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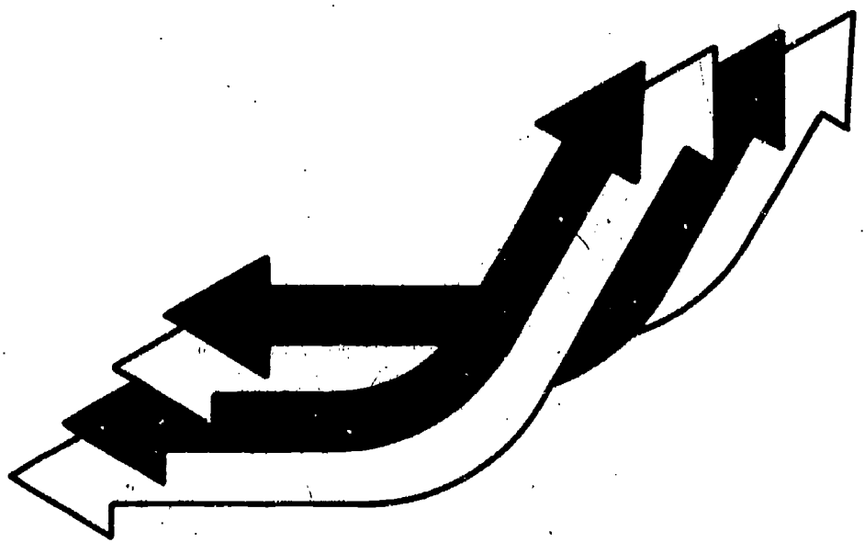
ABSTRACT

This report contains a summary of descriptive information about 1980 seniors two years after leaving high school--their educational, vocational, socioeconomic, and familial status and their plans and attitudes. Chapter I is an introduction to the High School and Beyond (HS&B) longitudinal surveys. Chapter II indicates the percentages of male and female 1980 seniors participating in postsecondary education, work, and other activities in October 1980 and October 1981. Chapter III studies the entry rates--immediate and delayed--of 1980 seniors into postsecondary institutions, examines the rate of persistence of those who went to college as well as their major fields of study, and describes the kinds and amounts of financial aid received. Chapter IV describes labor force experiences--employment status and earnings. Military service is the focus of chapter V, while chapter VI notes family formation statistics and chapter VII addresses the changes that had taken place since the students' senior year in values, attitudes, and opinions. Appendix A presents a description of HS&B data files available for public use; appendix B defines the variables that were used to divide the total population into subgroups; and appendix C discusses the HS&B sample design and the quality of the data. (Thirteen tables are provided.) (YLB)

High School and Beyond

a national longitudinal study for the 1980's

Two Years after High School: A Capsule Description of 1980 Seniors



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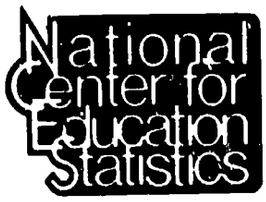

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"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and, from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries."--Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

Foreword

This capsule description provides a general overview of the activities and experiences of high school seniors in 1980, using information from High School and Beyond's base-year and first follow-up (1982) surveys. NCES plans to conduct or to sponsor a number of analytical reports that will address a variety of topics in greater detail than that provided here. NCES has computer tapes available to those wishing to carry out their own analyses of special questions and issues. Among the topics to be addressed in future NCES analytic studies are: transition to postsecondary education, parental ability to finance postsecondary education, educational aspirations, cognitive growth, and a companion piece to this report which will be concerned with the status, in February 1982, of the sophomores of 1980.

The HS&B study is a long-term program designed to reveal what young people do after they leave high school. The findings of these surveys, while important in themselves, will take on additional significance when subsequent follow-up surveys reveal the later careers of these young adults. Reports making use of the follow-up survey data and the longitudinal design of the HS&B study will appear in the later years of this program. Information on the status of future studies may be obtained from the Longitudinal Studies Branch, National Center for Education Statistics, 600 Brown Building, 400 Maryland Avenue SW., Washington, D.C. 20202.

Information about obtaining the HS&B computer tapes is also available from the Statistical Information Office of NCES, at the same address.

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Highlights

Postsecondary Education

- By February 1982, 63 percent of 1980 seniors had entered some kind of postsecondary institution—35 percent a 4-year college, 25 percent a 2-year college, and 8 percent a vocational or technical institution.[1]
- Four-year college entry rates varied substantially by student's socioeconomic status (SES) level: 61, 32, and 19 percent for those from high, middle, and low SES backgrounds, respectively. The corresponding 2-year college entry rates were 27, 27, and 20 percent.
- About 75 percent of the 1980 seniors who had entered a 4-year college by June 1981 stayed in the same college through February 1982, while 15 percent transferred to another college and 10 percent withdrew. The lower the student's SES background the more likely the student was to withdraw from a 4-year college, 15 percent for low SES students vs. 7 percent for high SES students.
- Young men were more likely than young women to enter engineering (18 vs. 3 percent) and physical sciences and mathematics (5 vs. 2 percent) but less likely to enter education (3 vs. 13 percent) and health (2 vs. 12 percent).[2]
- The field of education attracted few seniors from the top quartile in cognitive abilities compared with the lowest quartile (5 vs. 12 percent); but the combined fields of physical sciences and mathematics attracted more top quartile students (6 percent) than lowest quartile students (1 percent). This was also true with respect to engineering where the corresponding percentages were 16 and 4.

Financing Postsecondary Education

- Of 1980 senior cohort members who attended postsecondary institutions in the 1980-1981 school year, 43 percent received grant money (25 percent received Pell grants). The percentage receiving a grant was positively correlated with tuition and negatively correlated with family income. The percentages ranged from 88 percent at high tuition institutions for students from low-income families to 25 percent at low tuition institutions for students from high-income families.
- Of the respondents who attended postsecondary institutions in the 1980-81 school year, 30 percent received loans (12 percent received guaranteed student loans). The percentage varied from about 20 percent in low tuition institutions to 50 percent or more in high tuition institutions, but was not related in any strong way to family income.
- Twenty-three percent of the respondents who attended college in 1980-81, used neither grants, loans, nor earnings to finance their education. Thirty-seven percent used only one of these three sources, 27 percent used two of the three sources, and 12 percent used all three. Over 60 percent of grant recipients used earnings to finance college costs.
- In 1981-82, as compared with 1980-81, the average respondent received less grant support ($560 vs. $620), but took out a larger loan ($600 vs. $530) and relied more on his or her own earnings ($570 vs. $520).[3]
- In 1980-81, the average grant was over twice as large for high tuition institutions as for low tuition ones ($1,050 vs. $430) and the average loan about 4 times as large ($1,100 vs. $280).

Labor Force Participation

- In October 1981, 74 percent of 1980 seniors who were not attending post-secondary institutions were working—14 percent part time, 60 percent full time. Only 56 percent of full-time students were working—37 percent part time, 19 percent full time.

[1]The sum of the three figures exceeds 63 percent because some students entered more than one type of institution.
[2]The percentages are based on 1980 seniors who were in academic college programs in February 1982.
[3]These figures are based on all 1980 seniors in college regardless of whether they received aid or not.

- The unemployment rate for 1980 seniors remained fairly constant at a 7 to 9 percent level from October 1980 through February 1982. Minority-group persons (except for Asian Americans) experienced much higher unemployment rates than whites. In October 1980 the rates were 15 percent for blacks, 11 or 12 percent for Hispanics and American Indians, but only 7 percent for whites. The average unemployment rates over the October 1980 to February 1982 period were 10 percent for females, 7 percent for males.
- The average rate of pay for 1980 seniors working in February 1982 was $4.99 per hour—$4.71 for full-time students, $5.15 for nonstudents. Employed women had hourly earnings averaging 12 percent lower than men ($4.67 vs. $5.31), worked 15 percent fewer hours per week (34 vs. 40), and had weekly earnings 24 percent lower ($155 vs. $204).

Military Service

- Blacks, the group with the highest unemployment rate, had the highest rate of entry (of males) into the armed services—12 percent vs. 6 percent for whites.

Family Formation

- By spring 1982, 16 percent of the female and 8 percent of the male 1980 seniors had married. Eight percent of the young women and 3 percent of the young men had had at least one child by then.
- Only 3 percent of those who were attending college in spring 1982 had already married, as compared with 13 percent of those who were currently employed.
- Family formation statistics varied considerably by socioeconomic background level and cognitive test performance level, but the range of variation was about the same for each of these two classification variables—from 5 percent (highest quartile) to about 18 percent (lowest quartile) had gotten married and from 2 percent (highest quartile) to 12 percent (lowest quartile) had children.

Attitudes and Values

- 1980 seniors felt better about themselves in spring 1982 than when they were high school seniors. Those who entered the armed forces showed about twice as much gain in self-esteem as those who pursued other activities.
- During the first 2 years after high school, some of the life goals and values of youngsters changed appreciably. The major shift was toward placing a higher value on family-oriented goals.

Chapter I. Introduction

Background and Purpose

The High School and Beyond (HS&B) study is a nationally representative sample survey of 1980 high school sophomores and seniors in the United States. As a large-scale, longitudinal survey, the study's primary purpose is to observe the educational and occupational plans and activities of young people as they pass through the American educational system and take on their adult roles. The study should ultimately contribute to an understanding of the development of young adults and of the factors that determine individual education and career outcomes. Such information is useful as a basis for review and reformulation of Federal, State, and local policies affecting the transition of youth from school to adult life.

The availability of this longitudinal data base encourages indepth research for meeting the educational policy needs of the 1980's at local, State, and Federal levels. HS&B data will help in evaluating: the strength of secondary school curricula; the quality and effectiveness of secondary and postsecondary schooling; the demand for postsecondary education; problems of financing postsecondary education; the adequacy of postsecondary alternatives open to high school students; the need for new types of educational programs and facilities to develop the talents of our youth; and the educational, vocational, and personal development of young people and the institutional, familial, social, and cultural factors that affect that development.

HS&B is the second in a program of longitudinal studies sponsored by the National Center for Education Statistics (NCES). The first was the National Longitudinal Study of the High School Class of 1972 (NLS-72), which began in 1972 and completed its fourth follow-up survey in 1979.

The NCES longitudinal studies program is based on the assumption that Federal, State, and local policies affecting the transition from school to work need to be grounded on facts concerning the intervening processes of the American educational system, in addition to information on the inputs (such as student characteristics) and the outputs (such as degrees and diplomas awarded). The longitudinal studies program provides statistics on the education, work, and family experiences of young adults for the pivotal years during and immediately following high school. The fourth follow-up of the NLS-72 provides information on the outcomes of schooling 7 years after high school, while the base-year and first follow-up HS&B surveys provide current information on high school experiences, student cognitive growth, and the transition to early adult life.

The HS&B study was designed to gather the same types of data as were collected in the first NCES longitudinal study. The study of the HS&B senior cohort replicates many aspects of the NLS-72, both in the questionnaires and in the cognitive tests. This allows interstudy comparisons to be made of the possible effects of economic and social changes that occurred in the 8 years since 1972. However, the second study differs from the first in two significant ways. First, it addresses certain elements in the educational process that were not included in the earlier study. HS&B is the first longitudinal study of students to survey parents concerning their aspirations for their children and their ability and desire to pay for the fulfillment of these aspirations. HS&B is also the first study to survey teachers concerning their assessment of their students' futures. Second, it extends the scope of the population to the sophomores of 1980 as well as the seniors; and thus makes possible a fuller understanding of the secondary school experience, its long-term impact on students, and the factors that influence the decision to drop out of school early. Detailed information on courses taken and grades achieved (from complete high school transcripts) also permits examination of the relationships between student and school characteristics, on the one hand, and patterns of course taking and student achievement on the other.

HS&B Base-Year Survey

The base-year survey was conducted in spring 1980. The study design included a highly stratified national probability sample of over 1,100 high schools with a sample of 36 seniors and 36 sophomores per school. (In those schools with fewer than 36 seniors or sophomores, all eligible students were included in the sample.) Cooperation from both schools and students was excellent. Over 30,000 sophomores and 28,000 seniors enrolled in 1,015 public and private high schools across the nation participated in the base-year survey. The response rate for schools was

70 percent (91 percent after replacement of nonresponding schools with similar schools) and for students within participating schools it was 84 percent.

Questionnaires and cognitive tests were administered to each student in the HS&B sample. The student questionnaire covered school experiences, activities, attitudes, plans, selected background characteristics, and language proficiency. Other groups of respondents provided other types of information. The administrator in each selected school filled out a questionnaire about the school; teachers in each school were asked to make comments on students in the sample; each twin in the sample was identified and his/her counterpart twin was also identified and surveyed; and a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed primarily for information on plans for financing of higher education. The total survey effort thus provided a comprehensive data base for analyses in education and other areas of behavioral and social science.

Base-year survey data are summarized in a descriptive way for both cohorts in *A Capsule Description of High School Students* (NCES 81-244, April 1981).

HS&B First Follow-Up Survey

The first follow-up survey took place in spring 1982. All students who had been selected for inclusion in the base-year survey, whether or not they actually participated, had a chance of being included in the first follow-up sample. The sophomore cohort sample design called for including with certainty all members still in the same school, and for subsampling all others. The resulting sample size was 29,737. Of these, a subsample of 18,000 was selected for a study of high school transcripts.

Cognitive tests—the same ones employed in the base-year survey—and questionnaires were administered to those out of school (dropouts and early graduates) as well as to those still in school, including those who had transferred to other schools. Questionnaires were completed by 28,119 (94.6 percent) of the 29,737 sample members and the test battery by 26,216 (88.2 percent). School administrators were asked to complete a school questionnaire to update information about their schools and also to provide a copy of their "Master Teaching Schedule."

In designing the senior cohort first follow-up survey, one of the goals was to reduce the size of the retained sample to about 12,000 while keeping sufficient numbers of certain subgroups (e.g., Hispanics, blacks and other minority groups) to allow important policy analyses. A total of 11,227 (93.6 percent of the 11,995 persons subsampled) completed the first follow-up questionnaire—8,990 by mail, 956 by telephone, and 1,281 by in-person interview. Information was obtained about the respondents' school and employment experiences, family status, and attitudes and plans. Tests were not administered to the senior cohort members.

Both the base-year survey and the first follow-up survey included an Hispanic supplement, i.e. a deliberate oversampling of Hispanic students so that this subset of the population would be sufficiently represented to permit relevant policy analyses. The Hispanic supplements were included at the request of, and with funding supplied by, the Office of Bilingual and Minority Language Affairs (OBEMLA) within the Department of Education. Other NCES reports will focus specifically upon the educational experiences and achievements of Hispanic students.

The first follow-up survey data, along with the base-year survey data, are available for public use. Several NCES-sponsored analytic studies using these data have been planned. Among the topics to be investigated in special indepth analyses are: excellence in secondary education, transition to postsecondary education, high school dropouts, transition of Hispanic students from high school to postsecondary education and from school to work, and the high school diploma as a terminal degree. Researchers are being encouraged to conduct additional analytic studies using this data base.

HS&B Second Follow-Up Survey

The second follow-up survey is scheduled for spring 1984. At that time, samples of 15,000 members of the 1980 sophomore cohort and 12,000 members of the 1980 senior cohort will be contacted for further information about developments in their lives.

Objectives and Organization of This Report

This report contains a summary of descriptive information about 1980 seniors 2 years after leaving high school—their educational, vocational, socioeconomic, and familial status, and their plans and attitudes. The report demonstrates the breadth and depth of the data and presents some illustrative findings from our preliminary analyses. (A similar report is being prepared for the 1980 sophomore cohort.) The remainder of this report,

chapters II through VII, is organized into six topical areas. Chapter II describes what 1980 seniors were doing in fall 1980 and fall 1981; chapter III, their postsecondary education experiences (entry rates, persistence, field of study, and financing); chapter IV, their labor force experiences (employment status and earnings); chapter V, military service; chapter VI, family formation; and the last, chapter VII, the changes that had taken place since their senior year in values, attitudes, and opinions.

Appendix A presents a description of HS&B data files available for public use; appendix B defines the variables that were used to divide the total population into subgroups; and appendix C discusses the HS&B sample design and the quality of the data.

Chapter II. Activities

When HS&B was initiated in spring 1980 all members of the population under study in this report were attending high school as seniors. Between the base-year and the first follow-up survey, all students had left high school and had begun to follow diverse paths leading to diverse futures. Leaving high school was an important transition point in their lives. They pursued different avenues involving combinations of postsecondary education and work. Many options were open to them as they approached young adulthood and were forced to make choices regarding postsecondary education, work, and family formation which might have lasting consequences on their economic well-being, happiness, and productivity as members of American society.

This chapter describes their activities shortly after this key transition. It indicates the percentages of male and female 1980 seniors participating in postsecondary education, work, and other activities at two points in time, October 1980 and October 1981. Subsequent chapters examine in more detail the nature of their postsecondary education and labor force experiences and their status with regard to starting their own families.

Trend Between 1980 and 1981

The data in table 1 show that the percentages of 1980 seniors in specified activities are very similar for October 1980 and October 1981, particularly regarding participation in postsecondary education. The only major change was a rise in full-time employment for both men and women.[1]

Table 1. Percentages of 1980 seniors in specified activities, by sex: October 1980 and October 1981.

Activity[a]	Males		Females	
	October 1980	October 1981	October 1980	October 1981
Participation in Postsecondary Education:				
4-year college	30	29	32	31
2-year college	16	16	18	16
Vocational/technical & others	3	3	5	4
Participation in labor force:				
Full-time employment[b]	45	49	33	38
Part-time employment	21	20	28	28
Unemployed and looking for work	8	8	12	10
On-the-job or other training	4	5	4	5
Military service	4	6	1	1
Homemaking (no other job)	—	0	—	6
Taking a break from work and/or school	—	2	—	2

[a]Persons could be participating in more than one activity at the same time.
[b]Full-time employment means working 34 or more hours per week.
Note: —Indicates information is not available.

[1] All statistics presented in this report are weighted estimates of population parameters. These estimates are based on a probability sample of about 12,000 individuals selected from a total population of about 3 million. As is the case for all sample surveys, the estimates are subject to both sampling and non-sampling error. The standard error of an estimate reflects the degree of uncertainty in an estimate which is attributable primarily to sampling variation. All estimated differences cited in this report differ from 0 by at least two standard errors (i.e., are significantly different from 0 at the .05 probability level, two-tailed test).

Labor Force Participation

In October 1981 the most common activity among those listed in the questionnaire was full-time employment; about 43 percent participated (table 1). Males were more likely to be employed than females (49 vs. 38 percent, respectively). More women than men, however, were employed part-time in October 1981 (28 vs. 20 percent, respectively); and slightly more women than men were unemployed and looking for work at that time (10 vs. 8 percent, respectively).

Participation in Postsecondary Education

Somewhat less than one-third of the cohort were attending a 4-year college. No significant differences in the college attendance rates of men and women are discernable. Roughly 30 percent of each sex were attending a 4-year college, both in October 1980 and in October 1981. In October 1981, about 16 percent of each sex were attending a 2-year college and about 4 percent were attending a vocational or technical school (table 1).

Other Activities

In October 1981, 5 percent of each sex were taking on-the-job or other training. Six percent of males and 1 percent of females were in the military service, 6 percent of the females were homemakers with no other job, and 2 percent of each sex were taking a break from school or work.

As expected, most of the 1980 seniors had entered postsecondary education and/or the labor force. The similarity in 1980 and 1981 of the proportions engaged in certain activities suggests a possibly misleading picture of stability. In fact, some students dropped out of college, some entered college late, and some workers changed jobs.

Chapter III. Postsecondary Education

The amount and kind of postsecondary education (PSE) a person obtains greatly affects employment and earnings opportunities. This chapter examines the entry rates, immediate and delayed, of 1980 seniors into postsecondary institutions. It examines the rates of persistence of those who went to college and their major field of study.

The Federal and State governments have initiated grant, loan, and work-study programs with a view towards reducing the financial barriers to higher education for those who qualify, who seek such education, and who otherwise might not be able to attend. The last section of this chapter describes the kinds and amounts of financial aid 1980 seniors received during the 1980-81 and 1981-82 school years. In response to concerns about equity, the data throughout the chapter (such as entry rates and persistence rates) are shown separately for subgroups formed by classifying students by sex, race/ethnicity, and socioeconomic background.

Entry into Postsecondary Education

By February 1982, 63 percent of all 1980 seniors had entered some kind of postsecondary institution (table 2). Of those who entered postsecondary education during the 1½ year period following high school, a large majority (84 percent) entered without delay (by October 1980). The percentage of entrants who entered immediately was, as expected, highest for 4-year colleges (89 percent) and lowest for vocational/technical institutions (62 percent). When the data were categorized by racial/ethnic group, socioeconomic status, cognitive test performance, and high school program, it was found that within each of these categories, the group with the highest overall entry rate also had the highest percentage of immediate entrants (not shown in tables).

Table 2. Percentages of 1980 seniors who entered postsecondary education, and percentages of those who entered immediately, by type of institution.

Type of institution	Percent of total entering[a]	Percent of those who entered immediately[b]
All institutions	63	84
4-year college	35	89
2-year college	25	72
Vocational/technical	8	62

[a]Totals exceed the sum of the individual items because some students entered more than one type of institution.
[b]Entered by October 1980. All others entered after that date but before March 1982.

The rate of entry of 1980 seniors into postsecondary institutions varied considerably by sex, by demographic characteristics, and by the high school program the students had taken (table 3). Asian Americans entered 4-year colleges (51 percent) and 2-year colleges (37 percent) at higher rates than any other racial/ethnic group while Hispanics and American Indians had the lowest 4-year college entry rates (20 percent for each). Four-year college entry rates varied substantially by students' socioeconomic status (SES) level: 61, 32, and 19 percent for those from high, middle and low SES backgrounds, respectively. The corresponding 2-year college entry rates were 27, 27, and 20 percent.

Strong relationships in the expected directions were evident between 4-year college entry rates and both cognitive test performance level and high school program. Those in the middle one-half of the cognitive test performance range were more likely to enter 2-year colleges than those at either extreme (30 vs. about 20 percent). Those at the low end of the cognitive test performance distribution and those from vocational/technical (high school) programs were more likely than others to enter vocational/technical postsecondary institutions. Finally, entry rates varied by geographical region: for 4-year colleges from a high of 40 percent in the Northeast to a low of

26 percent in the West; and for 2-year colleges from a high of 38 percent in the West to 20 to 23 percent in the other three regions.

Thus the ratio of 4-year to 2-year entry rates varied dramatically—all the way from 2.0 to 1 in the Northeast to only 0.7 to 1 in the West where the 2-year college systems are especially strong. Disregarding type of institution, entry rates were significantly higher in the West than in the South (66 vs. 59 percent).

Table 3. Percentages of 1980 seniors who had entered postsecondary education, by selected student characteristics: February 1982.

Characteristics	Total[a]	4-year college	2-year college	Vocational/technical institutions
All persons	63	35[b]	25[c]	8[d]
Sex:				
Male	59	34	23	6
Female	66	36	26	9
Racial/ethnic group:				
Hispanic	52	20	28	9
Black	60	33	20	11
White	64	37	25	7
Asian American	86	51	37	4
American Indian	53	20	22	14
Socioeconomic status (SES):				
High	86	61	27	5
Middle	63	32	27	8
Low	46	19	20	9
Cognitive test performance:				
High	88	69	21	4
Middle	65	3*	30	8
Low	40	1	20	11
High school program:				
Academic	86	64	24	5
General	55	24	27	9
Vocational/technical	44	11	25	11
Region:				
Northeast	63	40	20	8
South	59	34	22	7
North Central	64	38	23	9
West	66	26	38	8

[a]Sum of details can exceed totals because some respondents entered more than one type of institution.
[b]Of these, 31 percent were immediate entry, i.e. by October 1980.
[c]Of these, 18 percent were immediate entry.
[d]Of these 5 percent were immediate entry.

Persistence in College

About 75 percent of the 1980 seniors who had entered a 4-year college by June 1981 stayed in the *same* college through February 1982, while 15 percent transferred to another college and 10 percent completed a short program or withdrew[1] (table 4). The corresponding figures for 2-year colleges were 59, 16, and 26 percent, respectively. Thus the "stability" of student attendance was greater for 4- than for 2-year colleges (75 vs. 59 percent, respectively). Among the 15 percent of 4-year college enrollees who transferred out, two-thirds entered another 4-year college, while the other third went to a 2-year college (footnote "d," table 4).

Among the 16 percent who transferred out of a 2-year college half went to another 2-year college, with the other half going to a 4-year college (footnote "e," table 4).

The "withdrawal" rates in table 4 reveal 4-year college rates varying from 2 percent for Asian Americans to 9 percent for whites to 15 percent or more for blacks and Hispanics;[2] 2-year college "withdrawal" rates ranged from 9 percent for Asian American to 27 percent for whites.

Among 2-year college entrants socioeconomic level appears to have no relationship to persistence rates—at each of the three levels 59 percent were persisters.

The lower the student's SES background the more likely the student was to withdraw: for 4-year colleges, 15 percent for low SES students vs. only 7 percent for high SES students. For 2-year colleges, the corresponding rates are 31 and 20 percent. Clearly, youngsters from low SES backgrounds who entered college found it more difficult to continue their college education than did their classmates from more advantaged backgrounds.

Table 4. Percentages[a] of 2- and 4-year college entrants who had persisted, transferred, completed short-term programs or withdrawn, by selected student characteristics: February 1982.

Characteristics[b]	4-year college			2-year college		
	Persister	Transfer	Completer/ withdrawer[c]	Persister	Transfer	Completer/ withdrawer[c]
All students	75	15[d]	10	59	16[e]	26
Racial/ethnic group:						
Hispanic	66	17	17	65	11	24
Black	71	14	15	61	15	24
White	75	15	9	57	16	27
Asian American	86	12	2	70	21	9
American Indian	81	11	9	61	21	18
Socioeconomic status (SES):						
High	77	17	7	59	21	20
Middle	75	14	11	59	15	26
Low	71	14	15	59	10	31
High school program:						
Academic	79	15	7	60	23	16
General	66	18	17	56	12	32
Vocational/technical	64	16	20	62	9	29

[a]Percentages are based on those individuals who entered college before June 1981.
[b]Characteristics are described in appendix B.
[c]Students who had completed short-term programs (i.e., completers) and students who had left school without completing programs (i.e., withdrawers) were not differentiated in this table because the information needed for so doing was not available in the HS&B first follow-up survey.
[d]Includes 10 percent 4-to-4 year college transfers and 5 percent 4-to-2 year college transfers.
[e]Includes 8 percent 2-to-2 year college transfers and 8 percent 2-to-4 year college transfers.

[1] Includes some persons who completed short-term programs. The survey instruments did not contain the information required to distinguish between these two categories. The second follow-up data will correct this problem.

[2] The apparently higher persistence of Asian Americans is based on a small sample of Asian Americans and does not differ significantly from the rate for whites.

Students who had taken a non-academic program in high school were more likely than those who had taken an academic program to withdraw from college: at least 2.4 times more likely for 4-year colleges and about twice as likely for 2-year colleges.

College Field of Study

The most popular field of study (table 5) for 1980 seniors who entered college was business (27 percent). The next most popular field was engineering (10 percent). Men were more likely than women to enter the traditionally male-dominated fields of engineering (18 vs. 3 percent, respectively) and physical sciences or mathematics (5 percent for men vs. 2 percent for women) but less likely to enter the traditionally female-dominated fields of education (3 vs. 13 percent, respectively) and health (2 vs. 12 percent, respectively).

Table 5. Percentages of academic program college students in specified fields of study 1½ years after high school graduation, by selected student characteristics:[a] February 1982.

Field of study	All students	Sex		Cognitive test performance			High school program		
		Male	Female	High	Middle	Low	Academic	General	Vocational, technical
All fields	100[b]	100	100	100	100	100	100	100	100
Arts & sciences:									
Humanities, fine arts[c]	7	7	7	8	6	5	7	7	5
Biological sciences	3	3	2	3	2	2	3	1	1
Physical sciences, mathematics	3	5	2	6	2	1	4	3	1
Social sciences	6	5	6	7	5	8	7	5	5
Other arts & sciences[d]	5	5	5	6	5	7	5	5	4
Applied fields:									
Business	27	29	26	21	31	32	23	31	40
Education	8	3	13	5	10	12	7	11	5
Engineering	10	18	3	16	7	4	12	6	10
Computer science	5	6	5	5	6	6	6	4	5
Health	7	2	12	5	8	8	7	6	7
Pre-professional	4	5	4	6	4	3	5	4	2
Other applied fields[e]	8	7	8	6	10	6	7	10	10
Other fields[f]	6	6	6	6	6	8	6	7	6

[a]Student characteristics are defined in appendix B.
[b]Details may not add to 100 because of rounding.
[c]Includes: art, English, ethnic studies, foreign languages, interdisciplinary studies, music, philosophy, and religion.
[d]Includes architecture, and psychology.
[e]Includes agriculture, communications, and home economics.
[f]Includes all other fields that were not classified.

Education attracted relatively few seniors from the top quartile in cognitive abilities compared with the lowest quartile (5 vs. 12 percent, respectively). Business also attracted fewer from the top than from the bottom quartile (21 vs. 32 percent, respectively). Those with high cognitive skills were more likely than those with low cognitive skills to choose physical sciences and mathematics (6 vs. 1 percent, respectively), engineering (16 vs. 4 percent, respectively), and pre-professional (6 vs. 3 percent, respectively).

Students who had been in an academic high school program, as compared with those who had taken a general program, were more likely to study engineering (12 vs. 6 percent, respectively) or biological sciences (3 vs. 1 percent, respectively) and less likely study in business (23 vs. 31 percent) or education (7 vs. 11 percent), respectively).

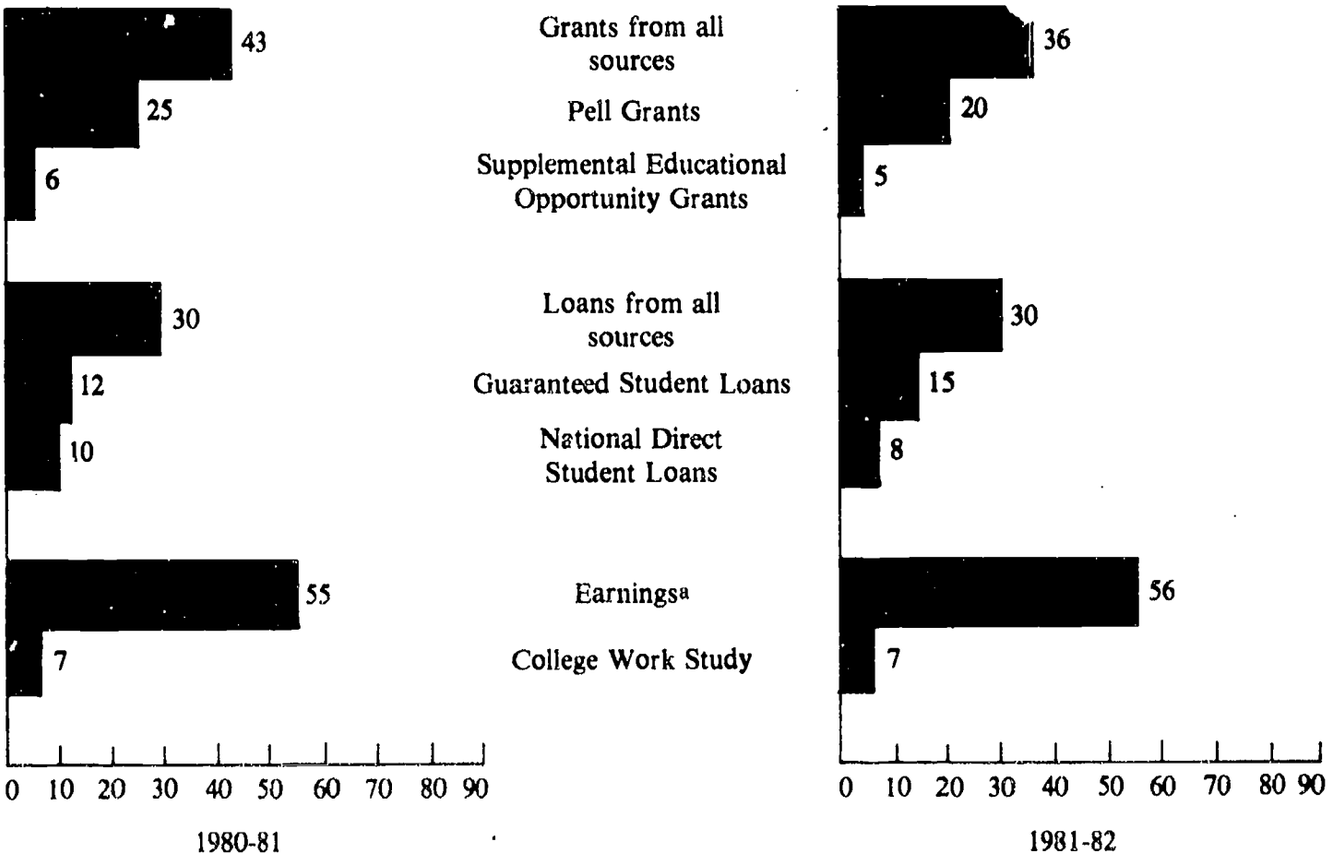
Finally, it should be noted that college students from high school academic programs overwhelmingly preferred applied fields over arts and sciences (67 vs. 26 percent, respectively, with 6 percent in fields that were not classifiable).

Financing Postsecondary Education

Note: Throughout this section the reader should keep in mind that all statements made apply only to those 1980 seniors who participated in postsecondary education in the 1980-81 academic year or in the 1981-82 academic year. Presumably most of these participants were college freshmen in the earlier year and sophomores in the later year. The statements in this section do not apply to all postsecondary education participants in those years, e.g., juniors and seniors. All the financial aid and family income statistics in this chapter are estimates based on student reports.

About 43 percent of 1980 high school seniors who attended postsecondary institutions during the 1980-81 school year received grant money (figure 1). The major source of this money was the Pell Grant program which made awards to 25 percent of these respondents. The following school year the percentage receiving grants from any source dropped to 36 percent and the percentage receiving Pell Grants dropped to 20 percent. These drops may have resulted partly from the fact that by 1981-82, many of these respondents were sophomores, and the Pell Grant program serves mainly freshmen. Government records show that total disbursements under the Pell Grant program remained unchanged from the 1980-81 to the 1981-82 school year.

Figure 1. Percentages of students receiving specified kinds of financial aid: academic years 1980-81 and 1981-82.



[a]Includes those portions of the students' personal funds that were used in financing their schooling. These funds were derived primarily from employment earnings but might also include gifts.

The percentage of 1980 high school seniors receiving loans held steady at 30 percent from 1980-81 to 1981-82 as did the percentage who used earnings to fully or partially finance their education (around 55 percent each year). The percentage who received guaranteed student loans, however, did increase slightly (from 12 to 15 percent, respectively).

The percentage who received a *grant* of any kind in 1980-81 increased as tuition increased and as family income decreased (figure 2). At low tuition institutions, 64 percent of low family income students received grants, but only 25 percent of high family income students; the corresponding figures at high tuition institutions are 88 and 33 percent. The likelihood that a student received a *loan* increased as tuition cost increased, but was not related in

any strong way to family income level. Finally, students in low tuition colleges were less likely than those in high tuition colleges to use *earnings* to finance their education, although this relationship was not statistically significant among students at the highest family income level.

Among the 1980 high school seniors who attended college in 1980-81, 23 percent used neither grants, loans, nor earnings in financing their education (table 6). Thirty-seven percent (11 + 5 + 21) used only one of these three sources, 27 percent (5 + 14 + 8) used two of the three sources, and 12 percent used all three. More than three-fifths (62 percent) of the grant recipients also used earnings to finance their college costs (14 + 12/11 + 5 + 14 + 12) x 100. Over half (55 percent) of the students drew upon their own earnings in meeting the costs of college. About 3 out of 10 (30 percent) and 4 out of 10 (42 percent) received loans and grants, respectively. Forty-four percent (21 + 23) received neither a grant nor a loan.

Table 6. Percentages of 1980 seniors participating in postsecondary education who received specified packages of financial aid: 1980-81.

Type of aid	Percent utilizing
None	23
Grant only	11
Loan only	5
Earnings only	21
Grant and loan	5
Grant and earnings	14
Loan and earnings	8
Grant, loan, and earnings	12
Total	100

The average financial aid package per respondent changed in composition between the school years of 1980-81 and 1981-82 (table 7). Considering all of the 1980 high school seniors who were attending college in 1980-81, regardless of whether they received aid or not, the average student received less in the way of grant support in 1981-82 than in 1980-81 ($561 vs. $616). The average student in 1981-82 took out a larger loan ($605 vs. $529) and relied more on his or her own earnings ($570 vs. $518).

In 1980-81, the average amount of total aid (grants plus loans plus earnings) was more than 2.5 times larger for respondents in high tuition colleges ($2,989) than for those who attended low tuition colleges ($1,092). There was a strong positive relationship between tuition level of school and the average size of grants and loans awarded. The average grant was about twice as large for the high tuition schools as for the low tuition schools and the average loan was almost 4 times as large. As would be expected for need-based programs, the average *grant* amount was much larger for low income students ($801 in low tuition colleges, $2,593 in high tuition ones) than for high income students ($226 in low tuition colleges, $556 in high tuition ones). Although the average *loan* amount was less for low income than for middle income students, the average amount for middle income students did not differ significantly from that for high income students. Similarly, the estimated average *earnings* amounts were less for low than for middle income students,[1] but the averages for middle income students were about the same as those for high income students.

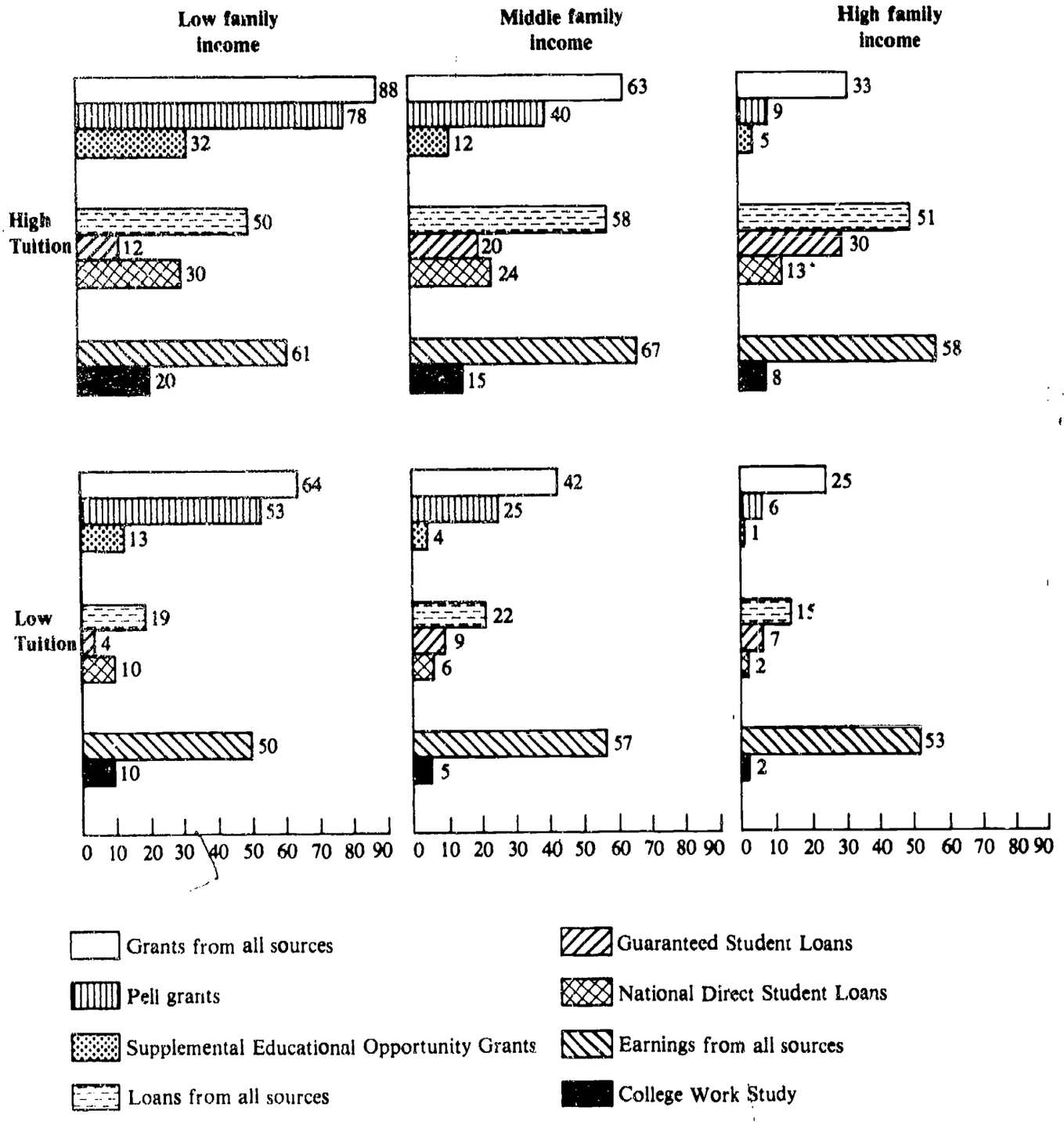
In summary, the majority of the 1980 senior cohort members entered some type of postsecondary education, and most of these entered immediately. Most of the postsecondary students persisted during the first 2 years after high school. They pursued diverse programs with most choosing applied fields of study. Finally, a majority of respondents financed their postsecondary schooling through the use of grants and/or loans with substantial assistance from Federal programs.

These generalizations should not obscure the diversity of the transitions from high school to postsecondary education. Specifically, nearly one-half of the postsecondary students entered 2-year colleges or vocational/technical schools some of which are very different from the traditional 4-year college (table 3). At least one-seventh of the 1980 seniors delayed their entry into postsecondary education (table 2). Substantial proportions of the postsecondary students withdrew, especially among low socioeconomic groups and disadvantaged minority groups (table 4). Slightly less than half of all 1980 high school seniors (44 percent) financed their postsecondary education

[1] For low tuition institutions, however, the observed difference was not large enough to be statistically significant.

without the use of grants or loans (table 6). Finally, a quarter of those who attended college did so without the aid of grants, loans, or earnings (table 6). Presumably, they relied primarily on their parents for support.

Figure 2. Percentage of 1980 seniors participating in postsecondary education who received specified kinds of financial aid, by tuition and fees level and family income level: academic year 1980-81.



Men were more likely than women to major in traditionally male-dominated fields and less likely to major in traditionally female-dominated fields (table 5). The prospects for improving the quality of the supply of future teachers (i.e. education majors) are not helped by the fact that relatively few high achieving students entered the field of education (table 5).

Although postsecondary education was a major activity for 63 percent of the 1980 senior cohort members, for the remaining 37 percent it was not (table 2). In the following chapter the labor force activities of the 1980 seniors will be discussed in detail.

Table 7. Average dollar value of grants, loans, and earnings received by 1980 seniors participating in postsecondary education in academic year 1980-81, by tuition and fees level and family income level, and average dollar value of all grants, loans, and earnings of 1980 seniors participating in post-secondary education in academic year 1981-82.

Academic year	Tuition and fees level	Family income level	Average dollar value		
			Grants	Loans	Earnings
1980-81	All	All	$ 616	$ 529	$ 518
	High	All	1,048	1,105	836
		High	556	1,125	831
		Middle	1,219	1,155	894
		Low	2,593	807	602
	Low	All	429	277	386
		High	226	258	397
		Middle	449	315	397
		Low	801	184	319
1981-82	All	All	561	605	570

Chapter IV. Labor Force Participation

The high unemployment rate was a major problem facing the Nation when 1980 seniors left high school and in spring 1980 when the first follow-up data were collected. The problem of securing a job was particularly severe for young adults in general, and for minority youth in particular. The number of high school graduates had peaked in 1975, 1976, and 1977 at about 3,150,000 as the Post-World War II "baby boom" moved through the high school years, and by 3 percent in 1980 to about 3,050,000. Thus, the 1980 graduates experienced fierce competition from a large pool of slightly older adults during a period of limited job opportunities. This section examines how well 1980 seniors were able to obtain employment and how much they were able to earn.

Employment Status

In October 1981, 74 percent of 1980 seniors who were not attending postsecondary education institutions at that time were working—14 percent part-time, 60 percent full-time or more (table 8). In contrast, only 56 percent of full-time students were working—37 percent part-time and 19 percent at least full-time. The employment figures for part-time students resembled those for nonstudents much more than they did those of full-time students. Fewer part-time students than nonstudents, however, worked over 44 hours per week (14 vs. 19 percent, respectively), while more part-time students than nonstudents worked part-time (24 vs. 14 percent, respectively). Part-time students were as likely as nonstudents to be working full-time and more likely to be working part-time.

Table 8. Percentage of 1980 seniors in specified work-status categories, by student status: October 1981.

Hours worked weekly	Student status		
	Nonstudent	Part-time student	Full-time student
Total	100	100	100
Not working	26	21	44
Part-time (less than 34 hours)	14	24	37
Full-time (34-44 hours)	41	41	12
More than 44 hours	19	14	7

Seventy-five percent of 1980 seniors were in the labor force in February 1982.[1] This percentage ranged from a low of 70 percent for small town residents to a high of 79 percent for those living in suburbs of large cities. Overall, labor force participation was higher in suburban areas than in inner cities. There was no clear relationship between labor force participation rates and unemployment rates. The latter rates were lowest in suburbs of very large cities (5 percent), highest in rural or farming communities and small towns (11 percent), and averaged out to 9 percent (table 9).

The unemployment rate for 1980 seniors started out at 18 percent in June 1980, at the time of graduation, but dropped quickly to 8 percent that fall, and remained fairly constant at the 7 to 9 percent level through February 1982 (table 10). Except for Asian Americans, minority-group students experienced considerably higher unemployment rates than whites. For the October 1980 through February 1982 period, the unemployment rates averaged 15 percent for blacks, 12 percent for American Indians, and 11 percent for Hispanics, but only 7 percent for whites and 5 percent for Asian Americans. Young women had more difficulty obtaining employment than did young men. The average unemployment rates during the October 1980—February 1982 period were 10 percent for females, 7 percent for males.

[1] The labor force consists of all persons who are working or looking for work. For this study, members of the armed forces were regarded as members of the labor force who were employed. Part-time students who were working or looking for work were considered as part of the labor force. On the other hand, full-time students were considered part of the labor force only if they were also working (but not if they were only seeking work).

Table 9. Percentage of 1980 seniors who were in the labor force[a] and percentages who were unemployed, by community type: February 1982.

Community type	Percent in labor force	Percent unemployed
Total	75	9
Military base	89	3
Suburb of large city	79	7
Rural or farming community	78	11
Suburb of very large city	76	5
Suburb of medium-sized city	76	9
Very large city (more than 500,000)	75	8
Large city (100,000 - 500,000)	74	8
Medium-sized city (50,000 - 100,000)	73	9
Small town (less than 50,000)	70	11

[a]The labor force consists of all persons who are working or looking for work. For this study, members of the armed forces were regarded as members of the labor force who were employed. For this study, part-time students who were working or looking for work were considered as part of the labor force. On the other hand, full-time students were considered part of the labor force only if they were also working (but not if they were only seeking work).

Table 10. Percentage of labor force[a] participants (among 1980 seniors) who were *unemployed*, by race/ethnicity and sex: six selected dates.

Characteristics	June 1980	October 1980	February 1981	June 1981	October 1981	February 1982
Total	18	8	9	8	7	9
Race/ethnicity						
Hispanic	19	10	11	10	10	13
Black	29	15	16	15	15	16
White	16	7	8	7	6	8
Asian American	28	10	3	2	4	5
American Indian	28	15	16	9	8	13
Sex						
Male	15	6	8	6	6	7
Female	21	10	10	10	9	11

[a]See footnote to Table 9.

Earnings

For the 68 percent of the 1980 seniors who were working in February 1982, the average pay rate was $4.99 per hour for an average of 37 hours per week (table 11). Full-time students earned $4.71 per hour, which was substantially above the minimum wage, but less than the $5.15 earned by the nonstudents. Part-time students were

similar to nonstudents in terms of hours worked and earnings. However, the lower rate of employment among part-time students indicates the special nature of their postsecondary circumstances.

Table 11. Percentage of 1980 seniors who were employed and hours and earnings of those employed, by various characteristics: February 1982

	Percent employed[b]	Workers[a] only		
		Mean hours per week	Mean weekly earnings	Mean hourly earnings
Total	68	37	$179	$4.99
Student status:				
Nonstudent	76	42	207	5.15
Part-time student	83	39	198	5.09
Full-time student	56	29	130	4.71
Sex:				
Male	71	40	204	5.31
Female	65	34	155	4.67
High school program:				
Academic	61	32	150	4.89
General	71	39	189	4.94
Vocational/technical	74	40	199	5.13
Urbanization:				
Urban	67	35	172	5.07
Suburban	70	37	182	5.06
Rural	66	38	179	4.80

[a]Individuals who reported more than 84 hours of work per week or more than $800 earnings per week were not included in this analysis. Also deleted were individuals reporting 0 hours of work or 0 earnings per week.
[b]These percentages are based on the total group of 1980 seniors, regardless of whether they were students or nonstudents, working or seeking employment.

Employed women, on the average, worked 15 percent fewer hours per week than employed men (34 vs. 40 hours, respectively), had hourly earnings 12 percent lower ($4.67 vs. $5.31, respectively), and had weekly earnings 24 percent lower ($155 vs. $204, respectively).

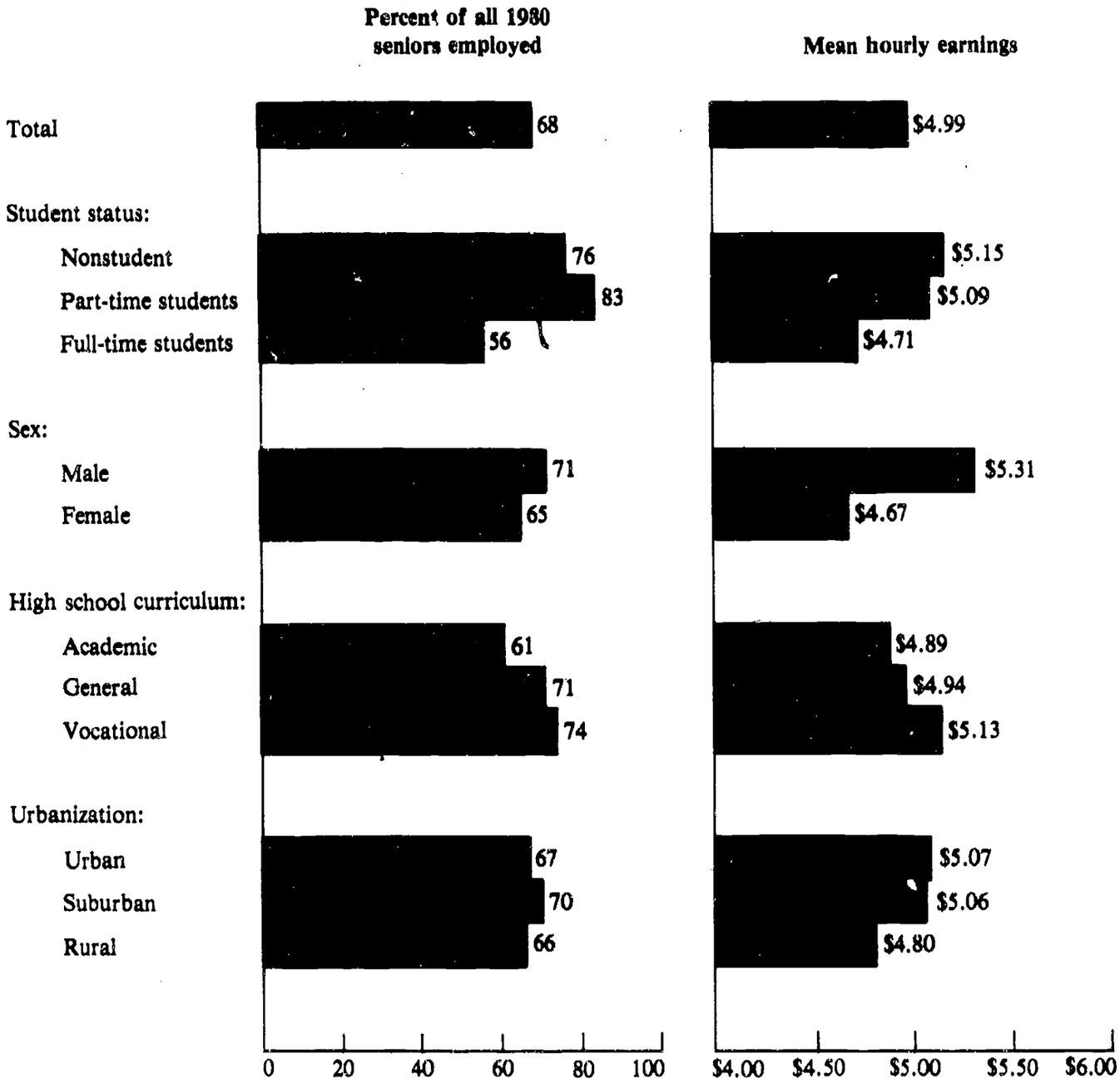
Workers who had participated in a vocational technical program in high school had much higher weekly earnings in February 1982 than did the academic program students ($199 vs. $150, respectively) and significantly higher than the general program students ($189). Mean hourly earnings, however, were nearly the same for all three groups (around $5.00).

Workers from rural communities worked more hours per week than did those from urban areas (38 vs. 35, respectively) but earned a smaller hourly wage ($4.80 vs. $5.07, respectively).

Some of the relationships described above are portrayed graphically in Figure 4.

In summary, a little over three-fourths of the nonstudents were working in February 1982 as compared with 56 percent of the full-time students and 83 percent of the part-time students. Full-time students earned an hourly wage substantially above the minimum legal wage, but less than that earned by nonstudents. Chapter V discusses entry into the military service as another option that was open to the 1980 seniors after graduation.

Figure 4. Employment and earnings of 1980 seniors: February 1982

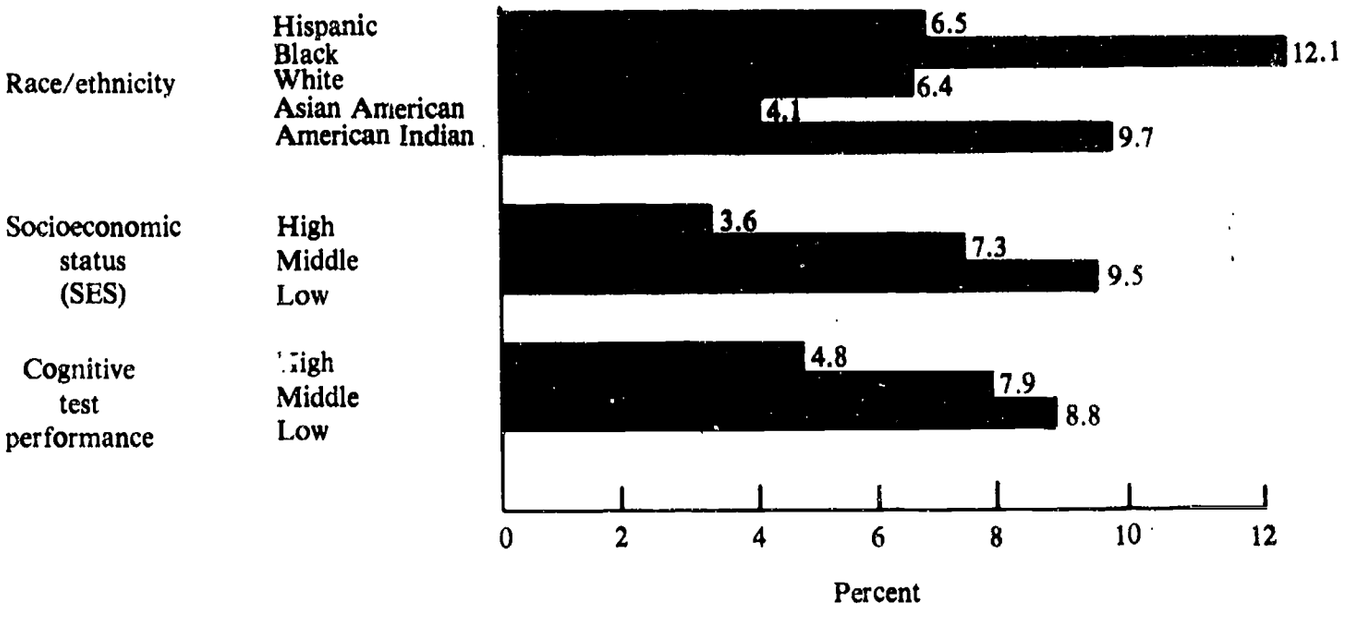


Chapter V. Military Service

Entry into the military service is a major alternative—in addition to the options of going to college and working—for youngsters leaving high school. For many from disadvantaged backgrounds, it may be the most promising option during a period of high unemployment; and for some disadvantaged youths, college may not be a realistic option.

Thus as might be expected, blacks, the group with the highest unemployment rates (table 10), had the highest rate of entry (of males) into the armed services—12 percent vs. 6 percent for whites (figure 5). The male entry rate has a strong relationship with socioeconomic level, varying from 10 percent for those from the lowest quartile to 4 percent for those from the highest. The rates of entry of males into the armed services also varies by cognitive test score performance level, although not quite so strongly as by socioeconomic level—from 9 percent of those in the lowest test performance quartile to 5 percent of those in the highest quartile.

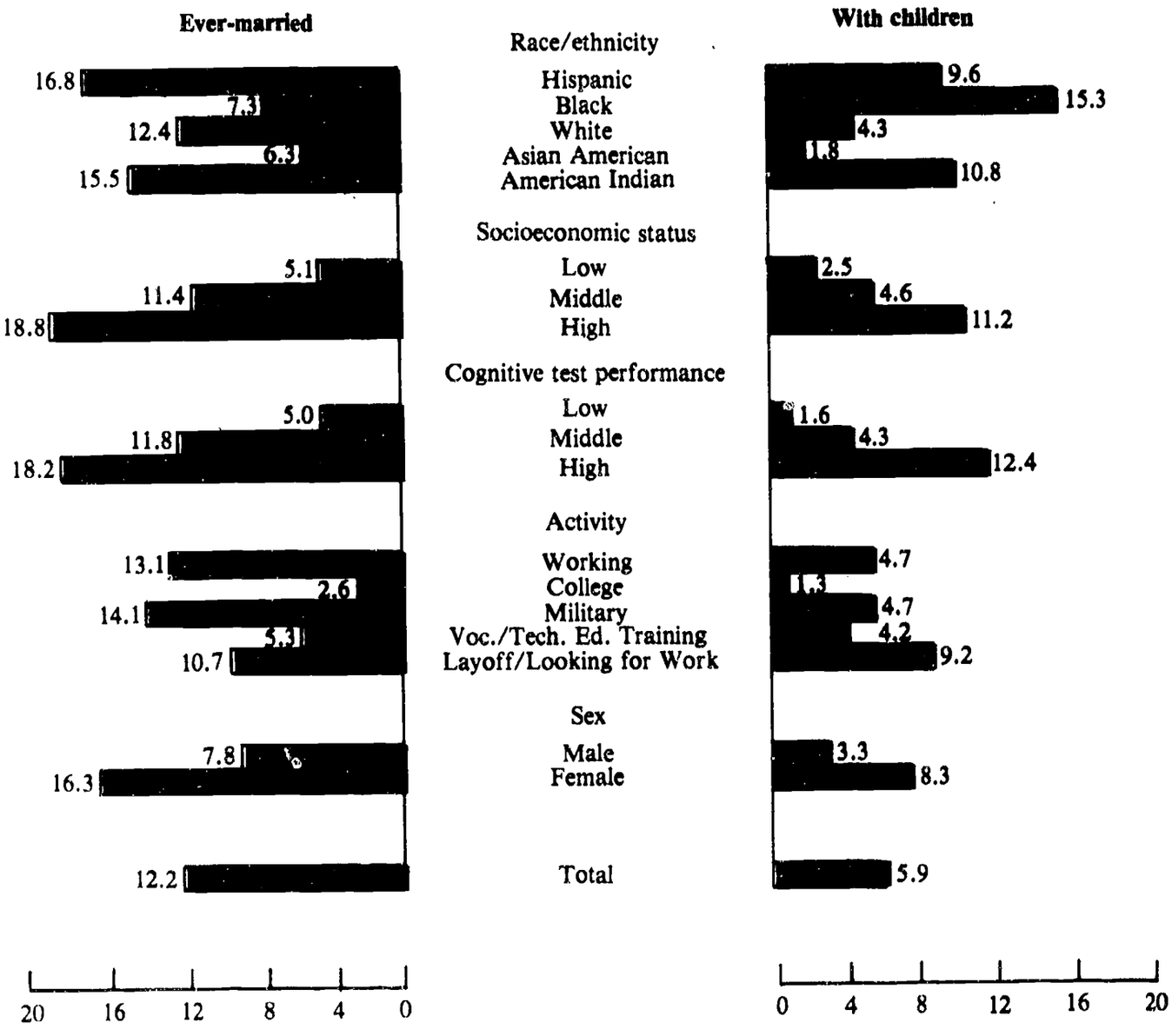
Figure 5. Percentage of 1980 male seniors who entered military service, by race/ethnicity, socioeconomic status (SES), and cognitive test performance.



Chapter VI. Family Formation

The traditional sequence of major life events for young adults has been: completing full-time education, getting a full-time job, getting married, and having children. For various reasons, however, some do not follow that typical sequence. Thus we find that the percentage of 1980 seniors who had ever married (as of spring 1982) was 3 for those currently attending college, and 13 for those currently employed. It is entirely possible that some of these married respondents were both employed and attending college. One percent of those attending college already had one or more children, as compared with 5 percent of those who were employed (figure 6).

Figure 6. Percentage of 1980 high school seniors ever-married and with children by race/ethnicity, socioeconomic status, cognitive test performance, activity state, and sex (spring, 1982).



Since the average age at marriage tends to be several years lower for females than for males, it is not surprising that more female than male 1980 seniors had married by spring 1982 (16 vs. 8 percent, respectively), and more had had at least one child (8 vs. 3 percent).

Finally, there were variations in family formation statistics by racial/ethnic group, but the patterns were quite different for parentage than for marriage. Hispanics had the highest marriage rate (17 percent); by comparison the marriage rates were 12 percent for whites and only 7 percent for blacks. On the other hand, the percentage of 1980 seniors who had at least one child was highest for blacks (15 percent); the figures for Hispanics and whites were 10 and 4 percent, respectively.

Family formation statistics also varied considerably by socioeconomic background level and test performance level, the range of variation being about the same for each of these classification variables—from 5 (highest quartile) to about 18 percent (lowest quartile) married and from 2 (highest quartile) to 12 percent (lowest quartile) with children.

Chapter VII. Attitudes and Values

As young people make the transition from high school to adult life, they make a number of decisions with important consequences for their future. Their environment and experiences during the subsequent 2 years are largely determined by their choices; and their views of themselves and their goals and values may be shaped by events and experiences during this transitional period.

Self-esteem

On the average, 1980 seniors felt better about themselves in spring 1982 than they did when they were high school seniors (table 12). The amount of gain in self-esteem was about the same for all activity categories (work, college, etc.) with one exception: the gain for those who entered the armed forces was about twice as large as the average gain for those who pursued other activities.

Table 12. Mean self-esteem scores[a] of 1980 seniors in spring 1980 and February 1982, by February 1982 activity.

Activity (February 1982)[b]	Year		Percentage point difference (1982-1980)
	1980	1982	
All persons	72.9	78.3	5.4
Working for pay	72.8	78.4	5.6
Taking academic courses at college	75.2	79.4	4.2
Taking vocational/technical courses at any kind of school or college	72.0	77.7	5.7
Serving in an apprenticeship program	73.4	79.7	6.3
On active duty in armed forces	71.9	82.4	10.5
Homemaker (without job)	70.7	76.6	5.9
With job, but on lay-off	69.6	76.8	7.2
Looking for work	70.2	75.2	5.0
Taking a break	73.3	76.2	2.9
Other	72.9	79.4	6.5

[a]Respondents were asked how they felt about each of six statements designed to assess their self-esteem. For each statement the respondent could mark one of five responses varying from agree strongly to disagree strongly. For this analysis, the choices were assigned values of 0, 25, 50, 75, and 100—high values indicating high self-esteem—and an average score over items was obtained for each person.
[b]Some respondents were engaged in more than one activity and were asked to "mark all that apply."

Goals and Values

During the first 2 years after high school, some of the life goals and values of youngsters changed appreciably (table 13). The major shift was toward placing a higher value on family goals: having children (up 9 points for both males and females); marriage and family life (up 7 points for males, 3 points for females); and living close to parents and relatives (up 2 points for males, 5 points for females).[1] While a growth in interest in correcting social and economic inequalities took place (up to 4 points for each sex), desire to be a community leader fell 2 points for each sex. Over the 2-year period, concern with having lots of money declined 7 points for males and 4 points for females. Finally, with the passage of time, females became less interested in steady work while there was little change for men.

[1] The scaling of questionnaire responses is described in footnote to table 13.

Table 13. Mean "importance" ratings[a] awarded to various life goals by male and female 1980 seniors: spring 1980 and spring 1982.

Life value	Males		Females		Percentage point difference (1982-1980)	
	1980	1982	1980	1982	Males	Females
Success in line of work	93.8	92.5	93.4	90.3	-1.3	-3.1
Marriage and happy family life	85.9	92.5	90.0	93.1	6.6	3.1
Steady work	92.0	92.2	91.9	89.1	0.2	-2.8
Strong friendships	89.9	88.9	90.4	88.7	-1.0	-1.7
Leisure time to enjoy own interests	84.9	85.7	83.6	84.8	0.8	1.2
Better opportunities for children than I've had	80.5	80.3	81.0	80.0	-0.2	-1.0
Having children	56.0	64.7	62.9	71.9	8.7	9.0
Having lots of money	65.6	58.3	53.2	49.3	-7.3	-3.9
Living close to parents and relatives	38.6	40.4	40.5	45.7	1.8	5.2
Correcting social and economic inequalities	34.6	38.1	38.5	42.3	3.5	3.8
Being a community leader	34.4	31.9	26.4	24.3	-2.5	-2.1
Getting away from area now in	29.2	20.9	28.2	19.8	-8.3	-8.4

[a]The questionnaire asked "How important is each of the following in your life?" Respondents could answer "Not important," "Somewhat important" or "Very important. These three response options were assigned values of 0, 50, and 100, for the purpose of this analysis.

Appendix A

High School and Beyond Data Files Available for Public Use

Appendix A

The data collected in the base-year and first follow-up surveys have been processed and are available on the computer files described below. These files along with appropriate documentation, may be obtained at a modest cost from the Data Systems Branch of NCES. Table A-1 summarizes the content areas covered by each file.

Base-Year Survey Files

School File
The School File contains school questionnaire responses that were provided by administrators in 988 public, Catholic, and other private schools. Each record has a total of 237 variables. The questionnaire focused on a number of school characteristics including: type and organization, enrollment, faculty composition, instructional programs, course offerings, specialized programs, participation in Federal programs, faculty characteristics, funding sources, discipline problems, teacher organizations (e.g. unions), and grading systems.

Language File
The Language File contains information on each student who reported some non-English language experience either during childhood or at the time of the survey. This file contains 11,303 records (sophomores and seniors combined), 42 variables for each student.

Parent File
The Parent File contains questionnaire responses from the parents of about 3,600 sophomores and 3,600 seniors who are on the Student File. Each record on the Parent File contains a total of 307 variables. Data on this file include parents' aspirations and plans for their children's postsecondary education.

Twin and Sibling File
The Twin and Sibling File contains responses from sampled twins and triplets; data on twins and triplets of sample members; and from siblings in the sample. This file (2,718 records) includes all of the variables that are on the HS&B student file.

Teachers' Comments File
The Sophomore Teacher File contains responses from 14,103 teachers on 18,291 students from 616 schools. The Senior Teacher File contains responses from 13,683 teachers on 17,056 students from 611 schools. At each grade level, teachers had the opportunity to answer questions about HS&B-sampled students who had been in their classes. The typical student in the sample was rated by an average of four different teachers. The files contain approximately 76,000 teacher observations of sophomores and about 67,000 teacher observations of seniors.

Friends' File
The Friends' File contains identification numbers of students in the HS&B sample who were named as being friends of other HS&B-sampled students. Each record contains the ID of sampled students and ID's of up to three friends. Linkages among friends can be used to investigate the sociometry of friendship structures, including reciprocity of choices among students in the sample, and for tracing friendship networks.

First Follow-Up Survey Files

1980 Senior Cohort File
This file contains base-year as well as first follow-up survey data for a subsample of 11,995 1980 seniors. The tape also includes data on selected school variables various composite scores, and a set of weights for use in making population estimates. The file can be merged with any of the base-year survey files. Included are data about their work and education experiences since leaving high school.

1980 Sophomore Cohort File
This file contains both base-year and first follow-up survey data for a subsample of 29,737 persons who were sophomores in 1980. Persons who were no longer in the same high school (dropouts, early graduates, and transfer students) are represented in the subsample. The tape also includes data on selected school variables, various composite scores, and a set of weights for use in making population estimates. The file can be merged with any of the base-year survey files.

Transcript File
The Transcript File contains high school course taking behavior information for 15,941 1980 high school sophomores. Data includes a 6-digit course number for each course taken along with course credit, course grade, year taken, and other pertinent information. Appropriate weights also are contained on the file.

Offerings and Enrollments File
This file contains school information and course offerings and enrollment data for 957 schools. Each course offered is identified by a 6-digit course number. Other information, such as credit offered for course, enrollment in course, and when course was offered by school, also is contained on each record.

Updated School File
This file contains base-year as well as first follow-up survey data on the 1,015 schools that participated in HS&B. Sampling stratum codes and school weights also were included on the file.

Appendix B

Definition of Classification Variables

Appendix B

Seven major classification variables were used in this report to define subgroups for analysis: sex, race/ethnicity, socioeconomic status (SES) composite, cognitive test score composite, high school program, geographical region, and community type. Table B-1 shows the composition of the senior cohort first follow-up survey sample by these classification variables, and the following material describes how they were defined.

Sex

Student's sex was available in three survey documents. If one or more of the sources contained a valid sex code and none of the sources contained conflicting information, that sex code was used. In 857 cases either no valid sex code was found or contradictory information was provided. In these cases, the respondent's sex was determined by inspection of first names and a review of the documentation.

Race/ethnicity

Race and ethnic origin codes were available from both base-year and first follow-up questionnaires. Persons were classified into mutually exclusive racial/ethnic groups based on the following hierarchical sequence: (1) if a Hispanic ethnic origin was indicated either year, the person was classified as Hispanic; (2) if a race code American Indian or Alaskan Native was indicated either year, the person was classified as American Indian; (3) if an Asian or Pacific Islander race code was present either year, the person was classified as Asian; (4) if a race code of black was present either year, the person was classified as black; (5) if a race code of white was present either year, the person was classified as white. The 120 remaining students either identified their race as "other" or did not indicate race or ethnicity in either year.

Socioeconomic status (SES)

The SES index is a composite of five equally-weighted components: father's education, mother's education, family income, father's occupation, and household items. The index values are based on information provided in the base-year survey. Respondents were classified into one of three subgroups (lowest, middle two and highest quartile) based on the *weighted* SES distribution.

Cognitive test score composite

The test score composite was computed by averaging the standardized scores of 1980 HS&B seniors on reading, mathematics, and vocabulary tests. Students were classified into one of three subgroups (lowest, middle two, and highest quartile) based on the *weighted* distribution of the composite score.

High school program

High school curricular program was identified from the answers of seniors to the question "Which of the following best describes your present high school program?" The student could mark "general," "academic or college preparatory," or any of seven "vocational" (occupational preparation) areas.

Geographical region

HS&B was designed to provide estimates for each of nine Census Bureau sections. For this report, however, these sections were collapsed into the four major regions. These regions are:

Northeast (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania).

North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas).

South (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, and Texas).

West (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii).

Urbanization

Persons were assigned to one of three categories based on the location of the school they attended in the base-year survey: urban if located in the central city of a Standard Metropolitan Statistical Area (SMSA); suburban if located in an SMSA, but outside the central city; and rural if not located in an SMSA.

In addition to the above major classification variables, the following defined variables were used occasionally to divide the total population into subgroups.

Family-income level

Base-year student questionnaire item 101 was employed to place students into three family income levels: low, if less than $12,000 per year; middle, if between $12,000 and $19,999; and high, if $20,000 or more.

Tuition and fees level

Values from the Higher Education General Information Survey and the Survey of Noncollegiate Post-secondary Schools with Occupational Programs were merged using Federal Interagency Committee on Education (FICE) codes determined from first follow-up survey item 33. If FICE codes could not be matched, values from first follow-up survey item 43 were utilized. Values were categorized into two levels: low, if $2,200 or less; and high, if more than $2,200.

School status

Students were separated from non-students by using "PSEFE82," a composite variable that indicated postsecondary education (PSE) participation during February 1982. For those individuals classified as students, variable PSEFE82 pointed to schools attended during February, 1982. For each school attended, responses to first follow-up survey question 33 indicated full or part-time status of student. If a student was attending more than one school during February, 1982, a response of full-time in any one school resulted in a classification of full-time. Students responding "part-time" or "don't know" were classified as part-time students.

Activity state – February, 1982

Students were asked to report their activities during the first week of February, 1982. The students could mark any or all of the following activities:

a. Working for pay at a full-time or part-time job
b. Taking academic courses at a 2- or 4-year college
c. Taking vocational or technical courses at any kind of school or college (for example, vocational, trade, business, or other career training school)
d. Serving in an apprenticeship program or government training program
e. On active duty in the Armed Forces (or service academy)
f. Homemaker (without other job)
g. With a job but on temporary layoff from work or waiting to report to work
h. Looking for work
i. Taking a break from working and from school

For purposes of this report, items "c" and "d" and items "g" and "h" were combined to form the two categories: vocational/technical courses or training program and temporary layoff/looking for work.

Table B-1. Composition of 1980 senior cohort first follow-up survey sample by selected classification variables

Classification variable and subgroups	Number	Percent[1]
Total sample	11,995	100.0
Sex:		
Male	5,675	47.3
Female	6,320	52.7
Race/ethnicity:		
Hispanic	2,918	24.3
Non-Hispanic:		
American Indian or Alaskan Native	209	1.7
Asian or Pacific Islander	391	3.3
Black	2,940	24.5
White	5,417	45.2
Other or Unclassified	120	1.0
Socioeconomic status composite (SES):		
Lowest quartile	4,218	35.2
Middle two quartiles	4,824	40.2
Highest quartile	2,088	17.4
Unclassified	865	7.2
Cognitive test score composite:		
Lowest quartile	3,405	28.4
Middle two quartiles	4,549	37.9
Highest quartile	2,305	19.2
Unclassified	1,736	14.4
High school program (self-reported):		
Academic	4,328	36.1
General	4,118	34.3
Vocational	2,853	23.8
Unclassified	696	5.8
High school census region:		
Northeast	2,341	19.5
North Central	2,800	23.3
South	4,434	37.0
West	2,420	20.2
High school urbanization code:		
Urban	3,342	27.9
Suburban	5,441	45.4
Rural	3,212	26.8

[1]Total of subgroup percentages may not equal 100.0 due to rounding.

Appendix C

Technical Notes

Appendix C

Sample Design[1]

Base Year Survey. HS&B employed a two-stage, highly stratified sample design. In the first stage, 1,122 schools that had either 10th or 12th grade students (or both) were drawn. To make the sample more useful for policy analysis, the following types of schools were oversampled: alternative public schools, public schools with high percentages of Hispanic students, Catholic schools with high percentages of minority-group students, and high-performance private schools. In the second stage, 36 sophomores and 36 seniors were randomly selected, school size permitting. The sample was augmented by the addition of the co-twins of twins selected in the probability sample.

First Follow-Up Survey. A subsample of 11,995 of the 1980 seniors selected for the base-year survey was chosen to continue in follow-up surveys. To enhance the usefulness of the subsample for policy analysis, the following subgroups were oversampled: Hispanics and blacks, especially those with high cognitive test scores; Asians; American Indians; whites from low SES backgrounds with high cognitive test scores; and persons whose parents had participated in a survey that collected data for addressing student financial aid policy questions. The probability subsample included 495 persons who, although selected, had not participated in the base-year survey. Questionnaires also were sent to all 204 co-twins of twins included in the probability subsample.

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations.

Nonsampling errors can be attributed to many sources: inability to obtain complete information about all students in all schools in the sample (e.g., some students are absent on survey day, schools or students refuse to participate, students participate but answer only certain items, etc.); ambiguities in definitions; differences in interpretation of questions; inability or unwillingness to provide correct information; mistakes in recording or coding data; and other errors of collection, response, processing, sample coverage, and estimation of missing data.

The accuracy of a survey result is determined by the joint effects of sampling and nonsampling errors. In surveys with sample sizes as large as those employed by or in HS&B, nonsampling errors generally are the primary concern, except where separate estimates are made for relatively small subpopulations.

The three major ways in which survey data such as those obtained in HS&B may fall short of full accuracy are discussed below.

Nonresponse bias. One of the most serious threats to the accuracy of survey estimates is bias resulting from failure to obtain data from all sampled units. A total of 811 (72 percent) of the 1,122 eligible schools chosen in the sample participated in the base-year survey. Of the 311 schools that were unable or unwilling to participate, 204 were replaced with schools which matched them with regard to geographical area, enrollment size, community type, and other characteristics. This brought the total number of participating schools to 1,015 or 90 percent of the 1,122 target. A total of 1,445 eligible schools were contacted to obtain 1,015 participants.

The student-level base-year survey response rate within participating schools was 85 percent. The first follow-up survey response rate was 94 percent.

Base-year survey design weights were adjusted for school-level nonresponse by appropriately distributing the design weights of nonparticipating schools to participating schools within each of 27 strata; and then they were adjusted for student nonresponse by appropriately increasing the weights of participating students to compensate for students within the same school who did not participate. First follow-up survey nonresponse weight adjustments were made based on school type for base-year survey nonparticipants.

[1] Detailed descriptions of the base-year and first follow-up survey sample designs may be found in *Sample Design Report* by M. Frankel, L. Kohnke, D. Buonanno, and R. Tourangeau, National Opinion Research Center (NORC) (December 1981), and *First Follow-up (1982) Sample Design Report* by R. Tourangeau, H. McWilliams, C. Jones, M. Frankel, and F. O'Brien, NORC (in preparation).

The nonresponse bias for an estimated mean (or proportion) is a product of the nonresponse rate and the magnitude of the difference in the means (or proportions) between respondents and nonrespondents. The results of three types of analysis of the effects of nonresponse are examined in a report in preparation.[1] The first analysis employs first follow-up survey School Questionnaire data, which were obtained from over 400 of the 430 eligible nonparticipating schools, to estimate school nonresponse bias. For most variables, the differences between the means for all eligible schools and cooperating schools were found to be less than 1 percent.

The second analysis employed first follow-up survey student data to examine base-year survey student nonresponse bias. The analysis found that the magnitudes of biases generally were small and in predictable directions. The median value of the bias estimates was less than 0.4 percentage points.

The third analysis examined first follow-up survey nonresponse patterns. Since the first follow-up survey nonresponse rate was less than one-half that for the initial survey (6 vs. 15 percent), nonresponse biases should be correspondingly lower, averaging no more than 0.2 percentage points.

While item nonresponse bias has not been studied explicitly, it should not present a problem for most analyses. Item response rates generally were very high. Special steps were taken to obtain the information for the more important ("critical") questions. The steps were very successful so that, for example, response rates of over 99 percent were achieved for October 1981 activity state (chapter II) and February 1982 marital status (chapter VI). Even for noncritical items the response rates were quite good; for example, 91 percent for college field of study and 94 percent for whether a loan to finance schooling ever had been obtained (chapter III); 95 percent for starting salary in first job (chapter IV); and 95 percent for self-esteem, locus of control, and life goal items (chapter VII).

Reliability and validity of data. HS&B provides a rare opportunity to examine the validity and reliability of student responses to questionnaire items. The opportunity arises from three unusual aspects of the study. First, data were collected from a subsample of about 6,500 parents. These data allow assessment of the validity of student responses to many of the questionnaire items that dealt with home and family background matters. Second, HS&B included about 500 sets of twins. Comparison of the answers of twins permits evaluation of the reliability of questionnaire responses dealing with commonly shared factual information. Third, high school transcripts collected in fall 1982 for about 16,000 sophomore cohort participants permit the assessment of the accuracy of student reports of high school grades and course work.

Analysis of twin data yielded results consistent with those found by other researchers regarding similar kinds of information obtained in a similar manner from high school students and young adults. The reliability and validity of response vary considerably depending on the nature of the item and the characteristics of the respondent. Contemporaneous, objective, and factually oriented items are more reliable and valid than subjective, temporarily remote, and ambiguous items; and older, white, and high-achieving students provide more reliable and valid responses than do younger, minority group, and low-achieving students. The results of this analysis will be presented in an NCES report now being prepared. The results of an NLS-72 second follow-up survey test-retest reliability study and a review of the literature on the quality of responses to NLS-72 (and HS&B) type questions, may be found in *Reliability and Validity of National Longitudinal Study Measures* by A. Conger, J. Conger, and J. Riccobono, 1976, a report prepared for NCES by the Research Triangle Institute.

In the future, if present plans succeed, much more accurate information about student financial aid and postsecondary education matters will be available from data obtained from official Federal grant and loan files, institution student financial aid office files, and from student transcripts.

Sampling error. All statistics presented in this report are weighted estimates of population parameters. The estimates are based on a probability sample of about 12,000 individuals selected from a population of about 3 million. Thus, in addition to nonresponse and other sources of nonsampling error, the estimates are subject to sampling error as well.

The standard error of an estimate reflects the degree of uncertainty in the estimate which is primarily due to sampling variation. Like most national samples, the HS&B sample, as described earlier, departs from a simple random sample in three respects: it is stratified, the selections of students were clustered by school, and certain kinds of schools and students deliberately were oversampled.

Each of these departures from simple random sampling has a predictable impact on the standard errors of sample estimates. The "root design effect" (deft) reflects the net impact of these departures on standard errors. The actual standard error is the product of deft times the corresponding estimate from a simple random sample. The average deft value for both the base-year and first follow-up surveys is 1.6 for estimates pertaining to the full population and generally somewhat less for subgroups. The average deft value for estimates of change between 1980 and 1982 is 1.4 for the total population, and less for most subgroups.

[1] *First Follow-Up (1982) Sample Design Report*, by R. Tourangeau, H. McWilliams, C. Jones, M. Frankel, and F.O., Brien, NORC.

The standard errors of many of the estimated percentages presented in this report may be approximated, generally conservatively, by

$$\text{s.e. } (p) = 1.6\ p(100\text{-}p)/n^{1/2},$$

where n is the sample size (table B-1). For example, it is estimated in table B-1 that 30 percent of males attended 4-year colleges in October 1980. The standard error of this estimate is approximately

$$1.6\ 30(100 - 30)/5675^{1/2} = 1.0 \text{ percentage point.}$$

NCES, however, has calculated more precise estimates of standard errors than those approximated by the above procedure. These estimates, obtained by a procedure called "balanced repeated replication," are available from NCES upon request for every estimate presented in report tables.

In comparing estimated means (or percentages) for two subgroups, the standard error of the difference was estimated by taking the square root of the sum of the two squared standard errors. These estimates of standard errors of differences are somewhat conservative for subgroups involving different students from the same schools since they assume that the covariance of the two estimates is 0. Actually, the positive correlation between cluster (school) influences on the two means (or proportions) tends to reduce the standard error of the difference.

All differences cited in the text of the report differ from 0 by at least two estimated standard errors.

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