schools in the spring of 1972. Each sample member was asked to complete a student questionnaire and a 69-minute test battery. School administrators were also asked to supply survey data on each student, as well as information about the schools' programs, resources, and grading systems. Five follow-ups, conducted in 1973, 1974, 1976, 1979, and 1986, have been completed.

In addition to background information, the NLS-72 base year and follow-up surveys collected data on respondents' educational activities, such as schools attended, grades received, and degree of satisfaction with their educational institutions. Participants were also asked about work experiences, periods of unemployment, job satisfaction, military service, marital status, and children. Attitudinal information on self-concept, goals, participation in

political activities, and ratings of their high schools are other topics for which respondents have supplied information.

### **1.2.3 High School and Beyond of the 1980s: HS&B**

The next major longitudinal study sponsored by NCES was High School and Beyond. HS&B was initiated in order to capture changes that had occurred in education-related and more general social conditions, in federal and state programs, and in the needs and characteristics of students since the time of the earlier survey. Thus, HS&B was designed to maintain the flow of education data to policymakers at all levels who need to base their decisions on data that are reliable, relevant, and current.

Base year data collection was conducted in the spring of 1980. Students were selected using a two-stage probability sample with schools as the first-stage units and students within schools as the second-stage units. Unlike NLS-72, HS&B included cohorts of both tenth and twelfth graders. Since the base year data collection in 1980, four follow-ups of the HS&B cohorts have been completed: one in the spring of 1982; one in the spring of 1984; one in the spring of 1986, and (for the sophomore cohort only) one in the spring of 1992.

The four NELS program cohorts (NLS-72 seniors, the HS&B sophomores and seniors, and NELS:88 eighth graders) are displayed in Figure 1-2 according to their initial and subsequent survey years and their modal age at the time of each survey. As illustrated, NLS-72 seniors were first surveyed in 1972 at age eighteen and have been resurveyed five times since, with the last survey occurring in 1986, when these respondents were about thirty-two years of age. The HS&B cohorts have been surveyed at points in time that would permit as much comparison as possible with the time points selected for NLS-72. NELS:88 is also designed to fit into this larger analytical scheme. The NELS:88 first follow-up sophomore class of 1990 parallels the HS&B sophomore class of 1980; similarly, the second follow-up senior class of 1992 will parallel the 1980 and 1982 HS&B, and 1972 NLS-72 senior classes.<sup>1</sup>

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<sup>1</sup> Note, however, that the HS&B 1980 sophomore cohort in 1982 does not strictly constitute a representative sample of the nation's 1982 seniors, but rather a representative sample of 1980 sophomores two years later. Because of the sample freshening that took place in NELS:88 (but not in HS&B), the subset of NELS:88 sample members who were high school seniors in the spring of 1992 are nationally representative of seniors and are wholly comparable to the NLS-72 and HS&B 1980 probability samples of twelfth graders.



Figure 1-1: Development of key research issues for the NCES National Education Longitudinal Studies Program

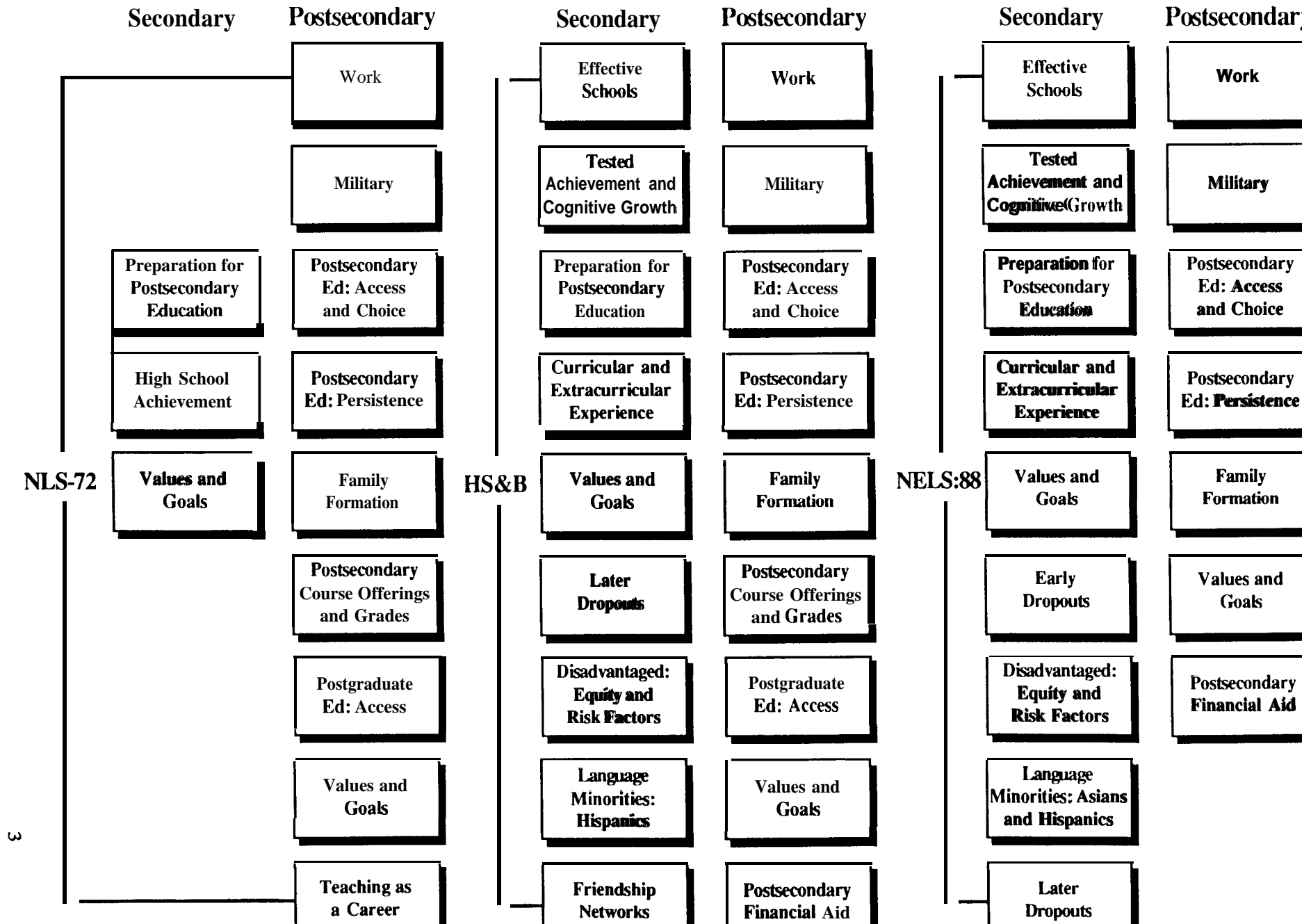
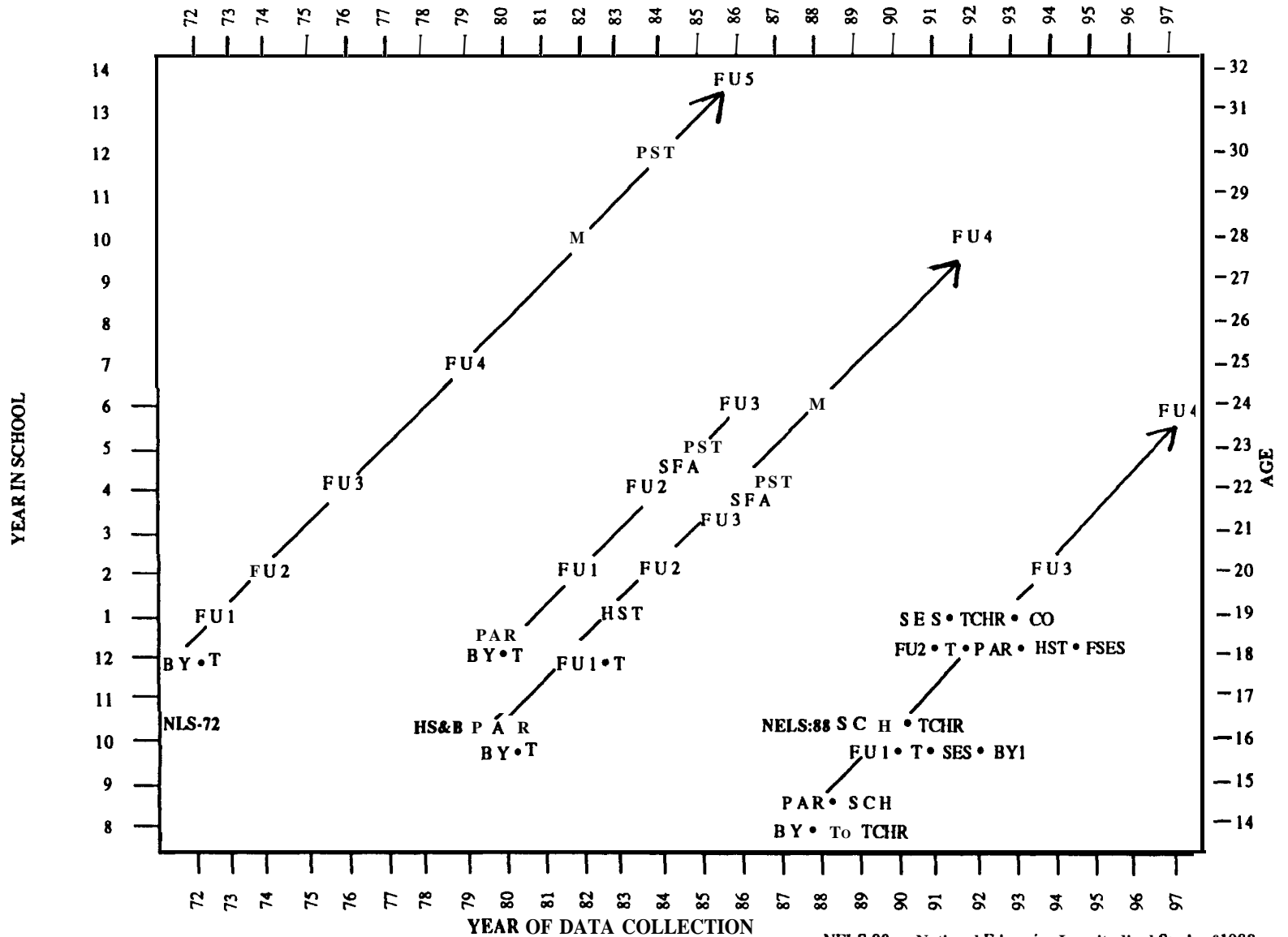


Figure 1-2: Research design for the NCES National Education Longitudinal Studies (NELS) program



NLS-72 = National Longitudinal Study of the High School Class of 1972  
 BY = Base year data collection  
 FU1 = First follow-up data collection  
 FU2 = Second follow-up data collection  
 FU3 = Third follow-up data collection  
 FU4 = Fourth follow-up data collection  
 FU5 = Fifth follow-up data collection  
 M = Maintenance of address date  
 PST = Postsecondary education transcripts  
 T = Cognitive test administration

HS&B = High School & Beyond 1980  
 BY = Base year data collection  
 FU1 = First follow-up data collection  
 FU2 = Second follow-up data collection  
 FU3 = Third follow-up data collection  
 FU4 = Fourth follow-up data collection  
 HST = High school transcripts  
 M = Maintenance of address date  
 PAR = Survey of parents  
 PST = Postsecondary education transcripts  
 SFA = Student financial aid records  
 T = Cognitive test administration

NELS:88 = National Education Longitudinal Study of 1988  
 BY = Base year data collection  
 BY1 = Base Year Ineligible Study  
 FSES = Followback Study Of Excluded Students  
 FU1 = First follow-up data collection  
 FU2 = Second follow-up data collection  
 FU3 = Third follow-up data collection  
 FU4 = Fourth follow-up data collection  
 HST = High school transcripts  
 CO = Course offerings  
 PAR = Survey of parents  
 SCH = School administrator survey  
 SES = School effectiveness study  
 T = Cognitive test administration

TCHR = Survey of teachers

### 1.3 The National Education Longitudinal Study of 1988: Overview

The **base year** of the National Education Longitudinal Study of 1988 (NELS:88) represented the first stage of a major longitudinal effort designed to provide trend data about critical transitions experienced by students as they leave elementary school and progress through high school and into postsecondary institutions or the work force. This study of the 1988 eighth-grade cohort collects data about educational processes and outcomes pertaining to student learning, predictors of dropping out, and school effects on students' access to programs and equal opportunity to learn.

The **first follow-up** in 1990 provided the first opportunity for longitudinal measurement of the 1988 baseline sample. It also provided a comparison point to high school sophomores ten years before, as studied in HS&B. The study captured the population of early dropouts (those who leave school between the end of eighth grade and the end of tenth grade), while monitoring the transition of the student population into secondary schooling. Freshening the NELS:88 sample to represent the tenth-grade class of 1990 makes trend comparisons with the HS&B sophomore cohort possible.<sup>2</sup>

The **second follow-up** took place in 1992, when most sample members entered the second term of their senior year. The second follow-up provides a culminating measurement of learning in the course of secondary school, and also collects information that will facilitate investigation of the transition into the labor force and postsecondary education after high school. The NELS:88 second follow-up resurveyed all students from the eighth-grade cohort including students who were identified as dropouts in 1990, and identified and surveyed those students who left school after the first follow-up. In addition, the freshening process was also implemented in the second follow-up, creating a representative sample of the twelfth-grade class of 1992 and making trend comparisons with the senior cohorts of both NLS-72 and HS&B possible.

The **third follow-up** is occurring in 1994, with most sample members in postsecondary education or in the labor market. The goals of the 1994 round are to provide data for trend comparisons with NLS-72 and HS&B, and to continue cross-wave comparisons with previous NELS:88 rounds. The third follow-up will permit

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<sup>2</sup> The process referred to here as "freshening" added students who were not in the base year sampling frame, either because they were not in the country or because they were not in eighth grade in the spring term of 1988. The 1990 freshening process provided a representative sample of students enrolled in tenth grade in the spring of 1990. The 1992 freshening process provided a representative sample of students enrolled in twelfth grade in the spring of 1992.

researchers to assess the effect of eighth-grade and high school curricular experiences on postsecondary education choice. The third follow-up will provide the means by which access of individuals with different backgrounds to quality educational institutions can be examined. The third follow-up will facilitate study of the influences of high school education experiences on postsecondary education and employment opportunities and choices. Labor force participation, postsecondary persistence, curricular progress, and family formation are further research topics which will be explored by the third follow-up. Additionally, the third follow-up will provide a basis for assessing how many dropouts have returned to school and by what route, and will measure the access of dropouts to vocational training programs and to other postsecondary institutions. A **fourth follow-up** will take place in 1997 or 1998.

### 1.3.1 NELS:88 Study Objectives

NELS:88's major features include the planned integration of student, dropout, parent, teacher, and school studies; the initial concentration on an eighth-grade student cohort with follow-up at two year intervals; the inclusion of supplementary components to support analyses of geographically or demographically distinct subgroups; and the design linkages to previous longitudinal studies and other current studies.

Multiple research and policy objectives are addressed through the NELS:88 design. The study is intended to produce a general purpose data set for the development and examination of federal educational policy. Part of its aim is to inform decision makers, education practitioners, and parents about the changes in the operation of the educational system over time, and the effects of various elements of the system on the lives of the individuals who pass through it. Specifically, NELS:88 focuses on a number of interrelated policy issues including: identification of school attributes associated with achievement; the transition of different types of students from eighth grade to secondary school; the transition of secondary students to postsecondary education or the work force; the influence of ability grouping and program type on future educational experiences and achievements; determinants of dropping out of the educational system; and changes in educational practices over time. One of the defining features of NELS:88 is the extensive attention it gives to the role of parents. The second follow-up parent survey (the parent survey was also conducted in 1988) gathered data on the effect of parents' attitudes and behaviors on educational or career choices, financial preparation for postsecondary education, the correlates of active parental involvement in the school, and the parent's role in the educational success of their children. Appendices M and N provide an overview of some of the key policy issues of education research and the second follow-up student, dropout, school, parent, and teacher items which are related to them.

The NELS:88 design enables researchers to conduct analyses on three principal levels: cross-wave, cross-sectional at a single time point, and cross-cohort by comparing NELS:88 findings to those of HS&B and NLS-72. The first of these levels provides NELS:88 with its primary objective: to serve the purposes of longitudinal measurement. The sampling and data collection designs give priority to maintaining and surveying a substantial number of base year sample members, as well as to sustaining overlapping but analytically distinct cohorts of sophomores and seniors.<sup>3</sup> Users of NELS:88 data will be able to study the effect of a wide variety of factors on students' educational and professional attainment. The longitudinal data gathered from students, and augmented through parent, teacher, school administrator, and school record (for example, academic transcripts) accounts of students' progression and development, will facilitate scrutiny of various facets of students' lives--their problems and concerns, their relationships with parents, peers, and teachers, and the characteristics of their schools--and permit examination of the impact of these factors on social, behavioral, and educational development.

The second analytic level within NELS:88 is cross-sectional. By beginning with a cross-section of 1988 eighth graders, following a substantial subsample of these students at two-year intervals, and freshening the 1990 and 1992 samples to obtain representative national cross-sections of tenth and twelfth graders, the study also provides a statistical profile of America's eighth graders, high school sophomores, and high school seniors. Figure 1-3 depicts the components in each wave of NELS:88, while Figure 1-4 illustrates the sample design for the base year through the third follow-up.

Finally, NELS:88 has been designed to provide researchers with data for drawing comparisons with previous NCES longitudinal studies. After the release of NELS:88 first follow-up data, researchers were able to conduct trend analyses with the 1980 sophomore cohort of HS&B. With completion of the NELS:88 second follow-up, comparisons may be made among NELS:88, HS&B, and NLS-72 senior cohorts. To facilitate cross-cohort comparisons, many of the content areas contained in the HS&B base year survey were repeated in each wave of NELS:88, and data processing and file conventions have been kept consistent, to the maximum extent feasible, with HS&B and NLS-72. For users specifically interested in conducting trend analyses of NLS-72, HS&B and NELS:88 data, further information on content and design similarities and differences between these three studies is presented in Appendix D of this manual, and Appendix E provides information on the specific items which were used across these studies. Appendices M and N

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<sup>3</sup> Sample freshening in the first follow-up ensured the existence of a nationally representative sophomore cohort as well. All 1990 tenth graders have been retained in the 1992 sample.

provide an overview of the content areas of the second follow-up student, dropout, school, parent, and teacher components.

### 1.3.2 Base Year Study and Sample Design

The base year study design comprised four components: surveys and tests of **students**, and surveys of **parents**, **school administrators**, and **teachers**. A student questionnaire gathered information about basic background variables and a range of other topics including school work, educational and occupational aspirations, and social relationships. Students also completed a series of curriculum-sensitive cognitive tests to measure educational achievement and cognitive growth between eighth and twelfth grades in four subject areas--reading, mathematics, science, and social studies (history/geography/civics). One parent of each student was asked to respond to a parent survey intended to measure parental aspirations for children, family willingness to commit resources to children's education, the home educational support system, and other family characteristics relevant to achievement. Selected teachers in two of the four subject areas completed a teacher questionnaire designed to collect data about school and teacher characteristics, evaluations of the selected students, course content, and classroom teaching practices. Finally, a school administrator questionnaire was completed by school principals. It gathered descriptive information about the school's teaching staff, the school climate, characteristics of the student body, and school policies and offerings.

In the NELS:88 base year, a two-stage stratified probability design was used to select a nationally representative sample of eighth-grade schools and students. Schools constituted the primary sampling unit; the target sample size for schools was 1,032. A pool of 1,032 schools was selected through stratified sampling with probability of selection proportional to eighth-grade size and with oversampling of private schools. A pool of 1,032 replacement schools was selected by the same method. Of the 1,032 initial selections, 30 proved to be ineligible. Of the 1,002 eligible selections, 698 participated. An additional 359 schools (supplied by alternative selections available from the replacement pool) also participated, for a total school sample of 1,057 cooperating schools, of which 1,052 schools (815 public schools and 237 private schools) contributed usable student data. For 1,035 of these 1,052 schools, both student and school administrator data were received. In the NELS:88 base year design, students were the secondary sampling unit. The second stage--student sampling--produced a random selection of 26,432 students among participating sampled schools, resulting in participation by 24,599 spring term 1988 eighth graders.<sup>4</sup> On average, each of the participating schools was

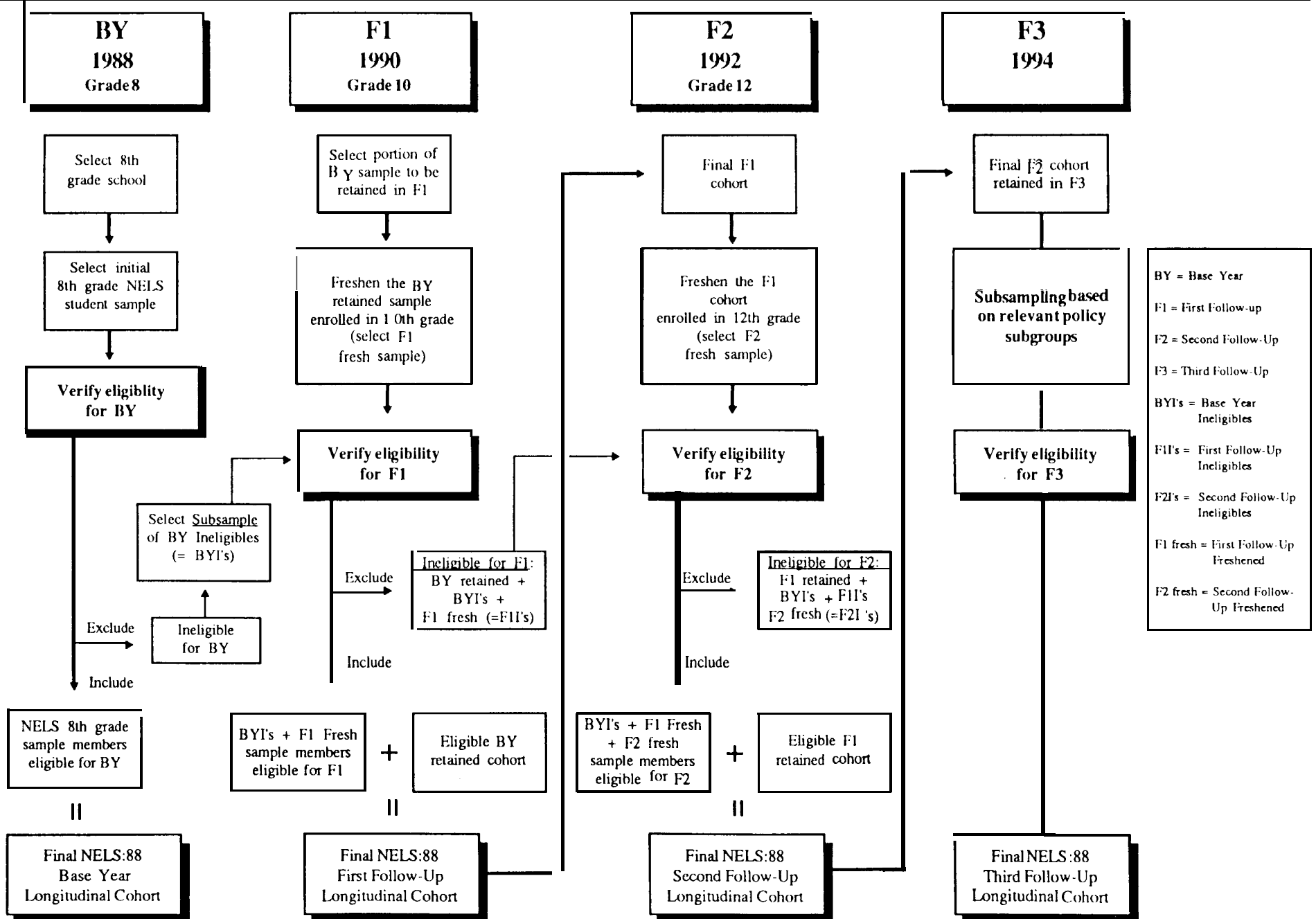
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<sup>4</sup> The sample size of 26,435 cited in the *NELS:88 Base Year Student Component Data File User's Manual* is a typographical error.

Figure 1-3: Base year through fourth follow-up -- NELS:88 components

	BASE YEAR	FIRST FOLLOW-UP	SECOND FOLLOW-UP	THIRD FOLLOW-UP	FOURTH FOLLOW-UP
Data collection:	spring term 1988	spring term 1990	spring term 1992	spring 1994	spring 1997 or 1998
Grades included:	Grade 8	modal grade = sophomore	modal grade = senior	H.S. + 2 years	H.S. + 5 or 6 years
Cohort:	<b>students:</b> questionnaire, tests	<b>students, dropouts:</b> questionnaire tests	<b>students, dropouts:</b> questionnaire tests, H.S. transcripts	<b>all individuals:</b> questionnaire	<b>all individuals:</b> questionnaire
Parents:	questionnaire	none	<b>students, dropouts:</b> questionnaire	none	none
Principals:	questionnaire	<b>students:</b> questionnaire	<b>students:</b> questionnaire	none	none
Teachers:	two teachers per student (taken from English, social studies, mathematics, or science)	<b>students:</b> two teachers per student (taken from English, social studies, mathematics, or science)	<b>students:</b> one teacher per student (taken from mathematics or science)	none	none

Figure 1-4: Longitudinal Sample Design of NELS:88 (1988 - 1994)\*



\* Fourth follow-up is scheduled for 1997



represented by 23 student participants. Additional information about the base year sample design is provided in the *NELS:88 Base Year Sample Design Report*.<sup>5</sup>

### 1.3.3 First Follow-Up Core Study and Sample Design

The first follow-up of NELS:88 comprised the same components as the base year study, with the exception of the parent survey, which was not repeated in the 1990 round. In addition, three new components--the dropout study, base year ineligible study, and school effectiveness study--were initiated in the first follow-up, and a freshened sample was added to the student component. As in the base year, students were asked to complete a questionnaire and cognitive test. The cognitive test was designed to measure tenth-grade achievement and cognitive growth between 1988 and 1990 in the subject areas of mathematics, science, reading, and social studies (history/geography/civics). The student questionnaire collected basic background information, and asked students about such topics as their school and home environments, participation in classes and extra-curricular activities, current jobs, their goals and aspirations, and opinions about themselves. Following the base year design, two teachers of each student were asked to complete a teacher questionnaire, and a school administrator questionnaire was completed by school principals. First-time participants in NELS:88--including students just added to the cohort through the sample freshening process, base year ineligible who became eligible in the first follow-up, and base year nonrespondents who did participate in the first follow-up--completed a new student supplement, containing basic demographic items which were asked in the base year but not repeated in the first follow-up. The first follow-up also surveyed and tested youths who had dropped out of school at some point between the spring term of the 1987-88 school year and that of the 1989-90 school year. The dropout questionnaire collected information on a wide range of subjects, including reasons for leaving school, school experiences, absenteeism, family formation, plans for the future, employment, attitudes and self-concept, and home environment.

The selection of students was implemented in two stages. The first stage of sampling involved the selection of 21,474 students who were in the eighth-grade NELS:88 sample in 1988.<sup>6</sup> Because some sophomores in 1990 were not in the country or were not in the eighth grade in the spring term of 1988, the representative

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<sup>5</sup> Spencer, B.D.; Frankel, M.R.; Ingels, S.J.; Rasinski, K.A.; Tourangeau, R.E.; August 1990; NCES 90-463, ERIC ED 325-502.

<sup>6</sup> This includes students who were base-year nonrespondents, as well as approximately 2,400 U.S. Department of Education Office of Bilingual Education and Minority Languages Affairs (OBEMLA) sponsored sample members.

subsample of the eighth-grade cohort was augmented through a process called freshening. The goal was to provide a representative sample of students enrolled in the tenth grade in the 1989-90 school year. Freshening added an additional 1,229 tenth graders (of whom 1,043 were found to be eligible and still retained after final subsampling) who were not contained in the base year sampling frame.

Several components were added to the first follow-up to increase its analytic power. One of these enhancements, the **base year ineligible (BYI) study**, was added to the first follow-up in order to ascertain the 1990 school enrollment status and the 1990 NELS:88 eligibility status of students who were excluded from the base year survey due to a language barrier or physical or mental disability which precluded them from completing a questionnaire and cognitive test. Any eligible students were included in both the first and second follow-up.

In addition to the BYI study, the **school effectiveness study (SES)**, designed to sustain analyses of school effectiveness issues, was conducted in conjunction with the first follow-up. The within-school student sample of 248 participating first follow-up high schools in the thirty largest metropolitan statistical areas was augmented to produce a probability sample of both schools and students within the framework of the primary longitudinal study.

#### 1.3.4 Second Follow-Up Core Study and Sample Design

The NELS:88 second follow-up repeats all components of the first follow-up study. In addition, the parent component is included once again in the second follow-up. Two new components--the transcript and course offerings components--were initiated in the second follow-up. The course offerings component was implemented as a part of the school effectiveness study (SES). The transcript component was undertaken for sample members as described in section 1.3.5. Sample freshening was also implemented in the second follow-up to provide a representative sample of students enrolled in the twelfth grade during the spring term of the 1991-1992 school year.

As in the previous waves, students were asked to complete a questionnaire and cognitive test. The cognitive test was designed to measure twelfth-grade achievement and cognitive growth between 1988 and 1992 in the subject areas of mathematics, science, reading, and social studies (history/citizenship/ geography). The student questionnaire asked students about such topics as academic achievement; student perceptions and feelings about their curriculum and school, family structure and environment; social relations; aspirations, attitudes, and values, especially as they relate to high school and occupational or postsecondary educational plans. The student questionnaire also gathered data about the family decision-making structure during the critical transition from secondary school to postsecondary education or the work

environment. The student questionnaire contained a supplement for early graduates, the intent of which was to document the reasons for and circumstances of early graduation.

In a departure from the base year and first follow-up teacher survey designs only one teacher (either a mathematics or science teacher) of each student was asked to complete a teacher questionnaire.<sup>7</sup> A school administrator questionnaire, as in the first follow-up, was completed by school principals. If a student was a first-time participant in NELS:88, he or she also completed a new student supplement, containing basic demographic items which were asked in the base year but not repeated in the second follow-up.

The second follow-up, in addition to surveying students who were enrolled in school, surveyed and tested youths who had dropped out of school at some point between the spring term of the 1987-88 school year and the spring term of the 1991-92 school year. The dropout questionnaire collected information on a wide range of subjects, including reasons for leaving school, school experiences, absenteeism, plans for the future, employment, attitudes and self-concept, and home environment.

Each student and dropout selected for the first follow-up was included in the second follow-up. From within the schools attended by the sample members, 1,500 twelfth-grade schools were selected as sampled schools. Of the 1,500 sampled schools, the full complement of component activities occurred in 1,374 schools. For students attending schools other than those 1,374 schools, only the student and parent questionnaires were administered. Retaining the entire first follow-up sample in the 1992 round provides a maximally efficient sample for the NELS:88 second follow-up while satisfying researchers who are interested in maximizing the presence in the study of rare policy-relevant populations.

The student sample was then augmented through freshening at the NELS:88 selected schools, the aim of which was to provide a representative sample of students enrolled in the twelfth grade during the spring term of the 1991-92 school year. Freshening added an additional 364 twelfth graders (of whom 243 were deemed eligible) who were not contained in either the base year or first

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<sup>7</sup> If a student was not enrolled in either a mathematics or science class, no teacher questionnaire was administered. 10,861 students, 69.2 percent of the students in the contextual components sample, were enrolled in a mathematics class, a science class, or both during the spring term of 1992.

follow-up sampling frames.<sup>8</sup> Additional information about the second follow-up sample design is provided in Chapter III of this manual and in the forthcoming *NELS:88 Second Follow-Up Sample Design Report*. Most in-school survey sessions were held in the period from January through March 1992, though a few took place as late as June 1992. Dropout data collection occurred between January and October 1992.

### 1.3.5 Second Follow-Up Design Enhancements

Two new components, the **transcript** and the **course offerings** components, were added to the NELS:88 second follow-up. These components provide archival data which describe the academic experience of high school students and the curricula offered by their schools. The complete high school transcript record was collected for 1) the contextual sample--students attending sampled schools in the spring of 1992; 2) all dropouts, dropouts in alternative programs, and early graduates, regardless of school affiliation; and 3) triple ineligibles enrolled in the twelfth grade in the spring of 1992, regardless of school affiliation. Triple ineligibles are 1988 eighth graders who were ineligible for the base year, first follow-up, and second follow-up surveys due to mental or physical disability, or language barrier. NELS:88 course-taking data will provide not only a baseline against which future student outcome measures can be compared, but will illuminate trends when contrasted to the 1982 HS&B high school transcript study, the 1987 National Assessment of Educational Progress (NAEP) transcript study, and the 1990 NAEP transcript study. The course offerings component provides curriculum data from second follow-up school effectiveness study schools through which school effects on student outcomes can be studied.

The **school effectiveness study (SES)** was added to the first follow-up to provide a probability sample of tenth-grade schools, with a sizable and representative within-school sample of students, through which longitudinal school-level analysis (comparable to 1980-82 HS&B sophomore cohort analysis) could be conducted. In the first follow-up school effectiveness study, permission to conduct the study was gained from 251 schools and 248 of those schools were final SES participants. The second follow-up school effectiveness study returned to 247 of the 251 cooperating first follow-up SES schools, conducting freshening on both longitudinal and SES sample

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<sup>8</sup> Of the 364 freshened students, 76 were sampling errors, and became ineligible through questionnaire data; 15 dropped out of school between the sampling effort and data collection (these 15 are found only on the restricted use file); 13 were out of scope due to language barrier, moved out of the country, or were deceased; 9 were ineligible due to mental or physical incapacity; and the status could not be collected for 8 cases.

members, and selecting additional students from the pool including students who transferred into the school since the 1989 selection of SES students. The second follow-up school effectiveness study was enhanced by the addition of archival data collected by the new course offerings component, and was further augmented by the administration of free response science and mathematics cognitive test items in SES schools.

#### **1.4 NELS:88 Sponsors**

The NELS:88 sponsor, the U.S. Department of Education's National Center for Education Statistics (NCES), provided federal agencies, states, and educational institutions with an opportunity to expand the scope of the base year, first follow-up, and second follow-up studies and enrich them through a variety of means. Enhancements sponsored by various groups included: sample supplements for states to provide representative state samples, oversamples of specific student groups, supplemental questions for various data collection instruments, and supplemental questionnaires.

##### **1.4.1 Sample Supplements and Augmentations**

Sample supplements and augmentations for the second follow-up were sponsored by various sources. The National Science Foundation (NSF) sponsored the core study teacher component, while NCES funded administration of the teacher survey in the school effectiveness study. The U.S. Department of Education's Office of Bilingual Education and Minority Languages Affairs (OBEMLA) provided funds in the base year for oversampling Hispanic and Asian-Pacific Islander students, and for disproportionately retaining Hispanic, Asian-Pacific Islander, and American Indian students in the first follow-up. The **school effectiveness study (SES)** of the second follow-up was begun in the first follow-up with funds from the MacArthur Foundation and from NCES. NCES also sponsored the **followback study of excluded students (FSES)**, a continuation of the base year ineligible study of the first follow-up, which included 303 base year sample members who were ineligible to participate in the base year or first follow-up surveys. For each wave of NELS:88, all survey instruments and cognitive tests were administered to the core study (which included the OBEMLA oversample) and augmentation samples in an identical fashion; some by personal interviews, and others by telephone.

##### **1.4.2 Instrument Supplements**

The NELS:88 second follow-up instruments were supplemented in various ways by federal agencies. The National Science Foundation (NSF) sponsored supplemental mathematics and science items on the student questionnaire and free response science and mathematics items on the school effectiveness study cognitive test. The U.S. Department of Education's Office of Bilingual Education and Minority Languages Affairs (OBEMLA), added questions about minority

language use patterns and bilingual programs. Appendix B contains information on related NELS:88 enhancements and state augmentations, as well as data from other education studies which are available through NCES.

### 1.5 NELS:88 Data and Documentation

NELS:88 base year, first follow-up, and second follow-up data are available in both **public use** and **restricted use** versions on both magnetic tape and on compact disc (CD-ROM). While this manual is specifically designed for use with the public release files, it is also appropriate for use with the restricted data.

Because multilevel microdata (that is, individual-level data from multiple, linkable sources) carries with it some risk of statistical disclosure of institutional or individual identities, the NELS:88 data have been extensively analyzed to determine which items of information, used alone, in conjunction with other key variables, or in conjunction with public external sources such as school universe files, have significant disclosure potential. Variables that were found to pose significant disclosure risks were suppressed or altered to remove or substantially reduce such risks. For example, in some cases, continuous variables have been recast as categorical variables, or fine-grained categorical variables have been more grossly recategorized.

In a few instances, data elements have been suppressed or changed. Because of this, a particular school or individual student might be characterized in terms of a certain variable on the restricted use version of the NELS:88 data, but be coded to missing on the public files, coded to an adjacent response category, or included in a code which collapsed two or more response categories. These suppressions and recodes have been clearly labelled in the codebooks included in each data file user's manual.

While the extremely high value that is placed on confidentiality--not only by federal statute, but also by NCES and contractor standards--justifies these alterations of the data, it is recognized that some of these protections against disclosure may at times reduce the analysis potential of certain variables in the data set. For example, when only ranges of percentages are given for a variable, threshold points that may be important for some analyses may be obscured, or nonlinearities in relationships hidden. No matter how thoughtfully continuous variables are transformed into categorical form, different cut points for the categories may be desirable, depending on one's particular analytic purposes. While most suppressed data will have only a negligible effect on most analyses, there are times when the suppressed information is critical. For this reason, NCES also makes restricted use data files available to qualified researchers with a proven need for the data in its restricted use form. To obtain the restricted use data, it is necessary for an organization to

obtain a licensure agreement from NCES. The agreement must be signed by the principal investigator and by someone authorized to commit the organization to the legal requirements. In addition, each professional or technical staff member with access to the data must sign and have notarized an affidavit of nondisclosure. Refer to section 7.3.2 for instructions for obtaining access to the NELS:88 restricted use data files.

### **1.5.1 Base Year Data Tapes and Documentation**

Four public release tapes were produced for the NELS:88 base year study, one for each study component--the student, parent, teacher, and school. A data file user's manual was produced for each of the public release data tapes.<sup>9</sup> Additional forms of documentation produced include the *NELS:88 Base Year Sample Design Report* which assesses the sampling procedures for the base year survey.<sup>10</sup> The *Psychometric Report for the NELS:88 Base Year Test Battery* gives an in-depth description of the rationale, development, and statistical properties of the eighth-grade cognitive test battery.<sup>11</sup> The *NELS:88 Base Year Final Technical Report* provides detailed documentation of the methodology of the survey.<sup>12</sup> Finally, *Quality of the Responses of Eighth-Grade Students in NELS:88* documents the reliability and validity of student responses.<sup>13</sup> A number of additional NELS:88 analysis reports and special tabulations are available from NCES. Information on published and planned future reports and tabulations is listed in Appendix C.

### **1.5.2 First Follow-Up Data Files and Documentation**

Four public release data files were produced for the NELS:88 first follow-up, one for each study component--the student,

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<sup>9</sup> Ingels, S.J.; Abraham, S.Y.; Rasinski, K.A.; Karr, R.; Spencer, B.D.; Frankel, M.R. March 1990; NCES 90-464, 90-466, 90-482 (ERIC ED 322-223), 90-484 (ERIC ED 322-222).

<sup>10</sup> Spencer, B.D.; Frankel, M.R.; Ingels, S.J.; Rasinski, K.A.; Tourangeau, R.E. August 1990; NCES 90-463 (ERIC ED 325-502).

<sup>11</sup> Rock, D.A., and Pollack, J.M. April 1991; NCES 91-468, ERIC ED 334-241.

<sup>12</sup> Ingels, S.J.; Rasinski, K.A.; Frankel, M.R.; Spencer, B.D.; Buckley, P.; 1990; Chicago: NORC.

<sup>13</sup> Kaufman, P.; Rasinski, K.A.; Lee, R.; West, J. September 1991; NCES 91-487, ERIC ED 339-722.

dropout, teacher, and school surveys.<sup>14</sup> As with the base year data files, a data user's manual was provided for use with each public release first follow-up data file.<sup>15</sup> The student data file user's manual encompasses both the 1988 and 1990 waves of the study.

Further first follow-up documentation, including an assessment of sampling and the psychometric properties of the cognitive tests is reported in the *NELS:88 First Follow-Up Final Technical Report*.<sup>16</sup> Special reports and tabulations based on first follow-up findings have either been published or are in preparation at this time. These reports, and their estimated release dates, are listed in Appendix C.

An electronic codebook released in the spring of 1993 on CD-ROM includes public use student, school, and teacher data from the base year and first follow-up waves of NELS:88. Also included in the first follow-up electronic codebook released on a CD-ROM are public use data from the base year parent survey and dropout data from the first follow-up. The electronic codebook is MS-DOS based and menu driven. This on-line codebook system allows PC or PC-compatible computer users to:

- search a list of relevant variables based on key words or variable names;
- view frequencies for each variable;
- view question text;
- write SAS or SPSS control card files which can be used to construct a data system file; and,
- generate a codebook of selected variables.

Documentation includes an instruction guide to codebook operation and a technical appendix which outlines computer system requirements for codebook use.

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<sup>14</sup> The school effectiveness study data will be released as a combined first and second follow-up data set.

<sup>15</sup> Ingels, S.J.; Scott, L.A.; Lindmark, J.T.; Frankel, M.R.; Myers, S.L. April 1992; NCES 92-030 (ERIC ED 347-780), 92-083, 92-084, 92-085.

<sup>16</sup> Ingels S.J., Scott L.A., Rock D., Pollack J., Rasinski K.; Washington D.C.: NCES, 1994.

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### **1.5.3 Second Follow-Up Electronic Codebook on CD-ROM and Documentation**

Five user's manuals have been produced for the NELS:88 second follow-up public release files, one to accompany each of the following components: student, dropout, parent, teacher, and school. Each manual furnishes the user with general information and documentation both about NELS:88 and a specific public release data file. Although the five user's manuals are written for use with the public release data files, they may also be utilized with the restricted use files. Additional manuals will be produced for use with the transcript and school effectiveness study restricted use data files.

The second follow-up magnetic tapes and CD-ROM comprise all components of the second follow-up survey, as well as updated base year and first follow-up files. The cognitive test scores have been rescaled for the second follow-up release of the base year, first follow-up, and second follow-up files, and the ECB features windows with both weighted as well as unweighted frequencies and percentages. A user's guide is available for the ECB and CD-ROM products.

Other second follow-up restricted data files, such as the high school transcript survey, the school effectiveness study (SES), and the early graduate supplement, also appear on CD-ROM but not in the ECB format. These files can be downloaded to floppy diskette or hard drive on a PC, and/or uploaded to mainframe or other machines. The files can be converted to systems files for use with standard statistical software packages. Chapter VII contains additional information on the magnetic tape and CD-ROM releases.

Additional forms of second follow-up documentation, including an in-depth assessment of sampling and non-sampling error, the sampling design, the psychometric properties of the cognitive tests, and various analysis reports are planned. These reports, and their estimated release dates, are listed in Appendix C.