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ABSTRACT

This study uses data from the 1988 National Education Longitudinal Study and its 1994 followup to examine the educational and employment attainment of 1988 eighth graders who dropped out of high school. About half of them ultimately completed high school. By 1994, 16% had completed a high school diploma, 29% had completed a General Educational Development (GED) or equivalency certificate, and 24% were working on a diploma or GED. The remaining one-third of dropouts had no credential and were not pursuing any further education. High school completion among dropouts was associated with socioeconomic status. Dropouts who had demonstrated academic ability, although not necessarily academic performance, were most likely to complete high school. By 1994, 2 years after most of the "cohort" had completed high school, high school completion among dropouts was associated with some educational, but few employment, characteristics. In 1994, most dropouts were either working, looking for work, or at home. About the same proportion of dropouts as 1988 eighth graders who had never dropped out reported working full time or part time in 1994, but those who had never dropped out were more likely to be taking academic courses. More than half of those who had never dropped out were enrolled in 2-year or 4-year postsecondary institutions. About one in four dropouts had enrolled in a postsecondary institution by 1994. One appendix is a glossary, and the other contains technical notes and remarks on methodology. (Contains 19 tables, 7 figures, and 12 references.) (SLD)

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HIGHLIGHTS

This study examines the educational and employment attainment of 1988 eighth graders who dropped out of high school, based on data from the 1988 National Education Longitudinal Study (NELS:88/94). The following are key findings about their subsequent education and employment experiences:

About half of dropouts completed high school.

- By 1994, among 1988 eighth graders who dropped out, 16 percent had completed a high school diploma, 29 percent had completed a General Educational Development (GED) or equivalency certificate, and 24 percent were working on a diploma or GED. The remaining one-third of dropouts (32 percent) had no credential and were not pursuing any further education (figure 1).

Completion status for dropouts was associated with a number of student and academic characteristics, such as socioeconomic status, test scores, and grades earned before dropping out.

High school completion among dropouts was associated with socioeconomic status.

- Socioeconomic status (SES) was strongly associated with the proportion of dropouts who completed high school. Dropouts from families in higher SES quartiles were more likely to complete high school than others. For example, almost three-quarters (74 percent) of dropouts whose families were in the highest SES quartile finished high school, compared with 33 percent of dropouts whose families were in the lowest SES quartile (table 1).

Dropouts who demonstrated academic ability, but not necessarily academic performance, were most likely to complete high school.

- Among dropouts, higher 1988 test scores were associated with the likelihood of having completed high school by 1994. For example, three out of four dropouts (76 percent) who scored in the highest test quartile completed high school, compared with 30 percent of those who scored in the lowest test quartile (table 1).
- Although both test scores and grades were associated with dropouts who completed a diploma, test scores, but not grades, were associated with those who completed a GED. For example, 51 percent of dropouts scoring in the highest test quartile completed a

GED, compared with 18 percent of those scoring in the lowest test quartile. However, similar proportions of those who passed the GED had grade averages in the A to B, C, or the D or F range: about 24 percent of dropouts had A or B averages, 27 percent had C averages, and 27 percent had D or F averages (table 1).

By 1994, two years after most of the cohort completed high school, high school completion among dropouts was associated with some educational, but few employment, characteristics.[1]

In 1994, most dropouts were either working, looking for work, or at home.

- About the same proportion of dropouts as 1988 eighth graders who had never dropped out reported working full time or part time in 1994 (60 and 63 percent, respectively; table 9a). Working, however, was the only activity in which both these groups partook in 1994. Those who never dropped out were much more likely to be taking academic courses. More than half (57 percent) of those who had never dropped out were enrolled in 2- or 4-year postsecondary institutions in 1994, compared with 8 percent of dropouts who were similarly enrolled. Dropouts, by comparison, were much more likely than those who had never dropped out to report keeping house or being full-time homemakers (18 compared with 5 percent). In addition, dropouts were also more likely to be looking for work (16 percent) than their counterparts who had not dropped out (6 percent; table 9a).

One-quarter of dropouts enrolled in postsecondary education.

- About one in four dropouts (26 percent) had enrolled in a postsecondary institution by 1994. About 11 percent of dropouts had enrolled in a 2- or 4-year degree program; 11 percent had enrolled in a certificate program; and the remaining 4 percent had enrolled in other postsecondary programs (figure 7a).
- Among dropouts, those who completed high school by either a diploma or GED were much more likely than those who had not completed high school to obtain postsecondary education (42 percent of completers versus 14 percent of noncompleters reported having some postsecondary education; table 15).

[1]This may be a result of the small sample size of dropouts. When available, differences among dropouts by completion status were noted, if not available, differences were noted between dropouts on the aggregate compared with those who had never dropped out.

FOREWORD

This report is part of the Postsecondary Education Descriptive Analysis Reports (PEDAR) series. The PEDAR series consists of reports that focus on postsecondary education policy issues, taking advantage of a variety of education data sources, especially recently completed data collections. Other reports in the series include *How Low Income Undergraduates Financed Postsecondary Education: 1992–93* (NCES 96-161); *Nontraditional Undergraduates: Trends in Enrollment from 1986 to 1992 and Persistence and Attainment Among 1989–90 Beginning Postsecondary Students* (NCES 97-578); *Transfer Behavior Among Beginning Postsecondary Students: 1989–94* (NCES 97-266); and *Early Labor Force Experiences and Debt Burden* (NCES 97-286).

This report examines the high school education attainment of members of a 1988 eighth-grade cohort who had previously dropped out of high school. Using such factors as circumstances contributing to the first dropout event and reasons cited for dropping out, the report profiles dropouts who returned to complete their high school education, either in the form of a diploma or an alternative credential. The report then looks at reports of postsecondary enrollment and employment outcomes provided by these youth in 1994, two years after most of the cohort had graduated from high school, in order to evaluate how completing high school affected dropouts' subsequent employment opportunities or postsecondary educational attainment.

The data used for this analysis were drawn from the National Education Longitudinal Study of 1988 (NELS:88/94), a survey that began with eighth graders in 1988 and followed them every two years through 1994.

The estimates presented in this report were produced using the NELS:88/94 Data Analysis System (DAS), a microcomputer and World Wide Web application that allows users to specify and generate their own tables from the NELS:88/94 data. The DAS produces design-adjusted standard errors necessary for testing the statistical significance of differences shown in the tables. Additional information about the DAS, and how it may be obtained, is included in appendix B of this report.

We hope that the information provided in this report will be useful to a wide range of interested readers and that the results reported here will encourage others to use the NELS:88/94 data.

ACKNOWLEDGMENTS

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INTRODUCTION

In each of the past 10 years, about five students out of 100 have decided to drop out of high school.[2] Since anecdotal and empirical evidence indicates that these youth will have a harder time advancing in their educations and careers, they have often been the subject of inquiry for both intervention and prevention purposes.

Students have different reasons for dropping out. Some simply dislike school; some cannot get along with their teachers; or some perceive school as a waste of their time. Others begin working full time, either by choice or by necessity, and cannot maintain their schedules as students. For young women, pregnancy, childbirth, and subsequent childcare responsibilities may interfere with school, while young men who become fathers may have childcare duties or be required to work to support the family.

Once students stop attending high school, however, their formal education has not necessarily ended. They may choose to reenroll, sometimes after a hiatus of several years, and eventually earn a high school diploma, enroll in an alternative school, or work toward a General Educational Development (GED) certificate. Some students drop back in and out of high school before they either earn a credential or give up altogether.

Although the obstacles that originally prevented dropouts from completing high school may continue to deter their educational progress, some dropouts do earn a high school credential and continue their education. Why do some dropouts leave school and never go back, while others return to earn a diploma and even enroll in postsecondary programs? What characteristics distinguish a dropout who later graduates from one who receives an alternative credential? Does a dropout who completes high school have better opportunities for postsecondary education or employment in the work force? This report addresses these questions by first looking at students' circumstances at the time they first dropped out, and then by examining their employment and educational situations two years after most of the cohort had graduated from high school.

Using the 1988 National Education Longitudinal Study (NELS:88/94), a survey of 1988 eighth graders, this report examines the secondary educational attainment of high school

[2]M. McMillen and P. Kaufman, U.S. Department of Education, National Center for Education Statistics, *Dropout Rates in the United States: 1995* (Washington, DC: 1997), p. 85.

dropouts. It assesses the circumstances under which the dropouts first left school, along with their reasons for dropping out; the extent to which they participated in intervention programs (such as individual or family counseling); the number of people they talked to about their decision to leave school; and how close they were to high school graduation before they dropped out.

The report then examines the postsecondary enrollment and employment status of the dropouts in 1994, two years after most of the cohort had graduated from high school. In order to evaluate how staying out or returning to high school affected their employment opportunities or continued education, comparisons are drawn primarily between 1988 eighth graders who completed high school without dropping out, dropouts who completed a diploma or equivalency certificate, and dropouts who had not completed high school.

Some studies, such as McMillen and Kaufman (1996), have evaluated the differing postsecondary and employment experiences of those with and without a high school diploma.[3] They concluded that dropouts who graduated from high school faced serious impediments in other stages of adulthood. For example, they reported that dropouts enrolled in postsecondary education in smaller numbers and exhibited higher rates of unemployment. By isolating dropouts for analysis, this report builds on this earlier research.

Although a sizable body of literature compares the employment and educational outcomes of regular diploma recipients with those who obtained a high school equivalent,[4] fewer studies have focused on comparing groups of dropouts with each other. When they have done so, however, conclusions have at times been conflicting. For example, while some studies evaluating the economic returns to earning a GED suggest that recipients of an equivalency certificate fare better in the labor market than those with no credential, other researchers have found GED recipients to be indistinguishable from high school graduates and dropouts. Using 1979 through 1987 data from the National Longitudinal Survey of Youth (NLSY), Cameron and Heckman (1993) concluded that young men with GEDs earned the same average hourly wages and worked the same number of hours as those with no credential.[5] Building on this research, Cao et al. (1996) examined the labor market experience of low-income women in the NLSY and Washington State Family Income Study (FIS). Overall, their analyses of these data sets produced similar results,

[3]M. McMillen and P. Kaufman, U.S. Department of Education, National Center for Education Statistics, *Dropout Rates in the United States: 1994* (Washington, DC: 1996).

[4]For a review of this literature, see M. Johnson and T. Valentine, "Outcomes of GED Graduation: An Annotated Bibliography of Research Reports" (unpublished report prepared by the College of Education, Athens, Georgia, December 1992).

[5]S. Cameron and J. Heckman, "The Nonequivalence Of High School Equivalents," *Journal of Labor Economics* 11 (1) (1993): 1–41.

finding it "impossible to distinguish among high school graduates, GED recipients, and dropouts in terms of hours of work."[6] Their analyses of the FIS data indicated that high school graduates, GED recipients, and dropouts all earned similar wages. On the other hand, Cao et al. (1996), using the NLSY data, found that high school graduates earned more than GED recipients, who in turn earned more than dropouts with no credential. In addition, Murnane, Willett, and Boudett (1995), using the NLSY data through 1991, found that earning a GED, as opposed to having no credential, had positive effects on the rate of wage growth for young men.[7]

Although the NELS:88/94 survey does not contain data about the academic performance of dropouts enrolled in a postsecondary institution, other researchers have found some evidence that GED recipients are less successful in postsecondary education than regular high school graduates. One such study conducted at a community college in Ohio found that students with a high school diploma had higher GPAs and attempted and completed more credit hours than did students with GEDs.[8] However, this study compared a group of students with regular diplomas (who probably had not dropped out) with GED recipients (who most likely had dropped out). It is unclear whether similar results would have been found among groups of dropouts with different high school credentials.

[6]J. Cao, E.W. Stromsdorfer, and G. Weeks, "The Human Capital Effect of General Education Development Certificates on Low Income Women," *The Journal of Human Resources* 31 (1) (Winter 1996): 215.

[7]R.J. Murnane, J.B. Willett, and K.P. Boudett, "Do High School Dropouts Benefit From Obtaining a GED?" *Educational Evaluation and Policy Analysis* 17 (2) (Summer 1995): 133–147.

[8]P.A. Schillo, "A Comparison of the Academic Success of GED Certificate Students and High School Graduates at Lorain County Community College" (Bowling Green State University, June 1990).

DEFINITIONS AND DATA

The National Education Longitudinal Study of 1988 (NELS:88/94) surveyed a cohort of eighth graders in 1988 and subsequently followed them at two-year intervals through 1994. Base-year respondents who were not enrolled in school in 1990 or 1992 completed special dropout questionnaires. For the purposes of this report, students were considered dropouts if by 1992 1) they ever reported dropping out of high school; 2) they ever reported passing the GED exam; 3) their high school transcripts showed that they had dropped out or passed the GED exam; or 4) if in the 1994 survey, they reported that they were working on an alternative credential or they reported that they had not graduated and were not working on an alternative credential. Members of the 1988 eighth-grade cohort were classified as dropouts after they had dropped out for the first time, regardless of whether they eventually completed a credential. Educational outcomes were taken into account, however. This analysis compares dropouts who completed high school (completers) with those who did not (noncompleters). It further distinguishes among dropouts who either earned a high school diploma or an alternative credential, those who were still working to complete high school, and stayouts (i.e., dropouts who had not earned a high school diploma or equivalency certificate and were not working toward one).[9]

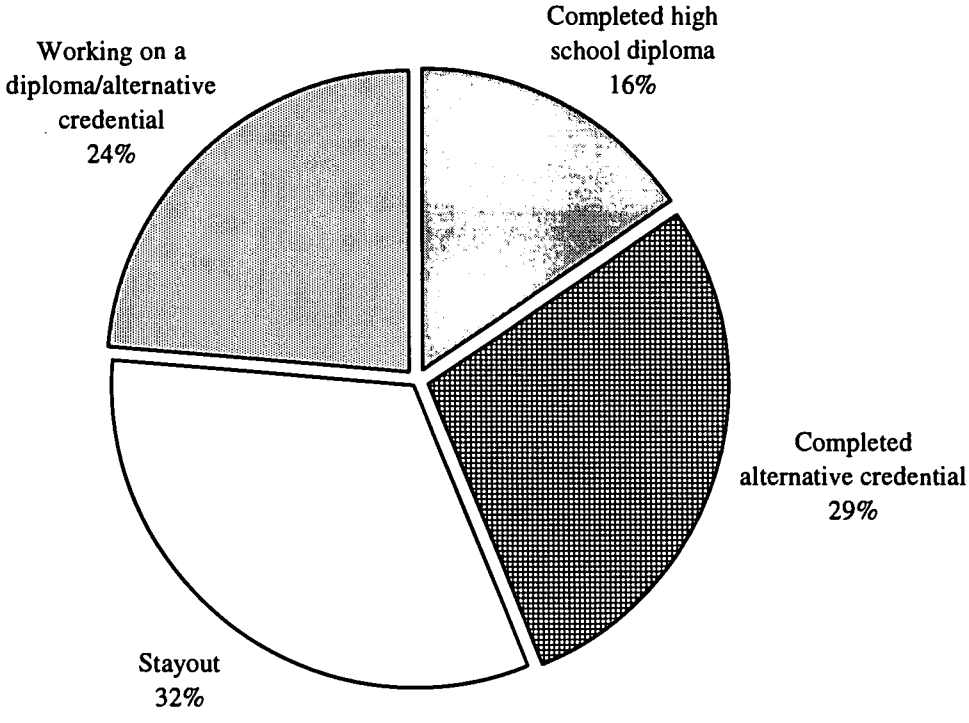
Due to its longitudinal nature, the NELS:88/94 survey is useful for studying the educational and occupational achievements of dropouts, as researchers can monitor dropouts' movements in and out of school as they work toward a diploma or alternative credential or track their progress in the work force. Since the analysis is longitudinal by design, only students who participated in all four waves of data collection are included.

One limitation of the NELS:88/94 data is its time frame, which provides a six-year horizon beginning in eighth grade (1988–1994), potentially too short a time after "normal" graduation to provide a complete picture of dropouts' educational activities or to demonstrate the full implications of their educational choices in the labor market. This report may underestimate the proportion of dropouts who will eventually earn a credential and, in particular, the percentage of dropouts who will earn a GED. The average age of GED test-takers is 25 years old, even though

[9]In previously published reports, "stayout" has referred to dropouts who never returned to high school. Because the NELS:88/94 data captures only a point in time for these youth, it is possible that they had previously returned to high school and were not attending at the time of the survey, or that they might return in the future. Furthermore, the definition of "dropping out" used in this report differs from the definition used in other NCES publications.

the typical high school graduate is 17 or 18 years old.[10] In 1994, 24 percent of the NELS:88/94 cohort members who had ever dropped out reported that they were working toward a GED or were still in high school (figure 1). However, there is some evidence that the number of dropouts

Figure 1—Of 1988 eighth graders who dropped out of high school at least once, percentage distribution according to 1994 completion status



NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

who return to school tapers off as they age. Kolstad and Kaufman (1989), in analyzing the educational paths of dropouts in the 1982 High School and Beyond (HS&B) study, found that 38 percent of the dropouts had earned a diploma or GED by 1984, two years after most members of their cohort had graduated. The total had risen to 44 percent by 1986, suggesting that the majority

[10]American Council on Education, *Who Took the GED? GED 1995 Statistical Report*, ed. J. Baldwin (Washington, D.C. 1996), table 3.

of those who would ever earn a credential had done so within the first two years of the majority of cohort members' graduation.[11] The NELS:88/94 survey data were most recently collected in 1994, two years after most of the 1988 eighth-grade cohort had graduated from high school. Kolstad and Kaufman's results suggest that analyzing the attainment of dropouts at this juncture in their lives will capture the majority, but not all, of dropouts who will ever return to school.

Another implication of the lack of suitable time frame pertains to long-term economic outcomes. Building on the literature on human capital investments, King (1978), in his study of the labor market outcomes of high school dropouts using the National Longitudinal Survey, found no differences between dropouts and nondropouts after one year in the work force. However, he did find that "age earning profiles of the graduates were steeper than those of the dropouts."[12] After analyzing the data from these respondents after having been in the workforce for 13 years, he concluded: "While the differences between graduates and dropouts were generally not pronounced immediately upon leaving school, they became significant over the ensuing 13-year period—at least as measured in 1971."[13] The longitudinal scope of the NELS:88/94 data is, unfortunately, less than 2 years after high school, so the question then becomes: does high school attainment among dropouts associated with any evident employment or education trends in these first years after high school?

[11] A. Kolstad and P. Kaufman, "Dropouts Who Complete High School With a Diploma or GED" (paper presented at the annual meeting of the American Educational Research Association, San Francisco, March 27, 1989).

[12] R.H. King, "The Labor Market Consequences of Dropping Out of High School" (Center for Human Resource Research, Ohio State University, 1978), p. 89.

[13] Ibid.

DROPOUT CHARACTERISTICS AND HIGH SCHOOL EXPERIENCES

The first wave of the NELS:88/94 survey began in 1988, initially sampling eighth graders. Subsequent follow-ups indicated that about one in five of this 1988 eighth-grade cohort (21 percent) dropped out of high school at least once between 1988 and 1994.[14] Figure 1, which indicates the high school education status of dropouts after the Third Follow-up in 1994, shows that a sizable proportion of these dropouts had continued their high school education. For instance, by 1994, just under half (44 percent) of 1988 eighth graders who dropped out had completed high school (either a diploma or an alternative credential), and 24 percent were working on a diploma or GED (table 1). The remaining one-third of dropouts (32 percent) had no credential and were not pursuing any further education (figure 1).

DROPOUT CHARACTERISTICS

In previous reports such as *Dropout Rates in the United States: 1995*, students from low income families were found to be more likely to drop out than students from high income families. Among 16–24 year olds who were from families in the bottom 20 percent of all family incomes, the status dropout rate was 23.2 percent, compared with the 2.9 percent status dropout rate of those from families in the top 20 percent.[15]

The racial–ethnic backgrounds of students also seemed to be associated with dropping out, although this may be associated with variations in income level. Hispanic students, in particular, for whom English may not be their first language, have higher dropout rates than black or white students. In 1995, 30 percent of Hispanics between the ages of 16 and 24 were dropouts, compared with 12 percent of black youth and 9 percent of white youth.[16] Some of this difference, however, can be accounted for by immigrants not enrolled in U.S. schools: "a third of the 30 percent dropout rate registered for all Hispanic youths is associated with the large proportion of

[14]U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System. This represents 622,000 dropout youth, drawn from approximately 2,800 survey respondents.

[15]M. McMillen and P. Kaufman, U.S. Department of Education, National Center for Education Statistics, *Dropout Rates in the United States: 1995* (Washington, DC: 1997), p. 14.

[16]Ibid. p. 13.

Table 1—Of 1988 eighth graders who dropped out, percentage distribution according to 1994 high school completion status, by selected student characteristics

	Completed			Did not complete		
	Total	High school diploma	GED or certificate*	Total	Working toward diploma or GED	Stayout
Total	44.0	15.5	28.5	56.0	23.7	32.3
Gender						
Male	44.6	12.9	31.7	55.4	22.8	32.6
Female	43.3	18.2	25.1	56.7	24.7	32.0
Race–ethnicity						
Asian/Pacific Islander	32.5	20.5	12.0	67.5	28.0	39.5
Hispanic	38.8	15.3	23.5	61.3	21.2	40.1
Black, non-Hispanic	41.5	15.7	25.8	58.5	29.4	29.1
White, non-Hispanic	46.5	15.2	31.3	53.6	22.7	30.9
American Indian/Alaskan Native	43.0	18.0	25.0	57.0	14.0	43.1
Socioeconomic status 1988						
Low quartile	33.0	12.6	20.4	67.0	24.9	42.1
Middle quartiles	49.6	17.4	32.2	50.4	23.8	26.6
High quartile	73.9	21.0	52.9	26.1	16.4	9.7
Composite test quartile 1988						
Low quartile	29.5	11.6	17.9	70.5	28.5	42.0
Middle quartiles	54.6	19.5	35.2	45.4	18.8	26.6
High quartile	75.8	25.0	50.8	24.2	17.7	6.6
Grade point average (high school transcripts)						
A or B average	50.4	26.1	24.3	49.6	14.2	35.4
C average	49.0	22.5	26.5	51.0	23.8	27.2
D or F average	35.5	9.0	26.6	64.5	24.4	40.1
Student's educational expectations 1988						
High school or less	33.2	10.1	23.1	66.8	21.5	45.2
Some postsecondary education	40.8	14.2	26.6	59.2	27.2	32.0
Bachelor's degree or higher	53.8	20.0	33.8	46.2	22.4	23.8
Parents' educational expectations 1988						
High school or less	34.2	9.5	24.8	65.8	22.9	42.9
Some postsecondary education	43.0	14.8	28.2	57.0	25.9	31.1
Bachelor's degree or higher	53.1	20.8	32.3	46.9	22.6	24.3

*GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

young Hispanic immigrants who come to this country without a high school education and are not subsequently enrolled in U.S. schools."[17] Proficiency with the English language posed an added barrier to Hispanic students. Of 16–24 year olds who enrolled in U.S. schools and spoke Spanish at home in 1995, 33 percent who reported speaking English not well did not complete high school, compared with 19 percent who reported speaking English well.[18]

Dropout Characteristics in the NELS:88/94 Data

In the NELS:88/94 data, socioeconomic status (SES) was strongly associated with the proportion of dropouts who completed high school. Dropouts from families in higher SES quartiles were increasingly likely to complete high school. For example, almost three-quarters (74 percent) of dropouts whose families were in the highest SES quartile finished high school, compared with 33 percent of dropouts whose families were in the lowest SES quartile (table 1).

Dropouts' racial–ethnic background was not associated with their likelihood of completing high school. Although the proportions of dropouts completing some form of high school appeared to differ by race–ethnicity, there was not enough statistical evidence to conclude that these differences were significant (table 1). Similarly, when dropouts completing high school were examined according to their method of completion, no significant differences were found in the proportions of those completing high school diplomas with respect to racial–ethnic background. Asian/Pacific Islanders were less likely than white, non-Hispanic dropouts, however, to earn a GED (12 percent versus 31 percent) (table 1).[19]

Gender appeared to be associated with high school graduation among dropouts. For example, young women who dropped out were more likely than their male counterparts to return to school and earn a high school diploma (18 percent versus 13 percent) (table 1).[20]

Academics

Dropouts who had high school grades at a C average or higher and eighth grade test scores in the top three quartiles were more likely to return to school and complete a diploma or GED than those who had not performed as well. Among dropouts, higher 1988 test scores were

[17]Ibid. p. 31.

[18]Ibid. p. 35.

[19]While there also appear to be differences between Asian/Pacific Islanders and the other three groups in the proportion of dropouts who earned a GED, these differences are associated with large standard errors, making the estimates somewhat unreliable. Thus, the differences are not statistically significant.

[20]There was some evidence that men were more likely than women to obtain a GED (32 percent versus 25 percent). This difference was significant at the 0.10 level, but not at the conventional 0.05 level.

associated with the likelihood of having completed high school by 1994. For example, three out of four dropouts (76 percent) who scored in the highest test quartile completed high school, compared with 30 percent of dropouts scoring in the lowest test quartile (table 1). Similarly, dropouts' high school grades were also associated with their completing high school. About 49 percent of dropouts whose high school transcripts indicated that they had a C average completed a diploma or alternative credential, compared with 36 percent who had a D or F average (table 1).[21]

The association between dropouts' test scores and their likelihood of staying out was especially apparent. Among dropouts who scored in the highest quartile, 7 percent stayed out, compared with 42 percent among those who scored in the lowest quartile. Grades were similarly related. Dropouts who had a D or F average when enrolled in school were more likely to stay out than those who had a C average in high school (40 percent versus 27 percent; table 1).[22]

Among dropouts who completed high school, both grades and test scores were associated with completing a diploma. Dropouts who had a C average or higher in high school were more likely than those who had a D or F average to eventually attain a diploma (23 to 26 percent of A–C students did so, compared with 9 percent of D and F students). Similarly, dropouts who had scored in the highest test quartile were more likely to complete a diploma than those who had scored in the lowest quartile (25 percent versus 12 percent; table 1).

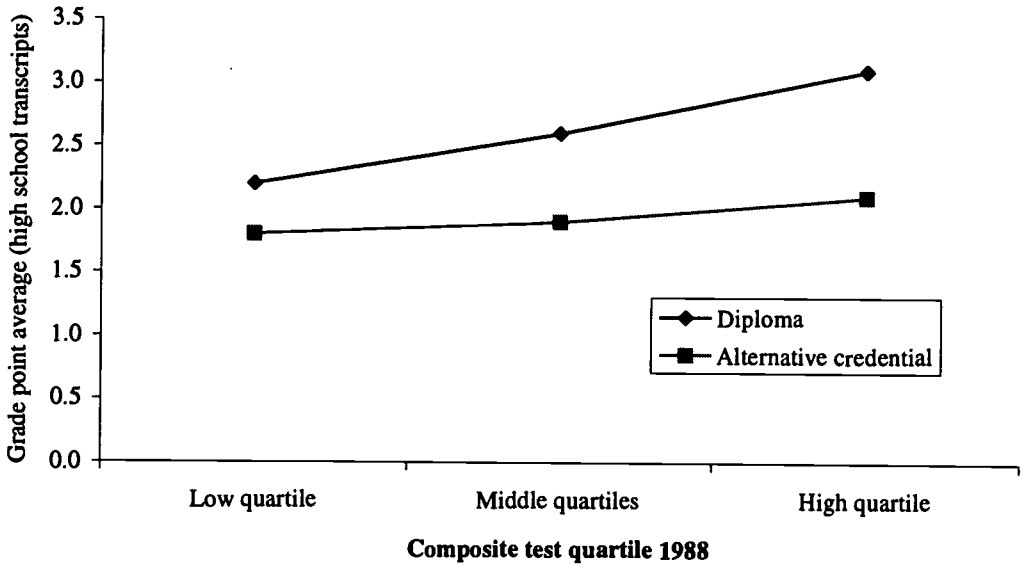
Although test scores were associated with dropouts completing a GED, grades were not. Dropouts' likelihood of completing a GED increased with their test scores. For example, 51 percent of former students scoring in the highest test quartile completed a GED, compared with 18 percent of former students scoring in the lowest test quartile. However, similar proportions of those who passed the GED had grade averages in the A to B range, C, or the D or F range: about 24 percent of dropouts with A or B averages, 27 percent with C averages, and 27 percent with D or F averages earned an alternative credential (table 1).

Although dropouts who complete a GED may have academic ability (as indicated on their composite test scores), they did not necessarily perform as well in school as dropouts who returned to high school and earned a diploma (as indicated by their grades). Figure 2 shows the relationship between the students' overall grade point average in high school and their composite test scores in the eighth grade.

[21] Although there also appear to be large differences between dropouts with D and F averages and those with A and B averages, these differences are associated with large standard errors, making the differences not statistically significant.

[22] Because of small sample size, a very large standard error was associated with dropouts who had A or B averages and stayed out. As a result, any comparisons made with this group were statistically insignificant.

Figure 2—Of 1988 eighth graders who dropped out and later completed high school, 1994 cumulative grade point average, by 1988 composite test scores*



NOTE: 1988 composite test quartiles were based on the full sample of 1988 eighth graders who dropped out and later completed high school.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

In general, dropout completers who had higher test scores in the eighth grade tended to have higher grade point averages in high school and dropouts who returned and received a high school diploma had higher grades in high school. However, the relationship between grades and test scores was different for dropouts with diplomas versus dropouts with GEDs. While high-testing dropouts with diplomas had correspondingly higher grades in high school, dropouts with GEDs had about the same grade point averages regardless of how well they had scored on the achievement test in the eighth grade. That is, higher achievement in eighth grade did not translate into high grades for dropouts with GEDs as it did for dropouts with diplomas (table 2).[23]

[23]This discussion is based on an Analysis of Variance derived from the DAS (see appendix B).

Table 2—Among 1988 eighth graders who dropped out and later completed high school, 1994 cumulative grade point average, by 1988 composite test scores

	Received a high school diploma	Received a GED or certificate*
Total	2.70	1.91
Composite test quartile 1988		
Low quartile	2.21	1.75
Middle quartiles	2.59	1.93
High quartile	3.14	2.15

*GED refers to General Education Development exam.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Expectations

The educational expectations of both dropouts and their parents were associated with dropouts' actual academic outcomes six years later and were somewhat related to dropouts' high school completion. Among dropouts who in 1988 expected to earn a bachelor's degree or higher, about half (54 percent) had completed high school in 1994. Dropouts with lower educational expectations in 1988, however, were less likely to finish high school. One-third of those who expected to complete no more than a high school diploma completed high school, and 40 percent of those expecting to complete some postsecondary education completed high school. Similarly, dropouts whose parents in 1988 had expected them to earn a bachelor's degree or higher were also more likely to complete high school than dropouts whose parents had expected them to complete no more than a high school diploma (53 percent versus 34 percent; table 1).

Among dropouts who completed high school, however, the educational expectations of parents and students in 1988 were associated only with a dropout's likelihood of completing a diploma, not with completing a GED. About 20 percent of dropouts who expected to earn a bachelor's degree or higher earned a diploma, compared with 10 percent of dropouts who expected to complete high school or less. Parent expectations also corresponded with higher proportions of dropouts earning diplomas. About 21 percent of dropouts whose parents expected them to earn a bachelor's degree or higher received diplomas, compared with 10 percent of dropouts whose parents expected them to at most complete high school. Although the expectations of parents and students also appeared to be associated with the likelihood of dropouts getting a GED, there was not enough statistical evidence to conclude that these differences were significant (table 1).

CIRCUMSTANCES OF LEAVING SCHOOL

Comparing the circumstances under which students decide to leave school with their later educational outcomes can help determine who is most at risk of permanently disconnecting from the educational system. The dropouts at greatest risk of not completing high school left school at a very young age, had job-related reasons for leaving school, and did not connect with institutional sources of support (such as their high school administration or an alternative school). Another factor associated with never completing is becoming a parent more than nine months after dropping out.

The year that dropouts first left high school was associated with how they subsequently completed high school. Of dropouts who returned to finish high school, those who first left school in 9th grade were more likely than those who first dropped out in 11th or 12th grades to complete a GED (85 percent in 9th grade versus 62 to 69 percent in 11th and 12th grades), whereas students who first dropped out in 11th or 12th grades were more likely than 9th graders to earn a diploma (38 and 31 percent versus 15 percent; figure 3).

This association between when dropouts left school and their 1994 completion status is further demonstrated with respect to the number of credits earned: students with more than 15 credits when they first dropped out were much more likely to complete diplomas than were students with 10 or fewer credits (24 percent versus 11 to 12 percent; table 3).[24]

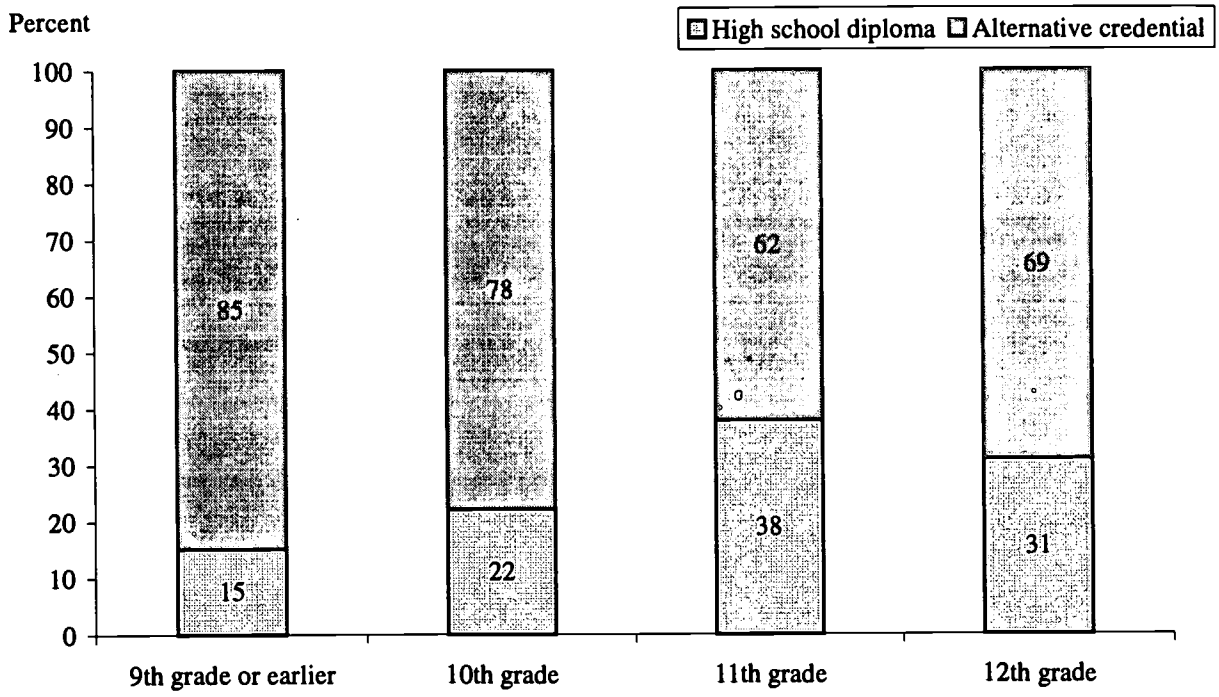
Reasons for Leaving

In 1990 and 1992, dropouts who were not in school at the time of the follow-up surveys provided their reasons for dropping out and answered a series of questions about intervention activities and the people with whom they had discussed their decision to leave school.[25] When reasons for dropping out were aggregated into three general categories—school-, family-, or job-related—dropouts were more than twice as likely to give school-related reasons as family- or job-related reasons (77 percent versus 34 and 32 percent, respectively; table 4). This is consistent with the data concerning their academic records, where 92 percent of all dropouts had grade

[24]There is some evidence that students with 10.01–15 credits were also less likely to earn a diploma than those with more than 15 credits. This distinction was significant at the 0.10 level, not at the conventional 0.05 level.

[25]Questions on reasons for dropping out and intervention activities were asked in both the 1990 and 1992 supplementary questionnaires. Responses from the 1992 questionnaire were included only if the 1990 information was missing. The data on discussions with various people about leaving school were taken solely from the 1992 dropout supplement. See appendix A for a complete description of these variables.

Figure 3—Of 1988 eighth graders who dropped out and later completed high school, percentage distribution according to grade at time of first dropout event, by whether they earned a diploma or a GED by 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

averages of C's or lower (table 2). Dropouts who had not completed high school by 1994, however, cited employment reasons for having left more frequently than did dropouts who had completed high school. About 37 percent of dropouts who had not completed a credential cited at least one job reason for having left high school in 1990 or 1992, compared with 24 percent of dropouts who completed a diploma or GED (table 4).

The specific reasons that dropouts reported for leaving high school are shown in table 5. Noncompleters were more likely to cite having gotten a job as a reason for dropping out (31 versus 22 percent). Completers were about as likely as noncompleters, however, to cite such reasons

Table 3—Of 1988 eighth graders who dropped out, percentage distribution according to their 1994 high school completion status, by number of credits earned at time of first dropout event

	Completed			Did not complete		
	Total	High school diploma	GED or certificate*	Total	Working toward diploma or GED	Stayout
Total	44.0	15.5	28.5	56.0	23.7	32.3
Number of credits earned when first dropped out						
5 or less	41.6	11.1	30.5	58.4	23.0	35.4
5.01 to 10	37.9	12.2	25.7	62.1	22.5	39.7
10.01 to 15	39.0	12.1	26.9	61.0	26.2	34.9
More than 15	55.0	24.1	30.8	45.0	20.4	24.6

*GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Table 4—Of 1988 eighth graders who dropped out, percentage who gave various reasons for dropping out, by 1994 completion status[1]

	Any family reason	Any job reason	Any school reason
Total	34.0	32.3	77.1
Completed high school	33.8	24.2	76.3
High school diploma	30.2	21.2	73.1
GED or certificate[2]	35.2	25.4	77.6
Did not complete high school	34.2	36.9	77.8
Working toward diploma or GED	31.4	37.3	80.0
Stayout	36.2	36.6	76.2

[1]Dropouts could cite multiple reasons for leaving high school. Thus, percentages sum to more than 100.

[2]GED refers to General Education Development exam.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

or dropping out as not liking school (44 and 47 percent), not getting along with teachers (32 and 27 percent), not keeping up with school work (29 and 33 percent), or pregnancy (24 and 21 percent; table 5).

Table 5—Of 1988 eighth graders who dropped out, percentage who gave various reasons for dropping out, by 1994 completion status[1]

		Completed			Did not complete		
	Total all dropouts	Total	High school diploma	GED or certificate[2]	Total	Working toward diploma or GED	Stayout
Any school reason	77.1	76.3	73.1	77.6	77.8	80.0	76.2
Did not like school	45.6	43.5	44.3	43.2	46.8	47.8	46.1
Could not get along with teachers	28.6	32.1	27.6	33.9	26.6	20.4	30.9
Could not get along with students	16.9	16.4	9.1	19.4	17.3	18.4	16.5
Was suspended from school	14.2	15.8	11.5	17.5	13.3	13.9	13.0
Did not feel safe at school	9.5	10.8	14.2	9.5	8.7	9.1	8.4
Expelled from school	11.0	12.4	9.8	13.5	10.2	8.9	11.0
Felt did not belong at school	23.3	28.4	34.1	26.1	20.4	18.7	21.5
Could not keep up with schoolwork	31.6	28.9	19.9	32.5	33.2	35.4	31.6
Failing school	39.1	35.7	30.8	37.7	41.1	43.8	39.2
Changed schools and did not like new one	12.1	11.4	10.8	11.6	12.6	13.6	11.9
Any family reason	34.0	33.8	30.2	35.2	34.2	31.4	36.2
Wanted to have a family	7.7	5.2	5.2	5.2	9.2	7.9	10.0
Pregnant	21.9	23.6	20.6	24.8	20.9	23.8	19.1
Became the parent of a baby	15.0	17.1	15.9	17.6	13.8	13.3	14.1
Had to support my family	10.5	11.2	11.7	11.0	10.1	11.1	9.4
Had to care for a family member	9.5	10.1	6.6	11.5	9.2	8.7	9.6
Got married or planned to get married	14.3	14.1	13.3	14.4	14.5	12.0	16.2
Any job reason	32.3	24.2	21.2	25.4	36.9	37.3	36.6
Got a job	27.3	21.6	19.2	22.5	30.7	30.1	31.1
Could not work and go to school at same time	18.8	13.1	13.8	12.9	22.1	24.5	20.4
Any other reason							
Friends had dropped out of school	11.7	12.4	3.8	15.8	11.4	13.6	9.8
Had a drug or alcohol problem	4.4	5.9	5.0	6.4	3.6	2.6	4.5
Wanted to travel	5.0	4.5	4.5	4.4	5.3	6.4	4.6

[1]Dropouts could cite multiple reasons for leaving high school. Thus, percentages sum to more than 100.

[2]GED refers to General Education Development exam.

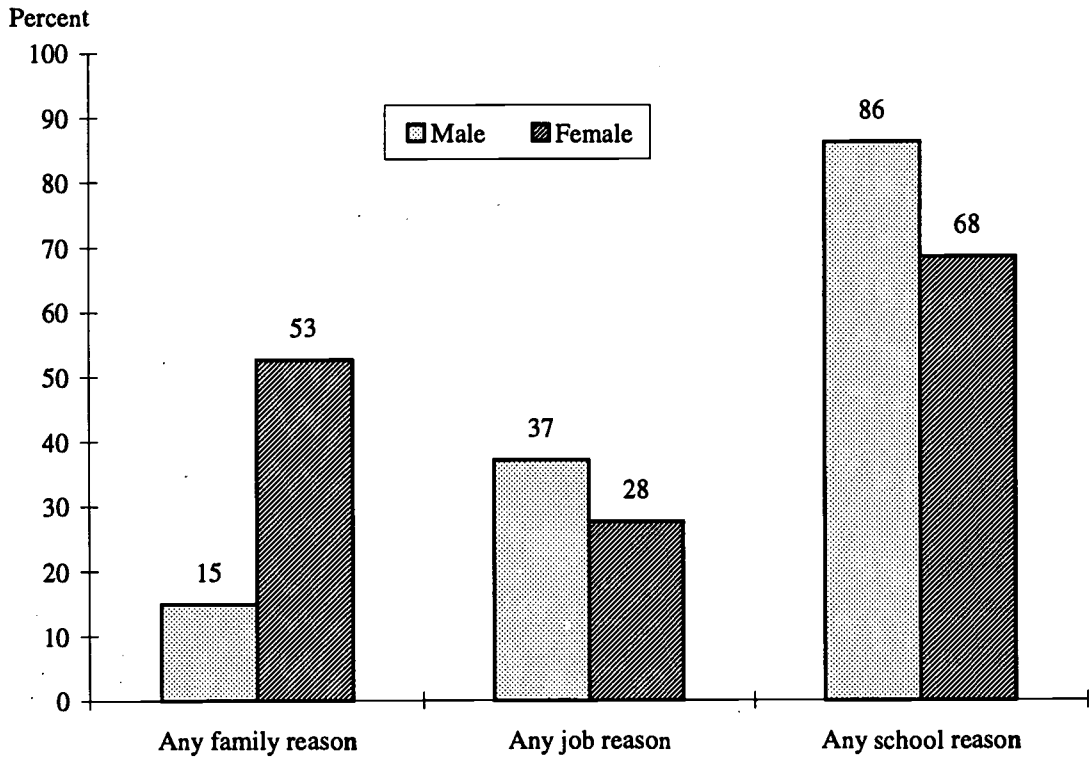
NOTE: This table shows the percentage of dropouts with various graduation statuses who responded affirmatively to the following reasons for dropping out of high school.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Parenthood

Although one-third of dropouts cited family reasons for dropping out, young women were much more likely to give a family-related reason for dropping out than young men (53 percent versus 15 percent; figure 4). In order to examine the relationship between teen parenthood and the completion of high school, table 6 shows the timing of parenthood with respect to dropout date according to 1994 completion status.

Figure 4—Of 1988 eighth graders who dropped out, percentage who gave various reasons for dropping out of high school, by gender*



*Because respondents could select more than one reason for leaving high school, percentages sum to more than 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Dropouts who had children within nine months after dropping out (i.e., were expecting to become parents when they dropped out) were no less likely to complete high school than those

who never had children (48 percent of both groups completed high school). Both groups, however, were more likely to complete high school than those who first became parents more than nine months after dropping out (31 percent; table 6). There was also some association between parenthood and graduation among dropouts who earned high school diplomas, although this was not the case for dropouts with GEDs. Dropouts without children were more likely to earn a diploma than dropouts who had children more than nine months after dropping out (6 percent; table 6). However, dropouts who had a baby nine or fewer months after leaving high school were as likely to complete high school diplomas as those who had no children (15 percent and 14 percent).

Table 6—Of 1988 eighth graders who dropped out, percentage distribution according to 1994 completion status, by timing of parenthood after dropping out of high school

	Completed			Did not complete		
	Total	High school diploma[1]	GED or certificate[2]	Total	Working toward diploma or GED	Stayout
Total	44.0	15.5	28.5	56.0	23.7	32.3
Timing of parenthood in relation to dropping out						
No children	48.4	14.3	34.1	51.6	22.9	28.7
Had baby up to 9 months after dropping out	48.1	15.4	32.7	51.9	20.0	31.9
Had baby more than 9 months after dropping out	31.2	6.0	25.2	68.8	25.4	43.4

[1]Percentage of total dropouts who completed a diploma is out of the range of the timing of parenthood as a result of cases where date of first dropout event was unavailable, thus creating a situation where the timing of parenthood variable had to be set to missing.

[2]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

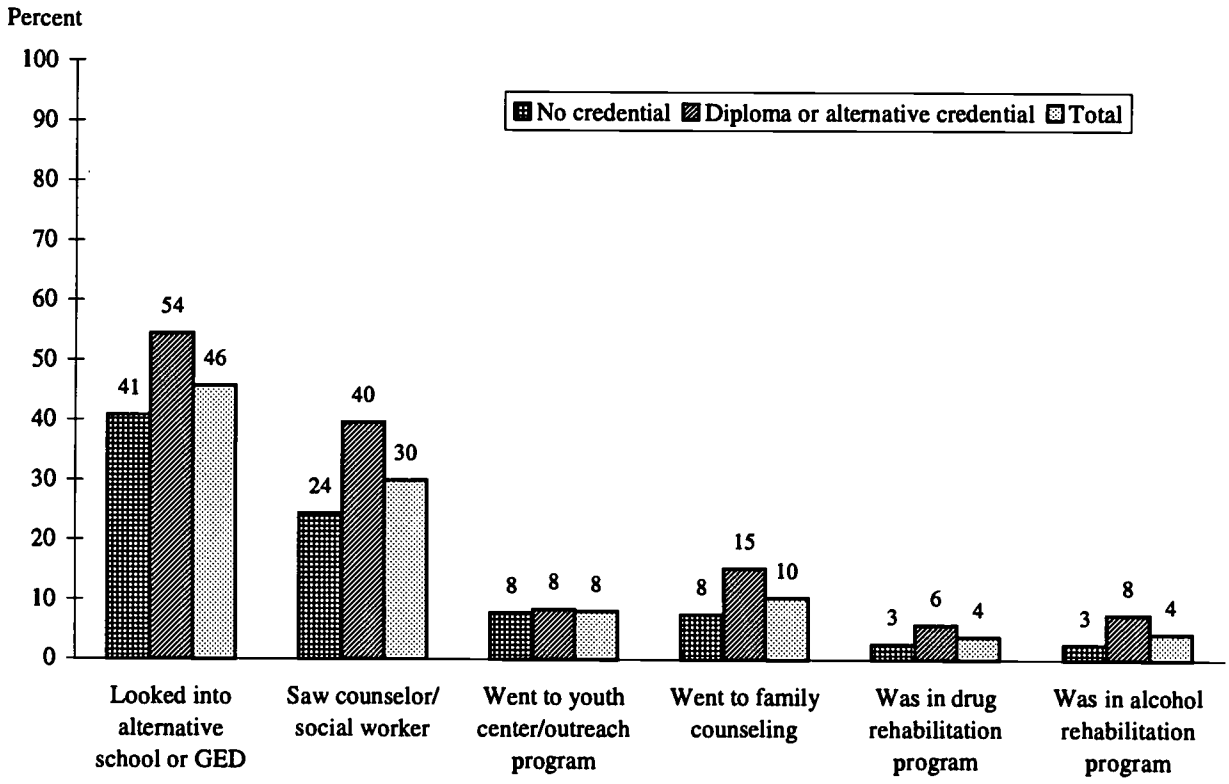
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Interventions

Various organizations attempt to help dropouts make the transition back into the role of student. Many dropouts who successfully completed high school had considered using or had used such a resource. Almost half (46 percent) of dropouts "looked into" an alternative school or

GED;[26] and about 30 percent of dropouts spoke to a counselor or social worker (figure 5). Dropouts who had completed a credential were more likely than those who had not to consider these interventions: 54 percent of completers compared with 41 percent of noncompleters considered an alternative school or GED, and 40 percent of completers compared with 24 percent of noncompleters spoke to a counselor or social worker about returning to school (figure 5).

Figure 5—Of 1988 eighth graders who dropped out, percentage who participated in various interventions immediately before or after dropping out, by 1994 completion status*



* Based on dropouts' responses to the question "In the past 2 years, did any of the following things happen to you?" This question was asked in both the first and second follow-up surveys. Because respondents could select more than one intervention, percentages sum to more than 100. See appendix A for a complete description.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

[26]Because of the way the question was phrased on the survey, "I looked into an alternative school or GED," one could not distinguish between students who attended an alternative school and those who merely considered attending. See appendix A for more details.

In 1992, dropouts were also asked whether they had discussions with any third parties about continuing school since dropping out. About 86 percent of dropouts reported that they had talked with their parents, and about 76 percent had discussed the prospects of continuing school with their peers or with other relatives (table 7). Dropouts who had earned a diploma by 1994 were more likely than those who had earned a GED to have spoken with various school-related individuals—such as principals (47 versus 12 percent) and school counselors (57 versus 33 percent)—about continuing their education. Although there appears to be a similar difference between diploma recipients and GED recipients with regard to having such discussions with teachers (56 versus 38 percent), there is not enough statistical evidence to conclude that these differences were significant (table 7).

Table 7—Of 1988 eighth graders who dropped out, percentage who by 1992 had talked with various people about continuing school, by 1994 completion status

	Parents	Sibling	Teacher	Principal	Coun-selor	Peer	Other relative	Clergy	Social worker	Adult friend
Total	86.2	52.3	40.3	19.6	35.9	76.5	75.5	11.2	13.7	69.7
Completed high school	86.9	46.9	42.8	21.5	39.3	73.8	69.5	11.0	11.0	62.8
High school diploma	88.7	52.2	55.9	47.1	56.5	82.8	81.8	19.9	15.7	67.2
GED or certificate*	86.3	45.0	38.1	12.2	33.1	70.5	65.0	7.8	9.3	61.2
Did not complete high school	85.8	55.0	38.9	18.7	34.2	77.8	78.5	11.4	15.1	73.2
Working toward diploma or GED	90.7	51.9	40.9	20.8	38.1	83.7	84.1	13.2	15.8	78.5
Stayout	82.1	57.4	37.3	17.1	31.3	73.5	74.4	10.0	14.6	69.2

*GED refers to General Education Development exam.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

MODEL OF COMPLETION AMONG DROPOUTS

As this analysis has shown thus far, there are different elements associated with a dropout's completion of high school. Because these factors are interrelated and working together simultaneously, it can be difficult to ascertain the independent influence of each on the outcome of completion. This type of analysis cannot reveal the unique relationship between each variable and high school completion status. This section uses linear regression to illustrate how certain characteristics are associated with a dropout's decision to complete high school, after controlling for a set of other characteristics. For information about the methodology, see appendix B.

Table 8 shows the results of an analysis of high school completion, via either a diploma or GED, among dropouts. The first column displays the unadjusted percentages—the proportion of dropouts who completed high school before controlling for the other variables in the table—and the second column displays the adjusted percentages for a hypothetical dropout with average values on the other variables. The italicized row in each set of characteristics represents the comparison group for significance testing, and the asterisks indicate cases where the percentage for a given group is significantly different from that of the comparison group. For example, the percentage of dropouts whose composite test scores were in the low and middle quartiles were less likely to have completed high school than those with high composite test scores both before and after adjusting for the other variables in the table.

This analysis shows that adjusting for variation among these variables results in somewhat different patterns from those based on individual comparisons of the unadjusted percentages. Dropouts whose families were in the highest SES quartile were still more likely to complete high school than their counterparts in the other SES quartiles; completing high school was still more likely among dropouts with test scores in the highest quartile than among those in the other three quartiles; and dropouts who had children more than nine months after dropping out were still less likely to finish high school than their counterparts who never had children or were expecting at the time of the dropout event. However, adjusting for covariation resulted in different relationships with two variables: student expectations and GPA. Although dropouts who expected to complete a bachelor's degree or higher were still more likely to finish than dropouts who expected to complete no more than high school, prior to adjustment, dropouts expecting to earn a

Table 8—Of 1988 eighth graders who dropped out, percentage who completed high school by 1994, by selected characteristics, and this percentage after taking into account the covariation of the variables in the table[1]

	Unadjusted percentage[2]	Adjusted percentage[3]	WLS coefficient[4]	Standard error[5]
Total	44.0	44.0	84.3	10.8
Gender				
Male	*44.6*	*43.7*	(†)	(†)
Female	43.3	44.3	0.7	4.5
Race–ethnicity				
Asian/Pacific Islander	32.5	31.1	-11.5	18.0
Hispanic	38.8	46.4	3.9	6.3
Black, non-Hispanic	41.5	46.7	4.1	7.2
White, non-Hispanic	*46.5*	*42.5*	(†)	(†)
American Indian/Alaskan Native	43.0	52.8	10.3	15.6
Socioeconomic status 1988				
Low quartile	33.0*	36.5*	-30.3	7.8
Middle quartiles	49.6*	47.5*	-19.3	7.8
High quartile	*73.9*	*66.8*	(†)	(†)
Composite test quartile 1988				
Low quartile	29.5*	31.0*	-33.6	5.7
Middle quartiles	54.6*	49.3*	-15.3	7.2
High quartile	*75.8*	*64.6*	(†)	(†)
Grade point average (high school transcripts)				
A or B average	50.4	44.4	3.5	9.2
C average	49.0*	45.9	5.0	5.1
D or F average	*35.5*	*40.9*	(†)	(†)
Student's educational expectations 1988				
High school or less	33.2*	38.0*	-11.4	5.5
Some postsecondary education	40.8*	42.3	-7.1	5.4
Bachelor's degree or higher	*53.8*	*49.4*	(†)	(†)
Grade year of first dropout event				
9th grade or earlier	*39.5*	*50.0*	(†)	(†)
10th grade	44.2	45.6	-4.4	6.2
11th grade	44.5	46.0	-4.0	7.9
12th grade	42.2	38.2	-11.8	6.2
Timing of parenthood in relation to dropping out				
No children	48.4*	48.1*	13.7	4.7
Had baby up to 9 months after dropping out	48.1*	51.7*	17.3	7.7
Had baby more than 9 months after dropping out	*31.2*	*34.4*	(†)	(†)

*$p \leq .05$.

†Not applicable for the reference category.

[1]Dropouts who completed high school did so by earning either a high school diploma or an alternative credential.

[2]Unadjusted percentages are from the NELS:88/94 Data Analysis System.

[3]See appendix B for an explanation of the adjustment procedure.

[4]Weighted least squares (WLS) coefficients were multiplied by 100 to match the percentage scale (see appendix B).

[5]Standard error of WLS coefficient, adjusted for design effects and multiplied by 100 to match the percentage scale (see appendix B).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

bachelor's degree were also more likely to complete high school than those dropouts who expected to get some postsecondary education. This change is attributable to the inclusion of other variables such as test scores in the model; for example, dropouts with higher academic ability are also more likely to have higher expectations.[27] Another possible explanation could come from the inclusion of socioeconomic status in the model, considering that, for example, completers in the lowest SES quartile were less likely to expect to complete a bachelor's degree than those in the middle or top quartiles.[28] Even though dropouts who had C averages while enrolled were more likely to complete high school than dropouts who had mostly D and F averages before dropping out, after adjusting for covariation, GPA was no longer a significant factor. As with educational expectations, test scores are also associated with GPA.[29]

[27]U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.
[28]Ibid.
[29]Ibid.

1994 EMPLOYMENT AND ENROLLMENT

In order to establish enrollment and employment differences, the postsecondary enrollment and employment experiences of 1988 eighth graders are evaluated with respect to two factors: 1) dropping out and 2) high school completion. Dropouts are compared with those 1988 eighth graders who did not drop out. Further, dropouts are divided into two categories, based on completion status. This enables one to examine the ways in which dropouts who completed high school (dropout completers) resemble those who completed high school without having dropped out (traditional completers), as opposed to dropouts who did not complete high school (noncompleters). Consequently, the achievements of these youth can be benchmarked, providing evidence pertaining to the relationship of returning to complete high school after dropping out with postsecondary and employment opportunities.

However, traditional completers enrolled in postsecondary degree programs are involved in activities very different from high school graduates working full time (see table 9a). As a result, comparisons between the all-inclusive groups of dropouts and those who had not dropped out may not be as meaningful as comparisons of dropouts to graduates without significant postsecondary experience. Thus, in an attempt to normalize the years of education across all students, the analysis is restricted to 1988 eighth graders not enrolled in or having completed associate's or bachelor's degree programs (i.e., their highest postsecondary attainment in 1994 was not an associate's or bachelor's degree nor any postsecondary activity that would lead to the completion of an associate's or bachelor's degree). Comparisons are then drawn between the employment and educational attainment of these youth according to whether they dropped out and, for dropouts, whether they completed high school.

CURRENT ACTIVITIES

In February 1994, slightly less than two years after most of their cohort had graduated from high school, those who had ever dropped out from the eighth-grade cohort of 1988 tended to be working or looking for a job. A smaller percentage of dropouts, however, particularly among those who had returned to school and earned a diploma or GED, were enrolled in postsecondary education.

Table 9a—Percentage of 1988 eighth graders participating in various enrollment- and employment-related activities in February 1994, by 1994 completion status[1]

	Working full- or part-time	Vocational/ technical courses at any school	Academic courses at 2- or 4-year college	Apprenticeship/ government training	Active duty in armed forces	Keeping house (full-time homemaker)	Temporary layoff/ waiting to report	Looking for work
Total	62.4	6.4	46.8	1.7	2.8	7.3	1.6	8.1
Never dropped out	63.1	6.5	57.2	1.6	3.3	4.6	1.5	6.2
Dropped out	59.7	6.2	7.8	2.1	1.1	17.6	2.2	15.5
Completed high school	63.9	8.0	15.9	1.6	2.2	13.6	1.5	14.9
High school diploma	70.5	5.7	19.1	0.3	3.0	17.7	0.9	7.0
GED or certificate[2]	60.3	9.3	14.1	2.2	1.7	11.4	1.9	19.1
Did not complete high school	56.5	4.7	1.3	2.5	0.2	20.8	2.7	16.0
Working toward diploma or GED	51.8	8.3	2.0	2.8	0.3	19.8	3.8	18.3
Stayout	59.9	2.1	0.9	2.3	0.2	21.6	1.8	14.2

[1]In the Third Follow-up Survey, both students and dropouts were asked to respond to the following question: "Now, please think back to the middle of February 1994. At that time were you . . . ?" for each activity listed. Thus, percentages sum to more than 100.

[2]GED refers to General Education Development exam.

SOURCE: U.S. Department of Education; National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

About the same proportion of dropouts as 1988 eighth graders who had never dropped out reported working full time or part time in 1994 (60 and 63 percent, respectively; table 9a). Those who had never dropped out, however, were much more likely to be taking academic courses. More than half (57 percent) of those who had never dropped out were enrolled in 2- or 4-year postsecondary institutions in 1994, compared with 8 percent of dropouts who were similarly enrolled. Dropouts, by comparison, were much more likely than those who had never dropped out to report keeping house or being a full-time homemaker (18 versus 5 percent). In addition, dropouts were also more likely to be looking for work (16 percent) than their counterparts who had not dropped out (6 percent; table 9a).

Postsecondary enrollment appeared to make a difference in the types of activities that those who had never dropped out were participating in. To illustrate, 63 percent of all traditional completers were working full time or part time. After controlling for enrollment in an associate's or bachelor's degree program, however, 71 percent of traditional completers not working toward a postsecondary degree reported working full- or part-time (tables 9a and 9b).

Table 9b—Of 1988 eighth graders not working toward an associate's or bachelor's degree[1], percentage participating in various enrollment- and employment-related activities in February 1994, by 1994 completion status[2]

	Working full time or part time	Vocational/ technical courses at any school	Academic courses at 2- or 4-year college	Appren-ticeship/ govern-ment training	Active duty in armed forces	Keeping house (full-time home-maker)	Temporary layoff/ waiting to report	Looking for work
Total	67.3	6.8	15.1	2.1	4.7	12.0	2.2	11.0
Never dropped out[3]	71.3	7.3	22.8	2.2	7.1	7.9	2.1	7.9
No postsecondary education[4]	73.7	0.0	0.0	1.9	10.1	10.4	2.4	9.7
Dropped out	60.5	6.0	2.1	2.0	0.8	18.9	2.4	16.3
Completed high school	67.7	8.0	5.3	1.9	1.8	15.3	1.9	16.0
High school diploma	74.8	4.8	4.9	0.4	3.5	21.5	1.2	7.6
GED or certificate[5]	64.0	9.7	5.4	2.8	0.9	12.0	2.2	20.4
Did not complete high school	55.8	4.7	0.0	2.1	0.2	21.3	2.8	16.5
Working toward diploma or GED	50.4	8.5	0.1	1.7	0.1	20.7	4.1	19.5
Stayout	59.5	2.1	0.0	2.4	0.2	21.7	1.9	14.4

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]In the Third Follow-up Survey, both students and dropouts were asked to respond to the following question: "Now, please think back to the middle of February 1994. At that time were you . . . ?" for each activity listed. Thus, percentages sum to more than 100.

[3]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[4]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[5]GED refers to General Education Development exam.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Among dropouts, high school completion appeared to be associated with working full time or part time. Although noncompleters were less likely to be working than completers who both had or had not dropped out, dropout completers who were not taking courses leading to a post-secondary degree were no less likely to be working than traditional completers (56 percent for dropout noncompleters versus 68 and 71 percent; table 9b).

Having dropped out, regardless of completion status, was associated with other 1994 activities. After eliminating students in postsecondary programs, those 1988 eighth graders who had never dropped out, but were not working toward a postsecondary degree, remained more likely to be taking academic courses at a 2- or 4-year college in February 1994 than their

counterparts who had dropped out but completed high school (23 versus 5 percent). Traditional completers not working toward a postsecondary degree were also more likely than dropout completers to be on active duty with the armed forces (7 versus 2 percent). On the other hand, even though both groups had completed high school, those who had done so after dropping out were more likely to report they were homemaking full time than those who had never dropped out (15 versus 8 percent). Furthermore, dropout completers were twice as likely as traditional completers not enrolled in a postsecondary degree program to report they were looking for work (16 percent versus 8 percent; table 9b).

Dropout completers and noncompleters, however, were not always comparable either. For instance, among those not pursuing a degree, completers were more likely than noncompleters to report being enrolled in academic courses (5 versus less than 1 percent; table 9b).

Completers who had earned a high school diploma were less likely than most other dropouts to report that they were looking for work. About 8 percent of dropouts with a diploma were looking for work in 1994, compared with 14 percent of stayouts and 20 percent of dropouts working toward a credential. There is some evidence that diploma completers may also be less likely than GED completers to be looking for work (table 9b).[30]

LABOR MARKET

This study found few differences in both the likelihood of employment and earnings among different groups of dropouts in 1993, one year after most of the 1988 eighth-grade cohort had graduated from high school. Overall, whether students had dropped out, not whether they had gone back to continue their secondary education, was more likely to be associated with such labor market behavior as unemployment.[31] However, dropouts who had completed a high school diploma were, in some cases, more likely to resemble their counterparts who had never dropped out and were not pursuing a postsecondary degree. For GED completers, labor market characteristics were similar to those of their dropout peers without a high school credential. This analysis supports Cameron and Heckman's findings that dropouts with a GED and stayouts did not differ with respect to income and occupation.[32]

[30]The distinction between dropouts with a diploma and with a GED was significant at the 0.10 level, not at the conventional 0.05 level.

[31]It is unclear from the data whether this was an artifact of small sample size or a result of the similarities that resulted from the youth being in the work force for so few years. In his book, *Human Capital* (1964), Gary Becker discusses the impact of years in the work force versus education on labor market experiences.

[32]S. Cameron and J. Heckman, 1993.

Unemployment

Among 1988 eighth graders not enrolled in a postsecondary degree program, dropouts were more likely to have been unemployed in 1993 than those who had completed high school without dropping out. About 85 percent of traditional completers not working toward an associate's or bachelor's degree were unemployed for no months in 1993, compared with 69 percent of dropout completers. This was also reflected in the average number of months they were unemployed, with traditional completers averaging 5.7 months of unemployment for 1993, compared with 7.2 of dropouts (table 10).

Table 10—Of 1988 eighth graders not working toward an associate's or bachelor's degree, percentage distribution according to number of months unemployed in 1993 and average number of months unemployed, by 1994 completion status[1]

	Number of months unemployed				Average number of months unemployed
	None	1 to 3	3 to 6	More than 6 months	
Total	79.3	7.0	4.0	9.7	6.5
Never dropped out[2]	84.8	6.0	3.5	5.8	5.7
No postsecondary education[3]	83.7	6.4	3.6	6.3	5.8
Dropped out	69.9	8.8	5.0	16.3	7.2
Completed high school	68.6	8.7	6.0	16.7	7.2
High school diploma	67.0	11.0	4.5	17.5	6.4
GED or certificate[4]	69.5	7.5	6.7	16.3	7.6
Did not complete high school	70.8	8.9	4.4	15.9	7.2
Working toward diploma or GED	67.7	8.5	4.5	19.3	7.5
Stayout	72.9	9.3	4.3	13.6	7.1

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Among dropouts, there were no measurable differences with respect to having been unemployed in 1993, nor in the average number of months unemployed in 1993, regardless of whether or how high school was completed (table 10). Considering that dropouts with a diploma were less likely than others to be looking for work (table 9b), this finding might indicate a better-than-expected situation for GED completers and stayouts. About 67 to 73 percent of dropouts, regardless of whether or how high school was completed, were employed for all of 1993, and those dropouts that had been unemployed were so for an average of 6 to 8 months.

Hours on the Job

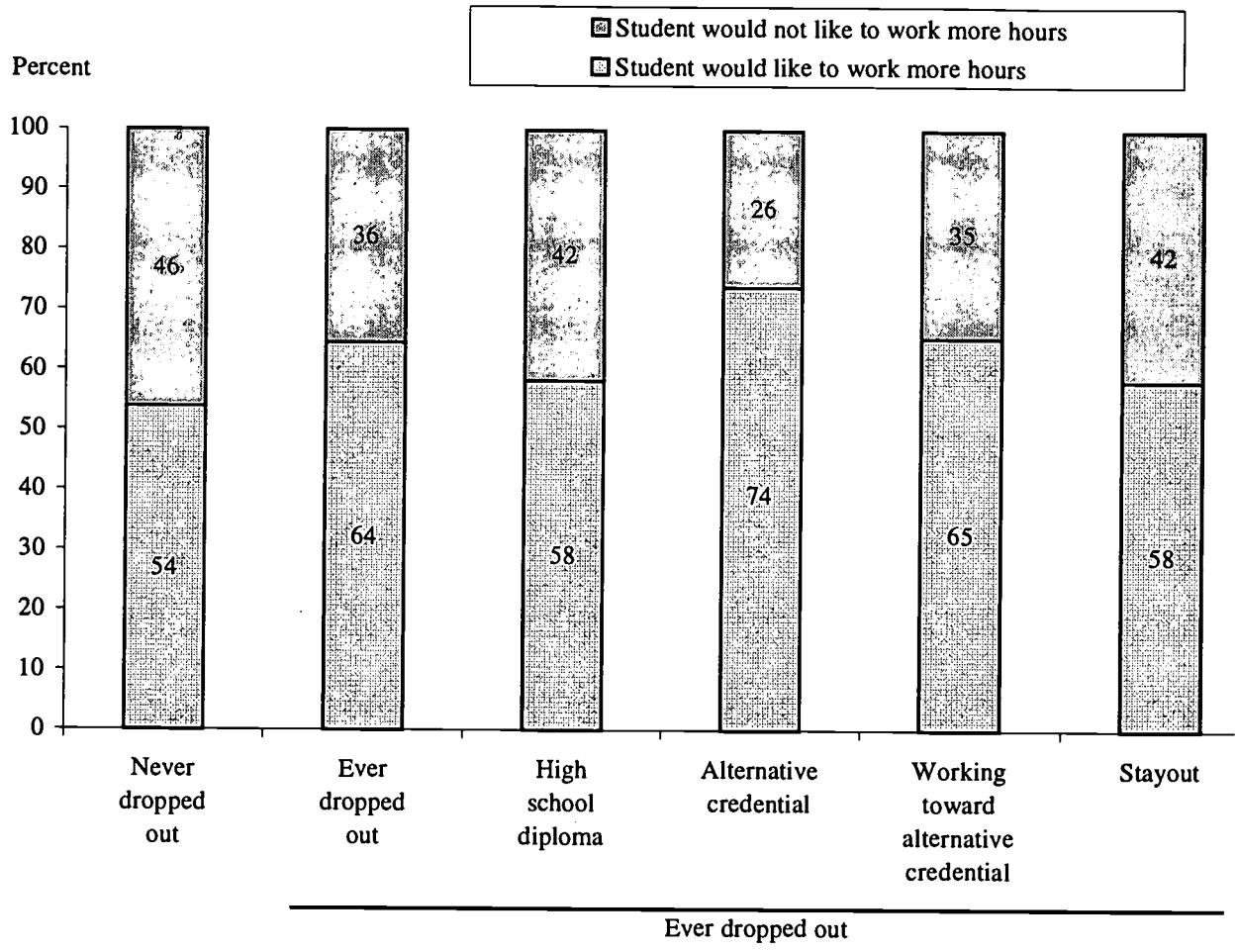
Dropouts tended to want to work more hours than 1988 eighth graders who had never dropped out (who were more likely to be enrolled in school; see table 9a). Among those 1988 eighth graders who worked fewer than 40 hours per week at their primary job in 1993, dropouts were more likely than those who had not dropped out to report that they would like to work more hours (64 versus 54 percent; figure 6).

In order to compare those 1988 eighth graders who were workers instead of postsecondary students in 1993, enrollment in a postsecondary degree program was controlled for. As shown in table 11, among those not working toward a postsecondary degree, dropouts worked more hours, averaging 39 hours per week at their primary job in 1993, while those who had not dropped out worked 38 hours per week, on average (table 11). A higher proportion of 1988 eighth graders who had not dropped out were working part time, compared with dropouts. About 11 percent of those who had never dropped out worked 11 to 20 hours per week in 1993, compared with 7 percent of dropouts (table 11).

Occupation

Table 12 illustrates the types of industries in which 1988 eighth graders reported working in 1993. The most common occupations for dropouts in 1993 included service worker (22 percent), craftsman/operative (22 percent), laborer (20 percent), and clerical (17 percent). Dropouts were more likely than those who had not dropped out to be laborers (20 versus 11 percent), whereas those who had not dropped out were more likely than dropouts to be in the military or protective service (6 versus 3 percent), or working as professionals or teachers (3 versus 1 percent; table 12).

Figure 6—Among 1988 eighth graders who worked fewer than 40 hours per week in 1993, percentage distribution according to desire to work more hours, by 1994 completion status



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Among dropouts, completion of high school was associated with those youth reporting to be in the military or protective service. About 3 percent of dropout completers reported being in the military or protective service, compared with 1 percent of noncompleters (table 12).

Table 11—Of 1988 eighth graders not working toward an associate's or bachelor's degree, percentage distribution according to number of hours worked per week at primary job in 1993, and average hours worked per week, by 1994 completion status[1]

	Number of hours worked per week at primary job in 1993					Average number of hours worked per week
	1 to 10	11 to 20	21 to 30	31 to 40	More than 40	
Total	1.8	9.5	16.4	47.8	24.5	38.1
Never dropped out[2]	2.2	10.7	17.3	46.9	22.9	37.6
No postsecondary education[3]	1.2	5.6	11.8	51.5	30.0	40.9
Dropped out	1.2	7.1	14.5	49.6	27.7	39.1
Completed high school	1.4	7.0	13.9	50.0	27.6	39.3
High school diploma	0.0	12.5	12.9	53.8	20.8	38.3
GED or certificate[4]	2.2	4.1	14.5	48.0	31.2	39.8
Did not complete high school	1.0	7.1	14.9	49.2	27.9	39.0
Working toward diploma or GED	1.6	8.4	18.8	51.0	20.2	37.0
Stayout	0.5	6.2	12.1	47.9	33.2	40.4

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Wages

Although it might be expected that dropouts were earning more in 1993, in accordance with their likelihood of working more hours (see table 11), neither dropout nor high school completion status among dropouts was associated with average annual income (table 13). When full-time work was controlled for (working 35 or more hours per week), wage return continued to favor no broad group in particular, regardless of dropout or completion status (table 14).

Dropouts' wages were not positively associated with secondary school attainment. Among dropouts working full time, there were no measurable differences in earnings between diploma and GED completers ($10,600 among dropouts with a diploma and $9,900 among dropouts with a GED). However, among all dropouts, those still working toward a high school diploma or GED

Table 12—Of 1988 eighth graders not working toward an associate's or bachelor's degree, percentage distribution according to occupational type of primary job in 1993, by 1994 completion status[1]

	Clerical	Craftsman/ skilled operative/ technical	Farmer	Laborer	Manager/ admin- istrator	Military/ protective service	Profes- sional/ school teacher	Business owner	Sales	Service
Total	20.4	19.9	2.3	14.7	7.6	4.0	2.0	0.4	8.4	20.3
Never dropped out[2]	22.4	18.9	2.5	11.4	8.0	5.5	2.8	0.4	8.8	19.3
No postsecondary education[3]	21.6	19.7	2.7	13.0	7.8	6.5	2.7	0.5	8.4	17.0
Dropped out	17.2	21.7	1.9	20.0	6.8	1.6	0.8	0.4	7.8	21.8
Completed high school	18.2	21.2	2.3	17.3	7.9	3.0	1.2	0.2	10.4	18.5
High school diploma	21.3	19.4	1.8	16.6	10.0	3.7	1.2	0.5	10.9	14.8
GED or certificate[4]	16.6	22.1	2.5	17.6	6.8	2.6	1.2	0.1	10.1	20.4
Did not complete high school	16.6	22.1	1.7	21.9	6.1	0.7	0.6	0.4	6.1	23.9
Working toward diploma or GED	17.6	20.5	1.6	20.2	7.4	0.9	0.5	0.8	4.7	25.9
Stayout	15.9	23.1	1.8	23.1	5.2	0.5	0.6	0.2	7.1	22.5

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Table 13—Of 1988 eighth graders not working toward an associate's or bachelor's degree, percentage distribution according to total earnings and average total earnings in 1993, by 1994 completion status[1]

	1993 total earnings					Average 1993 total earnings
	$2,000 or less	$2,001 to $4,000	$4,001 to $6,000	$6,001 to $10,000	More than $10,000	
Total	17.6	14.7	12.9	25.3	29.6	$8,189
Never dropped out[2]	17.3	15.0	13.4	25.2	29.2	8,103
No postsecondary education[3]	13.1	10.2	10.6	28.8	37.3	9,425
Dropped out	18.3	14.1	11.9	25.4	30.4	8,369
Completed high school	15.7	14.4	10.0	25.4	34.6	8,868
High school diploma	13.6	13.5	12.5	25.5	34.9	9,219
GED or certificate[4]	16.6	14.7	8.9	25.3	34.5	8,706
Did not complete high school	20.2	13.9	12.9	25.5	27.5	8,031
Working toward diploma or GED	27.7	18.0	12.8	19.1	22.4	6,900
Stayout	14.7	10.9	13.0	30.2	31.3	8,861

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

earned less in 1993, on average, than all other dropouts ($6,900 versus $8,700–$9,200; table 13). This may be attributable to part-time employment. For example, after controlling for those working 35 or more hours per week, dropouts who completed a diploma had higher 1993 average earnings than dropouts who were working on their high school credential ($10,600 versus $8,300; table 14), but other dropouts did not.

Table 14—Of 1988 eighth graders not working toward an associate's or bachelor's degree and who worked 35 or more hours per week at their primary job in 1993, percentage distribution according to total earnings and average total earnings in 1993, by 1994 completion status[1]

	1993 total earnings					Average 1993 total earnings
	$2,000 or less	$2,001 to $4,000	$4,001 to $6,000	$6,001 to $10,000	More than $10,000	
Total	11.4	11.2	10.6	28.8	38.1	$9,589
Never dropped out[2]	11.1	10.9	10.7	28.6	38.7	9,605
No postsecondary education[3]	8.0	7.6	8.8	31.7	43.9	10,542
Dropped out	11.8	11.8	10.4	29.1	36.9	9,558
Completed high school	9.4	10.9	8.5	28.3	43.0	10,118
High school diploma	9.6	8.0	9.3	29.5	43.6	10,574
GED or certificate[4]	9.3	12.2	8.1	27.7	42.7	9,916
Did not complete high school	13.5	12.5	11.4	29.8	32.8	9,176
Working toward diploma or GED	16.6	17.7	12.8	23.5	29.3	8,347
Stayout	11.6	9.2	10.6	33.8	34.9	9,702

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

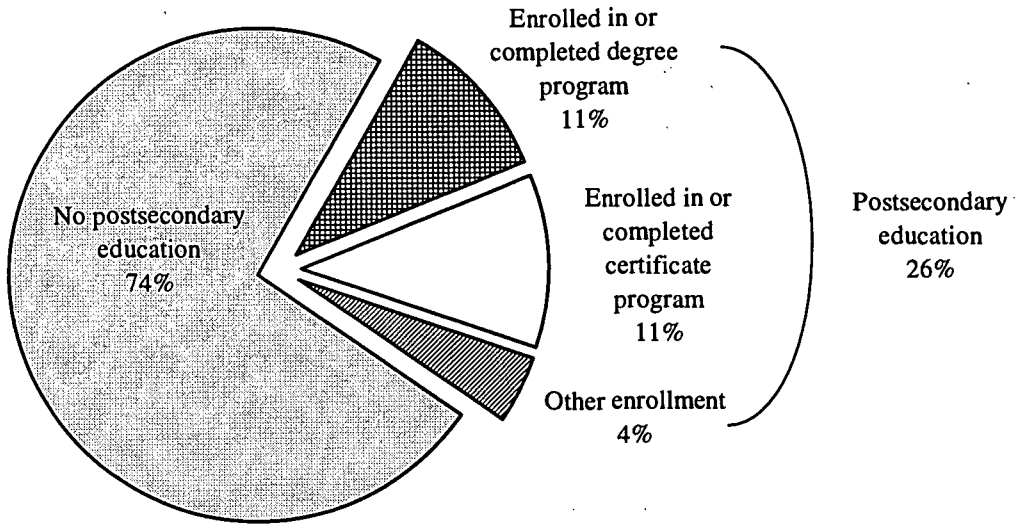
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

POSTSECONDARY EXPERIENCE

About one in four dropouts (26 percent) had attained some form of postsecondary education by 1994. About 11 percent of all dropouts were working toward either a 2- or 4-year degree, and 11 percent more were working toward or had obtained a vocational certificate. The remaining 4 percent were enrolled in other postsecondary programs (figure 7a).

Among dropouts, completion of high school was associated with postsecondary attainment. Dropout completers were more likely than noncompleters to have attained a couple of types of postsecondary education, including courses leading to the completion of a degree (21 versus 2 percent) or other type of postsecondary enrollment (7 versus 3 percent; table 15).

Figure 7a—Of 1988 eighth graders who dropped out, percentage distribution according to highest post-secondary level attained: 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Overall, dropout completers were less likely to attend postsecondary education than traditional completers (58 percent of dropout completers had no postsecondary education versus 22 percent of traditional completers). Dropout completers were less likely than traditional completers to enroll in a 2- or 4-year program. Dropouts who had completed high school were just over one-third as likely as students who had never dropped out to be enrolled in a 2- or 4-year degree program (21 versus 60 percent; table 15).[33]

Among dropout completers, no differences were found in the proportions of students with diplomas or GEDs enrolling in the various types of postsecondary education (table 15). Furthermore, both these groups were much more likely to have enrolled in a 2- or 4-year degree program than dropouts with no credential. About 46 percent of dropouts with a diploma, and 41 percent of

[33]On the other hand, there was some evidence that dropout completers were more likely to have enrolled in or completed a vocational certificate (15 versus 9 percent).

Table 15—Percentage distribution of 1988 eighth graders according to their highest postsecondary attainment as of 1994, by 1994 completion status[1]

		Some postsecondary education			
	No postsecondary education	Total	Enrolled in or completed degree program	Enrolled in or completed certificate program	Other enrollment[2]
Total	32.6	67.4	49.7	9.8	7.9
Never dropped out	21.8	78.3	60.1	9.3	8.9
Dropped out	73.6	26.4	10.5	11.4	4.4
Completed high school	57.7	42.4	20.9	15.0	6.5
High school diploma	54.3	45.7	21.8	14.5	9.4
GED or certificate[3]	59.5	40.5	20.4	15.3	4.9
Did not complete high school	86.3	13.7	2.3	8.6	2.8
Working toward diploma or GED	82.5	17.5	4.0	10.8	2.7
Stayout	89.1	11.0	1.1	7.1	2.8

[1]The estimates in this table differ slightly from those given in McMillen and Kaufman (1996, table 19) because different samples and weights were used.

[2]Refers to postsecondary enrollment in which a student was not working toward a certificate, license, associate's degree, or bachelor's degree.

[3]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

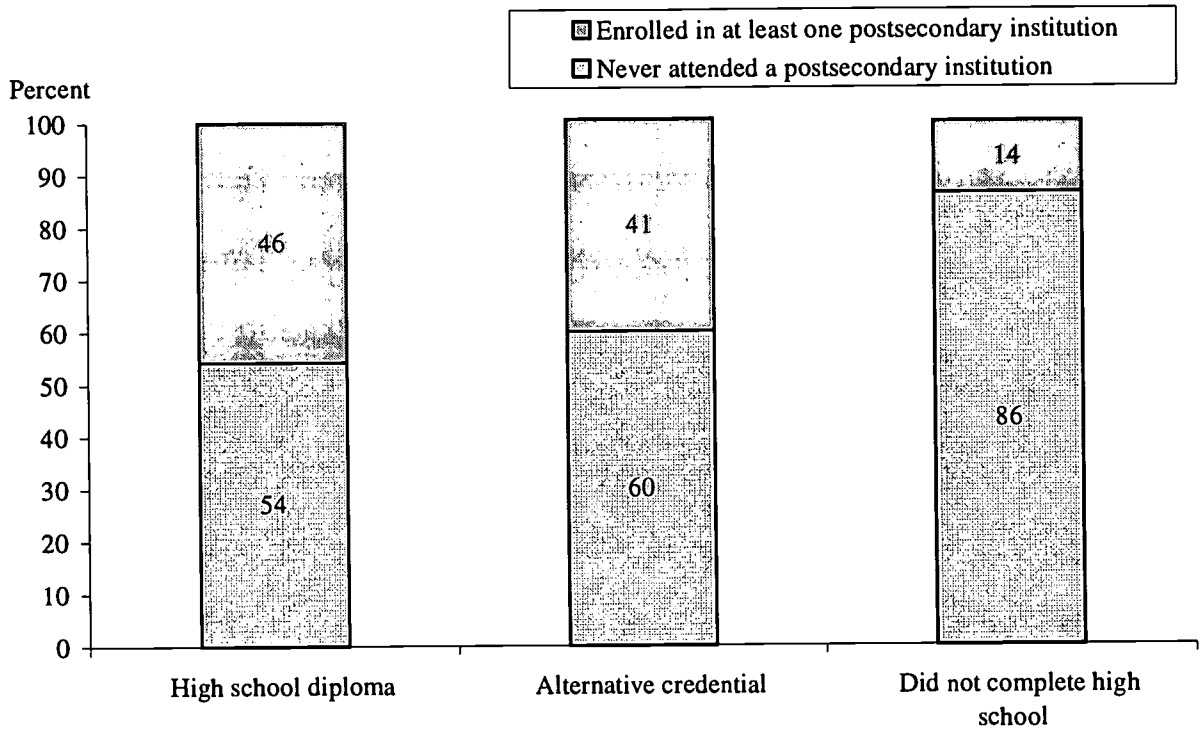
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

dropouts with a GED, enrolled in postsecondary education, compared with 14 percent of dropouts with no high school credential (figure 7b).

Expectations

As shown in table 16, some dropouts reported high expectations for their educational attainment. In 1994, about one in four dropouts with a high school diploma (26 percent) or GED (28 percent) expected to earn a bachelor's degree, and 27 and 20 percent more of each group, respectively, expected to earn an advanced degree. Although the proportions of stayouts sharing in these expectations were smaller, 10 percent still expected to earn a bachelor's degree, and 3 percent more expected to earn an advanced degree. About 12 percent of stayouts, dropouts who at the time of the survey were not continuing their education, did not expect to complete a diploma or enroll in postsecondary education (table 16).

Figure 7b—Of 1988 eighth graders who dropped out, percentage distribution according to enrollment in a postsecondary institution, by 1994 completion status



NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Friends in Postsecondary Education

Both completion and dropout status were strongly associated with the number of friends 1988 eighth graders had in 1992 with plans to attend a 4-year college, the year their cohort was graduating from high school. About 41 percent of traditional completers who were not working toward an associate's or bachelor's degree reported in 1992 that most or all of their friends were planning to go to college, compared with 19 percent of dropout completers who reported that most or all of their friends were planning to go to college (table 17).[34]

[34]There was some evidence that dropout completers, however, were more likely than noncompleters to report that most or all of their friends were going to college (19 percent versus 13 percent). This was significant at the 0.10 level.

Table 16—Percentage distribution of 1988 eighth graders according to the highest level of education they ever expected to complete, by 1994 completion status[1]

	Some high school	High school diploma	Trade school	Some college	Bachelor's degree	Advanced degree
Total	0.9	9.3	9.2	12.8	31.9	36.0
Never dropped out[2]	(†)	5.0	7.2	11.3	34.4	42.2
Dropped out	4.1	26.0	17.1	18.7	22.4	11.8
Completed high school	(†)	13.9	15.1	21.0	27.3	22.8
High school diploma	(†)	13.3	16.9	16.5	25.9	27.4
GED or certificate[3]	(†)	14.1	14.2	23.4	28.1	20.2
Did not complete high school	7.3	35.4	18.7	16.9	18.5	3.2
Working toward diploma or GED	0.9	24.1	19.0	21.8	30.3	3.9
Stayout	12.1	43.8	18.5	13.4	9.8	2.6

†Not applicable.

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

Among dropouts, however, those who eventually attained a high school diploma were more likely than those who had not completed a credential to report that most of their friends planned on attending a 4-year college. About 24 percent of dropouts who had attained a diploma reported in 1992 that most or all of their friends were planning on going to college, compared with 12 percent of stayouts and 14 percent of dropouts working toward a diploma or GED (table 17).[35]

[35]The distinction between dropouts with a diploma and those with working toward a diploma was significant at the 0.10 level, not at the conventional 0.05 level.

Table 17—Of 1988 eighth graders not working toward an associate's or bachelor's degree, percentage distribution of number of friends planning to go to college in 1992, by 1994 completion status[1]

	None	Few to some	Most or all
Total	17.0	52.1	30.9
Never dropped out[2]	10.5	48.9	40.6
No postsecondary education[3]	14.3	55.0	30.7
Dropped out	27.6	57.2	15.3
Completed high school	24.5	56.7	18.8
High school diploma	22.9	53.5	23.6
GED or certificate[4]	25.3	58.4	16.3
Did not complete high school	29.6	57.5	12.9
Working toward diploma or GED	25.2	61.0	13.8
Stayout	32.7	55.1	12.2

[1]Postsecondary attainment for 1988 eighth graders was based on 1994 self-reported data of highest postsecondary education attained. Those not working toward an associate's or bachelor's were considered so because their highest postsecondary attainment was not completion of, or working toward, a 2- or 4-year degree.

[2]Those who had never dropped out had either 1) some postsecondary education (but not coursework leading to the completion of an associate's or bachelor's degree); 2) obtained or were working toward a certificate; or 3) no postsecondary education.

[3]"No postsecondary education" is a subset of the previous category. This category includes only those who had no postsecondary education.

[4]GED refers to General Education Development exam.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

SUMMARY

Dropouts may have chosen to leave school for a number of reasons. Most were having problems at or with school, such as getting poor grades or simply not liking school: more than three-quarters of dropouts (77 percent) cited a school-related reason for dropping out. However, some dropouts also had other underlying family or economic obligations associated with leaving high school (table 4).

Once a student dropped out, however, the decision to return to complete his or her high school education was associated with several factors. First, dropouts whose families were in the middle or high SES quartiles were more likely to complete high school than those whose families were in the lowest quartile. Furthermore, completers were less likely than noncompleters to report job-related reasons for dropping out. Academics were also associated with completion. Dropouts achieving test scores in the highest quartile were more likely to complete high school than dropouts scoring in either the middle quartiles or low quartile, and dropouts who scored in the middle quartiles were more likely to complete than those with scores in the lowest test quartile. Finally, dropouts who had never had children or were expecting at the time of their first dropout event were more likely to complete high school than those who had children more than nine months after dropping out.

Although dropouts who had completed high school diplomas and GEDs exhibited several similar tendencies, they were not entirely alike. Dropouts who had completed diplomas were more likely to have dropped out later in high school (i.e., in 11th or 12th grade) than other dropouts, whereas dropouts with GEDs were more likely to have dropped out in 9th grade. Also, although high test scores were more prevalent among both diploma and GED earners, grade averages of C's or better were more common only among dropouts who had completed diplomas. Closer examination revealed that even though dropouts who had earned GEDs may have scored in the high or middle test quartile, their grades were less likely to reflect the level of their test scores than those who had completed a diploma.

In 1994, with secondary education over for all but the 24 percent of dropouts who were still trying to finish their diploma or GED and a fraction of stayouts who may decide to return to high school, most dropouts were working, looking for work, or keeping house. Approximately 26

percent of dropouts, however, most of whom had completed high school, had obtained some postsecondary education.

Although 1988 eighth graders who dropped out tended to have different employment characteristics than those who had not, those who did not drop out and were not enrolled in a postsecondary degree program were different in only some respects from their dropout counterparts. Most notably, those who did not drop out were less likely than dropouts to have been unemployed in 1993. With regards to hours worked, income, and most types of occupation, the groups were indistinguishable.

Based on the data reported here, there is not enough evidence to conclude that method of high school completion is associated with economic returns in the labor market after approximately two years out of school. This analysis would tend to support the assertions of King and other labor economists that the long-term impact of their educationl investment cannot be determined at such an early date. Perhaps the economic returns of a diploma versus a GED is for dropouts who complete high school is an issue that should be revisited if further follow-ups to the NELS survey are conducted.

Regardless of how one completes high school, years of education obtained has an impact on the long-term earnings potential of youth in the labor market. And for dropouts who do not continue their high school education, postsecondary opportunities are limited. Though high school completion enables dropouts to continue their education, a possibility many have thought about, a minority had done so as of 1994. Although table 16 reveals that 26 percent of dropouts expected their formal education to stop at high school, figure 7a demonstrates that among dropouts, about one in four attended postsecondary education by 1994. Furthermore, 11 percent of dropouts enrolled in a degree program, even though 34 percent expected to complete a bachelor's or advanced degree (figure 7a and table 16).

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APPENDIX A—GLOSSARY

This glossary describes the variables used in this report. The items were taken directly from the National Education Longitudinal Study (NELS:88/94) Data Analysis System (DAS) (see appendix B for a description of the DAS). The year following each variable label in the glossary is the follow-up survey year when the item was collected or year updated. (Some demographic items such as race–ethnicity were verified in each follow-up.) The variables used in this analysis were either items taken directly from the NELS surveys or derived by combining one or more items in these surveys.

The variables listed in the index below are in the order they appear in the report; the glossary is in alphabetical order by DAS variable name (displayed along the right-hand column).

GLOSSARY INDEX

HAD CONVERSATION ABOUT CONTINUING SCHOOL

Talked with respondent about continuing school—Parents F2D39A
Talked with respondent about continuing school—Sibling F2D39B
Talked with respondent about continuing school—Teacher F2D39C
Talked with respondent about continuing school—Principal F2D39D
Talked with respondent about continuing school—Counselor F2D39E
Talked with respondent about continuing school—Peer F2D39F
Talked with respondent about continuing school—Other relative F2D39G
Talked with respondent about continuing school—Clergy F2D39H
Talked with respondent about continuing school—Social worker F2D39I
Talked with respondent about continuing school—Adult friend F2D39J

INTERVENTIONS

Alternative school/GED INTER1
Counselor/social worker INTER2
Youth center/outreach program INTER3
Family counseling INTER4
Drug rehabilitation INTER5
Alcohol rehabilitation INTER6

CURRENT ACTIVITIES

Working full- or part-time 1994 ..... ACTST1
Vocational/technical courses at any school 1994 ..... ACTST2
Academic courses at 2- or 4-year college 1994 ..... ACTST3
Apprenticeship/government training 1994 ..... ACTST4
Active duty in armed forces 1994 ..... ACTST5
Keeping house (full-time homemaker) 1994 ..... ACTST6
Temporary layoff/waiting to report 1994 ..... ACTST7
Looking for work 1994 ..... ACTST8

EMPLOYMENT

Months unemployed 1993 ..... UNEMPL93
Average hours worked per week 1993 ..... HRSWORK2
Like to work more hours 1993 ..... LIKEWRK2
Occupation of longest held job 1993 ..... OCCCODE2
Total earnings 1993 ..... TOTLEAR2

POSTSECONDARY EDUCATION

Highest PSE level attained 1994 ..... F3PSEATN
Highest level of education expected 1994 ..... EDEXPECT
Number of friends who plan to attend a 4-year college 1992 ..... F2FRCOLL

Current activities

Current activities of dropouts in February 1994. Both students and dropouts were asked to respond yes or no as many times was applicable to the following question: "Now, please think back to the middle of February 1994. At that time were you..."

"Working for pay at a full-time or part-time job"	**ACTST1**
"Taking vocational or technical courses at any kind of school or college"	**ACTST2**
"Taking academic courses at a two- or four-year college"	**ACTST3**
"Serving in an apprenticeship program or government training program"	**ACTST4**
"Serving on active duty in the armed forces"	**ACTST5**
"Keeping house (that is, a full-time homemaker)"	**ACTST6**
"Holding a job but on temporary layoff from work or waiting to report to work"	**ACTST7**
"Looking for work"	**ACTST8**

Parents' educational expectations 1988 **BYP76**

This variable, drawn from the parent questionnaire, asked of the parents in 1988 how far in school they expected their eighth grader to go.

High school or less	Parents expected their eighth grader to complete or drop out of high school.
Some postsecondary education	Parents expected their eighth grader to attain some postsecondary education (trade school, some college, or a 2-year degree).
Bachelor's or higher	Parents expected their eighth grader to attain a bachelor's or advanced degree.

Student's educational expectations 1988 **BYPSEPLN**

This variable characterizes the postsecondary school plans of the student. The variable asked of the students in 1988: "as things stand now, how far in school do you think you will get?"

High school or less	Expected not to complete high school or to obtain a high school diploma.
Some postsecondary education	Expected to attain some postsecondary education (attend vocational or business school, take some college courses).
Bachelor's or higher	Expected to complete a bachelor's or advanced degree.

Socioeconomic status 1988 **BYSES**

This variable represents a composite measure of socioeconomic status, constructed using the following parent questionnaire data:

Father's education level
Mother's education level
Father's occupation
Mother's occupation
Family income

For cases where all parent data components were missing (8.1 percent of the participants), student data were used to compute the socioeconomic status centile. The first four components from the student data are the same as the components used from parent data (i.e., father's education level, mother's education level, father's occupation, and mother's occupation). The fifth component for BYSES from the student data consisted of summing the non-missing household items (after recoding "Not Have Item" from "2" to "0"), calculating a simple mean of these items, and then standardizing this mean. The variable was aggregated to quartiles for this analysis.

Low quartile	Socioeconomic status fell below the 25th percentile.
Middle quartiles	Socioeconomic status fell between the 25th percentile and the 75th percentile.
High quartile	Socioeconomic status fell at or above the 75th percentile.

Composite test quartile 1988 **BY2XQURT**

Student's eighth grade reading and math test score composite, standardized, then broken into quartiles.

Low quartile	Scores were in the bottom 25 percent.
Middle quartiles	Scores were in the middle 50 percent.
High quartile	Scores were in the top 25 percent.

Timing of childbearing in relation to dropping out **DO_KID**

Compares the timing of the 1988 eighth grader's first dropout event (FIRSTD) with the birthdate of the dropout's first child.

Never had kids	Dropout never had a child.
Had first child at any time up to 9 months after dropping out	Dropout's first child was born less than 10 months after dropping out (i.e., dropout was expecting a child at time of first dropout event).
Had first child at any time after 9 months after dropping out	Dropout's first child was born more than 9 months after first dropping out.

Number of credits when first dropped out **DROPCRED**

Number of credits earned in each semester was derived from the transcript course file. Then date of first dropout event (FIRSTD) was matched to a corresponding semester, and the total number of high school credits earned before dropping out was assessed.

5 or less	Completed 5 credits or less before dropping out.
5.01 to 10	Completed more than 5 but no more than 10 credits before dropping out.
10.01 to 15	Completed more than 10 but no more than 15 credits before dropping out.
More than 15	Completed more than 15 credits before dropping out.

Highest level of education expected 1994 **EDEXPECT**

This variable asked in 1994: "what is the highest level of education you ever expect to complete?"

Some high school	Respondent did not expect to complete high school.
High school diploma	Respondent expected to finish high school or earn an alternative credential.
Trade school	Respondent expected to attend vocational, trade, or business school after completing high school.
Some college	Respondent expected to attend some college or complete an associate's degree.
Bachelor's degree	Respondent expected to complete a 4-year college program and earn a bachelor's degree.
Advanced degree	Respondent expected to earn a master's degree, Ph.D., M.D., L.L.B., J.D., D.D.S., or equivalent.

Date of first dropout event **FIRSTD**

Date of first dropout event was determined using both transcript and self-report data. If transcript data were not available, the date was taken from the first follow-up survey. If no date was available in the first follow-up, it was taken from the second.

9th grade or earlier	First dropped out between time of base survey data collection in 1988 and before June 1989.
10th grade	First dropped out between June 1989 and before June 1990.
11th grade	First dropped out between June 1990 and before June 1991.
12th grade	First dropped out during or after June 1991.

Reasons for dropping out—individual

This variable is based on dropouts' responses to the question "Here are some reasons other people have given for leaving school. Which of these would you say applied to you?" Unless otherwise noted, the variable was asked in both the first follow-up and the second follow-up surveys. Anyone responding positively to each reason in the first follow-up was coded "yes." If the dropout recorded a non-yes response in the first follow-up survey, the second follow-up survey was looked at, and additional "yes" answers were appended accordingly.

"I had to get a job," "I found a job," or "I got a job"	**FIRSTR1**
"I didn't like school"	**FIRSTR2**
"I couldn't get along with teachers"	**FIRSTR3**
"I couldn't get along with other students"	**FIRSTR4**
"I wanted to have a family"	**FIRSTR5**
"I was pregnant"	**FIRSTR6**
"I became the father/mother of a baby"	**FIRSTR7**
"I had to support my family"	**FIRSTR8**
"I was suspended too often" or "I was suspended from school"	**FIRSTR9**
"I didn't feel safe at school"	**FIRSTR10**
"I wanted to travel"	**FIRSTR11**
"My friends had dropped out of school"	**FIRSTR12**
"I had to care for a family member"	**FIRSTR13**
"I was expelled from school"	**FIRSTR14**
"I felt I didn't belong at school"	**FIRSTR15**
"I couldn't keep up with my schoolwork"	**FIRSTR16**
"I was failing school"	**FIRSTR17**
"I got married or planned to get married"	**FIRSTR18**
"I changed schools and didn't like my new school"	**FIRSTR19**
"I couldn't work and go to school at the same time"	**FIRSTR20**
"I had a drug or alcohol problem"	**FIRSTR21**

Talked with respondent about continuing school 1992

Asked in the dropout supplement questionnaire of the NELS second follow-up survey (1992), this variable asked of dropouts: "Have any of the following people talked to you about continuing your education?" Those who responded that each type of person had spoken to them were coded as a "yes" response.

Parents	**F2D39A**
Sibling	**F2D39B**
Teacher	**F2D39C**
Principal	**F2D39D**
Counselor	**F2D39E**
Peer	**F2D39F**
Other relative	**F2D39G**
Clergy	**F2D39H**
Social worker	**F2D39I**
Adult friend	**F2D39J**

Number of friends who plan to attend a 4-year college 1992 **F2FRCOLL**

Based on an item from the 1992 survey, which asked of all students: "How many of your friends plan to attend a 4-year college?"

None	None of student's friends planned to attend 4-year college.
Few to some	Few to some friends planned to attend 4-year college.
Most to all	Most or all of student's friends planned to attend 4-year college.

Completion status 1994 **F3DIPLOM**

This variable assesses the completion status of all students, distinguishing between various groups of dropouts. If completion status information was collected for a sample member in 1994, the 1994 data were used, otherwise the variable uses 1992 transcript data. If the 1992 transcript variable indicated that the sample member had received a diploma, GED, or certificate, this question was not asked of CATI respondents directly. If 1992 transcript data were not available for a sample member, and the 1992 data indicated the sample member was an early graduate, then the case was treated as a diploma-earning graduate. In order to discuss the effects associated with both whether a student completing high school and how they completed high school, the variable was aggregated in two ways in each table:

Completed	Student completed a high school diploma, GED, or alternative high school credential.
Did not complete	Student had not completed a high school diploma, GED, or alternative high school credential. Includes those who were working on a diploma or GED.

Once it was established whether a dropout had completed high school, the variable was disaggregated to reflect current high school status, determining if status of completion was further associated with dropout characteristics:

High school diploma	Student completed a high school diploma.
GED or certificate	Student completed a GED or other equivalency certificate.
Working on diploma/GED	Student was working on a diploma or GED.
Stayout	Student had not completed high school and was not pursuing a diploma or alternative credential.

Ever dropped out **F3EVDST**

This variable indicates whether the sample members ever dropped out of high school, regardless of whether they ever returned. If information concerning this status was collected in 1994 for a sample member, it was used. Else, the two relevant 1992 variables (from the transcript data and non-transcript sources) were checked. If either indicated that the sample member ever dropped out, then the variable indicated the student had dropped out of high school. This report uses F3EVDST to subset 1988 eighth graders who dropped out at least once.

Highest PSE level attained 1994 **F3PSEATN**

This variable is based on highest postsecondary education attained, as reported by the respondent in the 1994 NELS Third Follow-up Survey.

No postsecondary education	Student had not attended any postsecondary education.
Enrolled in or completed a degree program	Student was working toward or had earned a 2- or 4-year degree.
Enrolled in or completed a certificate program	Student was working toward or had earned a certificate or license.
Other enrollment	Student had attained some other form of postsecondary education.

Race–ethnicity **F3RACE**

Based on the 1992 value unless it was missing or incorrect. In addition, if it became apparent from responses to other questions that the preloaded value was incorrect, the value was corrected in 1994. Sample members with the value of "Other" were assigned the value -1 (missing).

Asian/Pacific Islander	A person having origins in any of the peoples of the Far East, Southeast Asia, the Indian subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India, and Vietnam.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
Black, non-Hispanic	A person having origins in any of the black racial groups of Africa, not of Hispanic origin.
White, non-Hispanic	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).
American Indian/Alaskan Native	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

Gender **F3SEX**

Male

Female

Grade point average (high school transcripts) **GPA**

This variable is the overall grade point average for all courses taken for a grade.

A and B average	Student's GPA was 2.76 or more.
C average	Student's GPA was between 1.76 and 2.75.
D and F average	Student's GPA was 1.75 or less.

Average hours worked per week 1993 **HRSWORK2**

This variable asked of all students, on average, how many hours per week did(do) you work at the job you held (longest, in 1993) during the period January 1993 through December 1993?

1 to 10
11 to 20
21 to 30
31 to 40
More than 40

Intervention

This variable is based on dropouts' yes or no responses to the question "In the past 2 years, did any of the following things happen to you?" This question was asked in the dropout supplement questionnaires in the first follow-up survey in 1990 and again in the second follow-up survey in 1992. Dropouts who answered the question in 1992 were included if there was no response to the question in 1990.

"I looked into an alternative school or getting a GED"	**INTER1**
"I saw a counselor or social worker"	**INTER2**
"I went to a youth center or outreach program"	**INTER3**
"I went to family counseling"	**INTER4**
"I was in a drug rehabilitation program"	**INTER5**
"I was in an alcohol rehabilitation program"	**INTER6**

Like to work more hours 1993 **LIKEWRK2**

This yes or no variable refers to the job held the longest in 1993, and asks only of those who were not working full-time: "Would you (have) like(d) to work more hours per week at (job) during this reference period?"

Occupation of longest held job 1993 **OCCCODE2**

This variable asked respondents to describe their job or occupation at the job they held longest in 1993.

Clerical	Includes such occupations as: secretary, typist, file clerk, word processor, receptionist, bookkeeper, bank teller, ticket agent, mail carrier, meter reader, dispatcher, shipping & receiving, telephone operator, messenger, library clerk, office machine operator.

Craftsman/skilled operative/technical	Includes such occupations as: baker, auto mechanic, machinist, plumber, roofer, brick mason, electrician, carpet installer, tile setter, telephone installer, house painter, other specified mechanics, truck driver, assembler, machine operator, welder, inspectors, bus driver, chauffeur, forklift operator, sewing machine operator, train engineer, printing press operator, computer programmer, computer tech, systems analyst, draftsman, medical/dental tech, lab tech, air traffic controller, pilot, and broadcast equipment operator.
Farmer	Includes such occupations as: farmer, farm manager, or sharecropper.
Laborer	Includes such occupations as: construction worker unspecified, handyman, loader, farm laborer, sanitary worker, stevedore, machine cleaner, gas station attendant, bagger, tradesmen's helper, stock handler.
Manager/administrator	Includes such occupations as: sales manager, buyer, purchasing agent, government administrator (local, state, federal levels), store manager, restaurant or hotel manager, manufacturing line supervisor.
Military/protective service	Includes such occupations as: career officer, enlisted personnel, detective, security guard, FBI agent, prison guard, policeman, fireman.
Professional/school teacher	Includes such occupations as: actor, artist, musician, athelete, writer, photographer, disc jockey, publicist, designer, editor, RN, social worker, engineer, physician, lawyer, paralegal, clergyman, scientist, college professor, other postsecondary teacher, accountant, psychologist, elementary or secondary school teacher.
Business owner	Includes such occupations as: proprietor or owner of a store, restaurant, or hotel, or a construction contractor.
Sales	Includes such occupations as: salesperson, ad or insurance agent, cashier, real estate broker, counter help.
Service	Includes such occupations as: beautician, barber, waiter/waitress, maid, cook, janitor, nurse's aide, orderly, exterminator, flight attendant, kitchen help.

Reasons for dropping out—categorical

This variable is based on dropouts' responses to the question "Here are some reasons other people have given for leaving school. Which of these would you say applied to you?" Unless otherwise noted, the variable was asked in both the first follow-up and the second follow-up surveys. Anyone responding positively to each reason in the first follow-up was coded "yes." If the dropout recorded a non-yes response in the first follow-up survey, the second follow-up survey was looked at, and additional "yes" answers were appended accordingly. Variables were then combined into categories: family, job, and school reasons.

REASFAM	Any family reason. Includes: I wanted to have a family; I was pregnant; I had became the father/mother of a baby; I had to support my family; I had to care for a family member; and I got married or planned to get married.
REASJOB	Any job reason. Includes: I got a job; and I couldn't work and go to school at the same time.
REASSCHL	Any school reason. Includes: I didn't like school; I couldn't get along with teachers; I couldn't get along with other students; I was suspended from school; I didn't feel safe at school; I was expelled from school; I felt I didn't belong at school; I couldn't keep up with my school work; I was failing school; and I changed schools and didn't like my new school.

Total earnings 1993 **TOTLEAR2**

This variable asked of the student the following question: "What were your total earnings from the [number of jobs held] job(s) you had during the period from January 1993 through December 1993?"

$2,000 or less
$2,001 to $4,000
$4,001 to $6,000
$6,001 to $10,000
More than $10,000

Months unemployed in 1993 **UNEMPL93**

Total number of months the sample member reported being unemployed in 1993. For this variable, "unemployed" includes "unemployed and receiving unemployment compensation" and "unemployed and not receiving compensation." It does not include months where the sample member reported being out of the labor force.

None
1 to 3
3 to 6
More than 6 months

APPENDIX B—TECHNICAL NOTES AND METHODOLOGY

THE NATIONAL EDUCATIONAL LONGITUDINAL STUDY OF 1988

The National Education Longitudinal Study of 1988 (NELS:88) is a survey that began with a nationally representative sample of 1988 eighth graders and followed them every two years. The most recent follow-up survey occurred in 1994. Respondents' teachers and schools were also surveyed in 1988, 1990, and 1992, while parents were surveyed in 1988 and 1992. In contrast to previous longitudinal studies, NELS:88 began with eighth graders in order to collect data regarding the transition from elementary to secondary education. The first follow-up in 1990 provided the data necessary to understand the transition. Dropouts were administered a special survey to understand the dropout process more thoroughly. For the purpose of providing a comparison group to 1980 sophomores surveyed in High School and Beyond, the NELS:88 sample was also "freshened" with new participants who were tenth graders in 1990.

In spring of 1992, when most of the NELS:88 sample were twelfth graders, the second follow-up took place. This survey focused on the transition from high school to the labor force and postsecondary education. The sample was also "freshened" in order to create a representative sample of 1992 seniors for the purpose of conducting trend analyses with the 1972 and 1982 senior classes (National Longitudinal Study of 1972 and High School and Beyond). Students identified as dropouts in the first follow-up were also resurveyed in 1992. In spring of 1994, the third follow-up was administered. Sample members were questioned about their labor force and postsecondary experiences, and family formation. For more information about the NELS:88 survey, consult the NELS:88/94 Methodology Report.[36]

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

[36]U.S. Department of Education, National Center for Education Statistics, *National Education Longitudinal Study (NELS:88/94) Methodology Report*, NCES 96-174 (Washington D.C.: 1996).

errors occur not only in sample surveys but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

Data Analysis System

The estimates presented in this report were produced using the NELS:88/94 Data Analysis System (DAS). The DAS software makes it possible for users to specify and generate their own tables from the NELS:88/94 data. With the DAS, users can replicate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors and weighted sample sizes for these estimates. For example, table B1 presents the standard errors that correspond to table 1 in the text. If the number of valid cases is too small to produce a reliable estimate (less than 30 cases), the DAS prints the message "low-N" instead of the estimate.[37]

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Included in the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the NELS:88 stratified sampling method. (See discussion under "Statistical Procedures" below for the adjustment procedure.)

For more information about the NELS:88/94 and other Data Analysis Systems, consult the NCES DAS Website (**WWW.PEDAR-DAS.org**) or contact:

Aurora D'Amico
NCES Data Development and Longitudinal Studies Group
555 New Jersey Avenue, NW
Washington, DC 20208-5652
(202) 219-1365
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[37]The NELS:88/94 sample is not a simple random sample and, therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table B1—Standard errors for report table 1: of 1988 eighth graders who dropped out, percentage distribution according to 1994 high school completion status, by selected student characteristics

	Completed			Did not complete		
	Total	High school diploma	GED or certificate*	Total	Working toward diploma or GED	Stayout
Total	1.87	1.26	1.83	1.87	1.36	1.92
Gender						
Male	2.62	1.49	2.46	2.62	1.87	2.93
Female	2.66	1.95	2.61	2.66	1.97	2.19
Race–ethnicity						
Asian/Pacific Islander	8.29	6.54	4.21	8.29	7.89	12.81
Hispanic	3.19	2.13	2.73	3.19	3.05	3.50
Black, non-Hispanic	5.39	3.71	5.52	5.39	3.90	5.05
White, non-Hispanic	2.24	1.46	2.09	2.24	1.63	2.27
American Indian/Alaskan Native	8.97	3.50	10.22	8.97	5.46	11.28
Socioeconomic status 1988						
Low quartile	2.31	1.77	1.87	2.31	2.24	2.75
Middle quartiles	2.70	1.81	2.62	2.70	1.93	2.67
High quartile	5.19	5.02	7.69	5.19	4.37	2.97
Composite test quartile 1988						
Low quartile	2.35	1.68	2.06	2.35	2.10	2.54
Middle quartiles	3.10	2.15	2.96	3.10	2.01	3.20
High quartile	3.40	3.93	5.13	3.40	2.62	2.00
Grade point average (high school transcripts)						
A or B average	10.93	6.82	6.54	10.93	6.98	12.87
C average	2.45	2.42	1.93	2.45	2.01	2.23
D or F average	3.09	1.44	2.77	3.09	2.50	3.98
Student's educational expectations 1988						
High school or less	3.51	1.53	3.69	3.51	2.55	3.19
Some postsecondary education	3.05	2.15	2.82	3.05	2.59	2.67
Bachelor's degree or higher	3.31	2.32	3.03	3.31	2.15	3.61
Parents' educational expectations 1988						
High school or less	3.65	1.65	3.49	3.65	2.79	4.09
Some postsecondary education	3.21	1.86	3.28	3.21	2.75	2.76
Bachelor's degree or higher	3.24	2.60	3.09	3.24	2.06	3.21

*GED refers to General Education Development exam.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988, Third Follow-up Survey 1994, Data Analysis System.

STATISTICAL PROCEDURES

Two types of statistical procedures were employed in this report: testing differences between means, and adjustment of means after controlling for covariation among a group of variables. Each procedure is described below.

Differences Between Means

The descriptive comparisons were tested in this report using Student's t statistic. Differences between estimates are tested against the probability of a Type I error, or significance level. The significance levels were determined by calculating the Student's t values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

Student's t values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \tag{1}$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent a covariance term must be added to the formula. If the comparison is between the mean of a subgroup and the mean of the total group, the following formula is used:

$$\frac{E_{sub} - E_{tot}}{\sqrt{se_{sub}^2 + se_{tot}^2 - 2p\ se_{sub}^2}} \tag{2}$$

where p is the proportion of the total group contained in the subgroup.[38]

When comparing two percentages from a distribution that adds to 100 percent, the following formula is used:

$$\frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2rse_1se_2}} \tag{3}$$

[38]U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician,* No. 2, 1993.

where r is the correlation between the two estimates.[39] The estimates, standard errors, and correlations can all be obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading, since the magnitude of the t statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large t statistic.

A second hazard in reporting statistical tests for each comparison occurs when making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together.

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of k tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that for k comparisons within a family of possible comparisons, the significance level for all the comparisons will sum to $p \leq .05$.[40]

For example, in a comparison of the percentages of students at risk to those not at risk who enrolled in postsecondary education only one comparison is possible (at-risk versus not-at-risk students). In this family, k=1, and the comparison can be evaluated without adjusting the significance level. When students are divided into five racial-ethnic groups and all possible comparisons are made, then k=10 and the significance level of each test must be $p \leq .05/10$, or $p \leq .005$. The formula for calculating family size (k) is as follows:

$$k = \frac{j(j-1)}{2} \qquad (4)$$

[39]Ibid.

[40]The standard that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the t statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56 (1961): 52–64.

where j is the number of categories for the variable being tested. In the case of race-ethnicity, there are five racial-ethnic groups (American Indian, Asian/Pacific Islander, black non-Hispanic, Hispanic, and white non-Hispanic), so substituting 5 for j in equation 4,

$$k = \frac{5(5-1)}{2} = 10$$

Adjustment of Means to Control for Background Variation

Tabular results are limited by sample size when attempting to control for additional factors that may account for the variation observed between two variables. For example, when examining the percentages of those who completed a degree, it is impossible to know to what extent the observed variation is due to socioeconomic status (SES) differences and to what extent it is due to differences in other factors related to SES, such as type of institution attended, intensity of enrollment, and so on. However, if a nested table were produced showing SES within type of institution attended, within enrollment intensity, the cell sizes would be too small to identify the patterns. When the sample size becomes too small to support controls for another level of variation, one must use other methods to take such variation into account.

To overcome this difficulty, multiple linear regression was used to obtain means that were adjusted for covariation among a list of control variables.[41] Adjusted means for subgroups were obtained by regressing the dependent variable on a set of descriptive variables such as parents' education, students' academic preparation, students' educational aspirations, etc. Substituting ones or zeros for the subgroup characteristic(s) of interest and the mean proportions for the other variables results in an estimate of the adjusted proportion for the specified subgroup, holding all other variables constant. For example, consider a hypothetical case in which two variables, race-ethnicity and income, are used to describe an outcome, Y (such as attending a four-year college). The variables race-ethnicity and family income are recoded into a dummy variable representing race-ethnicity and a dummy variable representing family income:

[41]For more information about weighted least squares regression, see Michael S. Lewis-Beck, *Applied Regression: An Introduction,* Vol. 22 (Beverly Hills, CA: Sage Publications, Inc., 1980); William D. Berry and Stanley Feldman, *Multiple Regression in Practice,* Vol. 50 (Beverly Hills, CA: Sage Publications, Inc., 1987).

Race–ethnicity	*R*
Black students	1
Non-black students	0
and	
Family income	*F*
Low income	1
Not low-income	0

The following regression equation is then estimated from the correlation matrix output from the DAS:

$$\hat{Y} = a + b_1 R + b_2 F \qquad (5)$$

To estimate the adjusted mean for any subgroup evaluated at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the mean for the dummy variable(s) representing all other subgroups. For example, suppose we had a case where Y was being described by race-ethnicity (*R*) and family income (*F*), coded as shown above, and the means for *R* and *F* are as follows:

Variable	Mean
R	0.109
F	0.282

Suppose the regression equation results in:

$$\hat{Y} = 0.51 + (0.032)R + (-0.21)F$$

To estimate the adjusted value for black students, one substitutes the appropriate parameter values into equation 5.

Variable	Parameter	Value
a	0.510	—
R	0.032	1.000
F	-0.210	0.282

This results in:

$$\hat{Y} = 0.51 + (0.032)(1) + (-0.21)(0.282) = 0.48$$

In this case the probability of attending a 4-year college for black students is 0.48 and represents the expected outcome for black students who look like the average student across the other variables (in this example, family income). In other words, the adjusted percentage who enrolled in a four-year college is 48 percent (0.48 x 100 for conversion to a percentage).

It is relatively straightforward to produce a multivariate model using the DAS, since one of the DAS output options is a correlation matrix, computed using pair-wise missing values.[42] This matrix can be used by most statistical software packages as the input data for least-squares regression. That is the approach used for this report, with an additional adjustment to incorporate the complex sample design into the statistical significance tests of the parameter estimates (described below). For tabular presentation, parameter estimates and standard errors were multiplied by 100 to match the scale used for reporting unadjusted and adjusted percentages.

Most statistical software packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for the NELS:88/94 survey, this assumption is incorrect. A better approximation of their standard errors is to multiply each standard error by the average design effect of the independent variable (DEFT), where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. It is calculated by the DAS and produced with the correlation matrix.[43]

[42]Although the DAS simplifies the process of making regression models, it also limits the range of models. Analysts who wish to use other than pairwise treatment of missing values or to estimate probit/logit models (which are the most appropriate for models with categorical dependent variables) can apply for a restricted data license from NCES. See John H. Aldrich and Forrest D. Nelson, 1984, *Linear Probability, Logit and Probit Models* (Quantitative Applications in the Social Sciences, Vol. 45) Beverly Hills, CA: Sage University Press.

[43]The adjustment procedure and its limitations are described in C.J. Skinner, D. Holt, and T.M.F. Smith, eds., *Analysis of Complex Surveys* (New York: John Wiley & Sons, 1989).

ANOVA Testing

In this report, ANOVA testing was used to determine the relationship of grade point average and composite test scores by diploma status (table 2 and figure 2). Below is the output table of the analysis of these variables:

Table B2—Results of an analysis of variance used in report table 2 and report figure 2: of 1988 eighth graders who dropped out and later completed high school, 1994 cumulative grade point average, by 1988 composite test scores

	Degrees of freedom	Sum of squares	Mean squares	F
Diploma status	1	38,308	38,308	732
Composite test quartile 1988	2	149,287	74,644	1,426
Test scores * Diploma status	2	4,967	2,483	47
Error	~12,000	634,385	52	

critical value F(1,*)=3.84
critical value F(2,*)=3.00

The Analysis of Variance was computed in the following manner. Using the squares of the Taylorized standard errors, the variance between the means themselves and the unweighted sample sizes, total variance was used to partition total sums of squares into within and between sums of squares. These were used to create mean squares for the within and between variance components and the corresponding F tests. The means and standard errors were calculated directly from the DAS. The unweighted sample sizes were not available within the DAS and were provided to MPR by NCES.

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