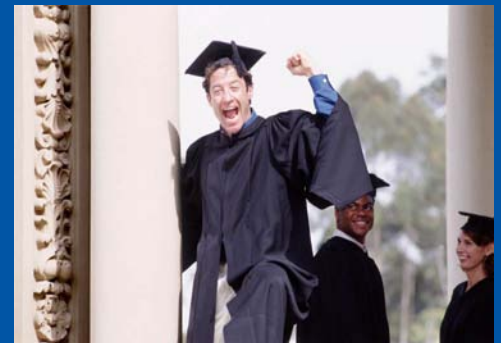


# Comparisons Across Time of the Outcomes of Youth With Disabilities up to 4 Years After High School

A Report of Findings From the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2)



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September 2010

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## Executive Summary

In an effort to document the secondary school experiences and postsecondary outcomes of students with disabilities over the last two decades, the U.S. Department of Education (ED) sponsored two longitudinal research studies 15 years apart. The first study, the National Longitudinal Transition Study (NLTS) generated nationally representative information about secondary-school-age youth who were receiving special education services in 1985. To assess the status of youth with disabilities in the early 21st century, ED commissioned the National Longitudinal Transition Study-2 (NLTS2) to generate nationally representative information about secondary-school-age youth who were receiving special education services in 2000. NLTS2 addresses many of the same issues as NLTS, but extends its scope.

The tremendous range and scale of changes in American society and its economy that occurred in the years between NLTS and NLTS2 are reflected in many aspects of our lives. Increasing diversity in our population and family structures, innovations in communication and information technologies, and the globalization of the economy are only a few of the many trends that have had far-reaching impacts on all of us. Other changes particularly affect students, such as the growing emphasis on the use of “high stakes” tests in holding schools accountable for the academic performance of their students and the growing number of “school choice” options available to parents.

Dramatic changes in special education policy and practice also have been noted in the 25 years after the passage of Public Law 94-142, now known as the Individuals with Disabilities Education Act (IDEA), including increased access to public education, inclusion in general education classrooms, participation in standardized testing, and high school graduation rates (American Youth Policy Forum and the Center on Education Policy 2002). Other factors particularly relevant to transition-age youth with disabilities include amendments to IDEA and to vocational education and employment legislation that have shaped state-level transition policies, increased funding for vocational services for students with disabilities, removed obstacles to employment, and required states to monitor and report on the status of youth with disabilities after exiting high school (Lehman et al. 2002; National Council on Disability 2000). It is timely to consider the changes in the characteristics, experiences, and outcomes of transition-age youth with disabilities that have been contemporaneous with the demographic, social, economic, and education policy changes in our country in the years between NLTS and NLTS2.

Specifically, this report addresses the following questions:

- *What cohort differences and similarities are apparent between youth with disabilities out of high school up to 4 years who are represented in NLTS and in NLTS2 in the domains of postsecondary education, employment, engagement in either postsecondary education or employment, household circumstances (i.e., residential independence, marital status, and financial independence), and community integration (i.e., community participation and criminal justice system involvement)?* These domains mirror the purpose of IDEA: to “prepare them [children with disabilities] for future education, employment, and independent living” (20 U.S.C. 1400(d)(1)(A) (IDEA)).

- *How do cohort differences in the post-high school outcomes of youth with disabilities compare with those of youth in the general population?* Reports from NLTS and NLTS2 have compared findings for youth with disabilities with youth in the general population to the extent data permit, revealing significant differences on many factors, yet some similarities (see, for example, Newman et al 2009; Wagner et al. 1991). It is a natural extension of that research agenda to examine cohort similarities and differences over time.
- *Do youth with disabilities who differ in their primary disability, gender, race/ethnicity,<sup>1</sup> household income, high school completion status, or years since leaving high school have different patterns of differences and similarities when youth represented in NLTS and NLTS2 are compared?* These subgroups are examined because research findings generated from both studies have demonstrated that youth with disabilities who differ in these ways have markedly different experiences and outcomes (see, for example, Blackorby and Wagner 1996; Newman et al. 2009; Wagner et al. 1991; Wagner, Newman, Cameto, Levine, and Marder 2003).

To address these questions, this report focuses on the subset of youth represented in NLTS and NLTS2 who had been out of high school up to 4 years. NLTS was a 6-year-long study of youth with disabilities who were in grade 7 or above and ages 13 through 21 in the 1983–84 school year. NLTS2 is a 10-year-long study of the characteristics, experiences, and outcomes of a nationally representative sample of youth with disabilities who were 13 to 16 years old and receiving special education services in grade 7 or above on December 1, 2000. Findings from both studies are intended to generalize to youth with disabilities nationally and to youth in each of the federal special education disability categories in use for students in the NLTS or NLTS2 age range at the time of each study. NLTS2 was designed to collect data on sample members from multiple sources in five waves, beginning in 2001 and ending in 2009. NLTS also collected data from several sources, however, in two rather than five waves, beginning in 1985 and ending in 1990.

Multiple data sources were used in this report to describe the differences in post-high school experiences of youth with disabilities. The primary NLTS source was the Wave 2 parent/youth telephone interview and mail survey, conducted in 1990. For NLTS2, the primary source was the Wave 3 parent/youth telephone interview and mail survey, conducted in 2005. In addition, constructed variables that describe youth’s experiences since leaving high school incorporated data from the NLTS Wave 1 parent interview (conducted in 1987) and the NLTS2 Wave 2 parent/youth telephone interview and mail survey (conducted in 2003) for youth who were out of high school in 1987 or 2003. School district rosters in both studies and the NLTS2 Wave 1 parent interview or mail survey also provided a small amount of data used in this report.

For both studies, information on the outcomes of out-of-high-school youth come from youth themselves in the majority of cases, usually from the youth telephone interview. These respondents were youth who were reported by parents to be able to answer questions for themselves by telephone. Youth who were reported to be able to answer questions for themselves, but not by telephone (e.g., youth with hearing impairments) were sent a mail

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<sup>1</sup> Findings are reported for White, African American, and Hispanic youth; other racial/ethnic categories of youth are too small in most cases to report findings for them separately.

questionnaire with a subset of items from the telephone survey. For youth who were reported by parents not to be able to answer questions for themselves (e.g., youth with significant cognitive impairments), interviews were attempted with parents. In NLTS, parents who could not be reached by phone were mailed a questionnaire with a subset of items from the telephone interview; no parent mail survey was conducted in Wave 3 of NLTS2. Thus there are four sources of NLTS data for Wave 2 of NLTS and three sources for Wave 3 of NLTS2.

When similar data items were available, comparisons were made between youth with disabilities and the same-age youth in the general population. Comparison data were taken from the Current Population Survey (CPS), 1990 and 2005. The CPS is a monthly survey of 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The nationally representative sample included in this monthly survey was selected to represent the civilian noninstitutional population in the United States. Comparison data for this report were taken from the October 1990, and October 2005, data collections for youth who were 18 to 21 years old and out of high school. Calculations were made from public use data available at <http://www.census.gov/cps/>, using the Data Ferret Web tool.

Information reported here primarily is drawn from the second wave of parent/youth interviews conducted for NLTS in 1990 (referred to as cohort 1) and the third wave of parent/youth interviews conducted for NLTS2 youth in 2005 (referred to as cohort 2). Analyses include the age group of out-of-high-school youth that was common to the studies at those time points: youth ages 18 through 21. Youth included in this report varied in the length of time they were out of high school, ranging from less than 1 month to 4 years post-high school. This report documents differences in post-high school outcomes for out-of-high-school youth with disabilities as a whole and for youth in the nine disability categories that were in use in both 1987 and 2001, when NLTS and NLTS2 samples were selected.<sup>2</sup> Differences also are described for youth with disabilities who varied in their school-completion status, their length of time since leaving high school, gender, their parents' household income,<sup>3</sup> and their racial/ethnic category.

Comparisons of data from NLTS and NLTS2 document the extent and direction of differences between 1990 and 2005<sup>4</sup> in the post-high school outcomes and experiences of youth

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<sup>2</sup> Analytic adjustments, described in appendix A of the report, were made to account for differences between 1990 and 2005 in disability categories and their composition (i.e., combining the 1990 categories of deaf and hard of hearing into a single category to correspond to the 2005 category of hearing impairment; combining the 2005 category of autism with other health impairment, the category that included most youth with autism in 1990; and assigning youth in the 2005 traumatic brain injury category to a disability category compatible with the disability categories in effect in 1990, based on disability information provided by parents during the telephone interview.

<sup>3</sup> Classifying the income of parents' households in NLTS and NLTS2 relied exclusively on information provided during the parent interview/surveys. Because income was reported in categories instead of specific amounts, it was not possible to adjust NLTS income for inflation to make them equivalent to 2005 dollars, the preferred approach for comparing income groups over time. As an alternative, three income categories were created, each of which encompassed similar proportions of the income distribution in the two studies.

<sup>4</sup> This report examines differences in post-high school experiences of youth with disabilities between 1990 and 2005. Differences exist between NLTS and NLTS2 that have required analytic adjustments to make comparisons between the studies valid. Readers primarily interested in 2005 post-high school outcomes and experiences are referred to the report, *The Post-High School Outcomes of Youth With Disabilities up to 4 Years After High School* (Newman et al. 2009).

with disabilities in their first 4 years out of high school, in several key domains, including the following:

- Postsecondary education, including enrollment and educational experiences in 2-year or 4-year colleges or postsecondary vocational, business, or technical schools.
- Employment rates and job characteristics.
- Overall engagement in the community through participation in school, work, or preparation for work.
- Living arrangements, marital and parental status, and aspects of financial independence.
- Social involvement and community involvement in both positive and negative ways (e.g., participation in organized groups and volunteer activities, and involvement with the criminal justice system).

This executive summary presents all findings related to these key domains that are included in the full report for out-of-high school youth with disabilities as a group as well as all differences between youth who differ in their disability, high-school leaving, and demographic characteristics that are significantly different at at least the  $p < .01$  level.<sup>5</sup>

## Postsecondary Education

Over the past decades, enrollment in postsecondary education has become increasingly prevalent. For youth in the general population, “postsecondary enrollments are at an all-time high” (Ewell and Wellman 2007, p. 2). Ensuring that students with disabilities have “access to and full participation in postsecondary education” has been identified as one of the key challenges in the future of secondary education and transition for such students (National Center on Secondary Education and Transition 2003, p. 1).

- Postsecondary enrollment rates were higher in 2005 than in 1990 for youth with disabilities (within 4 years of leaving high school, 46 percent of youth with disabilities in 2005 were reported ever to have enrolled in a postsecondary school vs. 26 percent in 1990, a 19 percentage-point difference).
- Reported rates of ever having enrolled in postsecondary education were higher in 2005 than in 1990 across all types of postsecondary programs; enrollment evidenced a 19 percentage-point difference in community college (32 percent vs. 14 percent), a 13 percentage-point difference in vocational, business, or technical school (23 percent vs. 10 percent), and a 9 percentage-point difference in 4-year universities (14 percent vs. 5 percent).

## Employment

Employment is a pathway to financial independence and self-reliance for youth with disabilities as they move toward adulthood. Achieving employment is a primary transition goal

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<sup>5</sup> See appendix page A-17 for a description of the formula used to determine statistical significance of differences between the two cohorts. The text mentions only differences that reach a level of significance of at least  $p < .01$ . In addition, percentages reported in the text are rounded. Discrepancies of 1 percent or less between percentages and percentage-point differences are due to rounding.

of the majority of high school students with disabilities (Cameto, Levine, and Wagner 2004). As youth with disabilities enter young adulthood, a goal of finding and keeping a job is important, but equally important is having employment that offers benefits, pays a living wage, and presents opportunities for advancement. Youth with disabilities as a whole did not vary significantly between 1990 and 2005 in their reported employment status (62 percent and 56 percent, respectively), job duration (15 months and 13 months), hours employed per week (38 hours and 35 hours), type of job, average wages (\$9.10 and \$9.00, after adjusting 1990 wages for inflation), or receipt of health insurance from their employer (52 percent and 33 percent).

- At the time of the interview employed youth with disabilities were more likely to receive paid vacation or sick leave in 1990 than 2005 (60 percent vs. 38 percent, 22 percentage-point difference).

### **Engagement in Postsecondary Education or Employment**

Employment and postsecondary school attendance have been the primary focus of research and policies related to transition from high school to early adulthood (e.g., Benz, Doren, and Yovanoff 1998; Johnson et al. 2002; Rusch et al. 1992; Savage 2005; Sitlington, Clark, and Kolstoe 2000; Stodden 2001). This section focuses on differences in the combination and the overlap of these two types of productive engagement in the community—engagement in either employment or postsecondary education, or both between 1990 and 2005.

- Youth with disabilities were more likely to have been reported to be employed and/or attending postsecondary school at the time of the 2005 interview, as compared with the 1990 interview (86 percent vs. 65 percent, 21 percentage-point difference).
- Related to the combination of ways youth with disabilities had been engaged, rates of engaging solely in postsecondary education or in employment did not differ significantly between 1990 and 2005. In contrast, youth with disabilities were 15 percentage-points more likely to be engaged in both activities—school and work—concurrently at the time of the interview in 2005 (21 percent) as compared with 1990 (6 percent).

### **Household Circumstances**

Markers on the path to adult life typically have included financial and residential independence and self-sufficiency, marriage, relationships, and parenting (Hogan and Astone 1986; Modell 1989; Rindfuss 1991). Rates of residential independence, parenting, and marriage did not differ significantly in 2005 compared with 1990 for youth with disabilities as a group.

- Experiences related to financial independence differed significantly. Youth with disabilities who had been out of high school from 1 to 4 years reported higher rates of having had a savings account in 2005 than in 1990 (56 percent vs. 44 percent, a 12 percentage-point difference).
- In 2005, youth with disabilities also were more likely to have a checking account than in 1990 (47 percent vs. 25 percent, a 22 percentage-point difference).



## **Social and Community Involvement**

Living successfully in their communities has long been considered central to youth with disabilities' quality of life (Halpern 1985). An important aspect of whether a youth is living successfully in the community is the “adequacy of his or her social and interpersonal network [which]...is possibly the most important of all” aspects of adjustment for young adults with disabilities (Halpern 1985, p. 480). The participation of youth in organized, extracurricular community groups did not differ between 1990 and 2005. In addition, the rates at which youth with disabilities were reported to have a driver's license were not different between the two cohorts for youth with disabilities overall.

- Reported rates of youth with disabilities participating in volunteer or community service activities were higher in 2005 than in 1990 by 13 percentage points (25 percent vs. 13 percent).
- Youth with disabilities as a group had a higher reported rate of voter registration in 2005 than in 1990 (53 percent vs. 67 percent, 14 percentage-point difference).
- The one negative form of community participation that can be compared between NLTS and NLTS2 is the rate at which youth with disabilities out of high school up to 4 years were reported to have been arrested at some time in their lives. This rate was 11 percentage points higher in 2005 than in 1990 (27 percent vs. 16 percent).

## **Cohort Comparisons of Experiences by Disability Category**

In both studies, information about the nature of youths' disabilities came from rosters of all students in the age ranges included in the studies and receiving special education services in the 1985–86 or 2000–01 school years under the auspices of participating local education agencies (LEAs) and state-supported special schools. Each student was assigned to a disability category on the basis of the primary disability designated by the student's school or district. In 2001 the federal disability categories specified for students differed from those in 1986. There were categories in 2001 that were not in use in 1986, specifically the categories of autism and traumatic brain injury. The categories of deaf and hard of hearing in 1986 were included in the one disability category of hearing impairment in 2001.

Because students with autism were included in the other health impairment category in 1986, comparisons for this report required that the NLTS2 youth with autism (approximately 180 youth) be included in the other health impairment category as well. Youth in the 2001 traumatic brain injury category were assigned to a disability category compatible with the disability categories in effect in 1986, based on disability information provided by parents during the telephone interview. In addition, the two NLTS categories of deaf and hard of hearing were combined to be comparable to the single NLTS2 category of hearing impairment. In both cohorts, students with deaf-blindness were included in the multiple impairments category because there were too few to report separately.

Comparisons across time by disability category are apparent in many of the post-high school outcomes examined in this report.

- Youth in four of nine disability categories experienced significantly higher rates of ever having enrolled in postsecondary programs in 2005 than in 1990, specifically those with

hearing impairments (73 percent vs. 50 percent, 23 percentage-point difference), mental retardation (28 percent vs. 8 percent, 20 percentage-point difference), learning disabilities (48 percent vs. 30 percent, 18 percentage-point difference), and emotional disturbances (35 percent vs. 18 percent, 17 percentage-point difference).

- Youth in five of the nine disability categories experienced significantly higher engagement rates in 2005 than in 1990, specifically those with learning disabilities (91 percent vs. 72 percent, 19 percentage-point difference); hearing (88 percent vs. 58 percent, 30 percentage-point difference), visual (96 percent vs. 62 percent, 34 percentage-point difference), or other health impairments (95 percent vs. 73 percent, 22 percentage-point difference); and multiple disabilities (86 percent vs. 45 percent, 42 percentage-point difference).
- Youth in the hearing impairment (65 percent vs. 43 percent, 22 percentage-point difference), other health impairment/autism (66 percent vs. 37 percent, 29 percentage-point difference), and multiple disabilities/deaf-blindness categories (63 percent vs. 2 percent, 61 percentage-point difference) experienced significantly higher rates of having had a savings account in 2005 than in 1990.
- Youth in seven of the nine disability categories also were more likely to have a checking account in 2005 than in 1990, specifically those with learning disabilities (50 percent vs. 29 percent, 21 percentage-point difference), speech/language impairments (58 percent vs. 26 percent, 32 percentage-point difference), hearing impairments (64 percent vs. 32 percent, 32 percentage-point difference), visual impairments (72 percent vs. 35 percent, 37 percentage-point difference), or orthopedic impairments (56 percent vs. 25 percent, 31 percentage-point difference); other health impairments or autism (59 percent vs. 25 percent, 33 percentage-point difference), or multiple disabilities or deaf/blindness (34 percent vs. 1 percent, 33 percentage-point difference).
- Rates of volunteerism were significantly higher in 2005 than in 1990 for youth with speech/language (35 percent vs. 10 percent, 25 percentage-points) or visual impairments (67 percent vs. 21 percent, 46 percentage-points).
- The likelihood of youth either belonging to an extracurricular community group or volunteering was higher in 2005 than 1990 for youth with visual impairments (76 percent vs. 35 percent, 41 percentage points).
- The rates at which youth with disabilities were reported to have a driver's license was significantly higher in 2005 than 1990 for youth with multiple disabilities or deaf/blindness (36 percent vs. 2 percent, 34 percentage points).
- Significantly higher voter registration rates in 2005 were reported for youth with hearing (76 percent vs. 49 percent, 28 percentage points), visual (81 percent vs. 57 percent, 23 percentage points), or orthopedic impairments (77 percent vs. 45 percent, 32 percentage points); emotional disturbances (69 percent vs. 50 percent, 20 percentage points); or multiple disabilities or deaf-blindness (66 percent vs. 2 percent, 64 percentage points).
- Youth with emotional disturbances evidenced a 25-percentage-point higher rate in 2005 than in 1990 of being reported to have ever been arrested (61 percent vs. 36 percent).

## **Cohort Comparisons of Experiences by Length of Time Out of High School**

Youth included in this report varied in their length of time out of high school, ranging from 1 month or less to 4 years post-high school. Most post-high school experiences did not differ significantly between 1995 and 2005 by the number of years since youth had left high school. The experiences that did differ by length of time out of high school included the following:

- Youth with disabilities who had been out of high school between 2 and 4 years were more likely to have been reported to be engaged in postsecondary education and/or employment at the time of the interview in 2005 than in 1990, a 26 percentage-point difference (90 percent vs. 64 percent).
- Youth with disabilities who had been out of high school for less than 1 year were more likely to have savings (63 percent vs. 40 percent, 23 percentage-point difference) and checking (46 percent vs. 22 percent, 24 percentage-point difference) accounts in 2005 than in 1990.
- In addition, youth with disabilities who had been out of high school from 1 to 2 years were more likely to have a checking account in 2005 than in 1990 (46 percent vs. 26 percent, 20 percentage-point difference).

## **Cohort Comparisons of Experiences by High School Completion Status**

Post-high school outcomes of high school completers (those who graduated, received a certificate of attendance or completion, or who passed a high school exit exam or completed a GED program) were more likely to differ significantly between 1990 and 2005 than were those who left high school without finishing.

- Across the various types of postsecondary programs, high school completers consistently evidenced significantly higher rates of having ever enrolled in postsecondary school in 2005 than in 1990. The rate of ever having enrolled in a postsecondary program for high school completers was 16 percentage points higher in 2005 compared with 1990 (51 percent vs. 34 percent).
- High school completers were more likely to receive health insurance from their employer in 1990 than 2005 (62 percent vs. 39 percent, 24 percentage-point difference) and were more likely to receive vacation or sick leave benefits in 1990 than 2005 (57 percent vs. 32 percent, 25 percentage-point difference).
- High school completers evidenced significantly higher rates of engagement in 2005 than in 1990 (88 percent vs. 75 percent, 14 percentage-point difference).
- High school completers were more likely to have a checking account in 2005 than in 1990 (52 percent vs. 32 percent, 20 percentage-point difference).
- Rates of volunteerism were significantly higher in 2005 than in 1990 for high school completers (29 percent vs. 14 percent, 15 percentage points).
- The likelihood of youth with disabilities either belonging to an extracurricular community group or volunteering was higher in 2005 than 1990 for high school completers (48 percent vs. 31 percent, 17 percentage points).

- High school completers demonstrated a higher voter registration rate in 2005 than in 1990 (72 percent vs. 57 percent, 15 percentage points).
- Higher rates of ever having been arrested were reported for high school completers in 2005 than in 1990 (23 percent vs. 10 percent, 13 percentage points).

### **Cohort Comparisons of Experiences by Demographic Differences**

Differences between 1990 and 2005 were apparent across youth demographic characteristics, such as gender, age, household income, and race/ethnicity, for some post-high school outcomes but not for others.

Cohort comparisons by gender included:

- Both males and females had significantly higher rates of enrollment across types of postsecondary school in 2005 compared with 1990. For example, males experienced a 20 percentage-point (44 percent vs. 25 percent), and females a 19 percentage-point (49 percent vs. 31 percent), difference between cohorts in enrollment in any postsecondary school.
- Females were more likely to have reported full-time employment in 1990 than 2005 (54 percent vs. 21 percent, 33 percentage-point difference).
- Males were more likely to report receipt of employer provided health insurance (57 percent vs. 33 percent, 24 percentage point difference) and vacation or sick leave (63 percent vs. 39 percent, 24 percentage-point difference) in 1990 than 2005.
- Both males and females experienced higher rates of engagement in 2005 than in 1990; males evidenced an 18 percentage-point difference (89 percent vs. 72 percent), and females a 27 percentage-point difference (79 percent vs. 52 percent).
- Rates of having a checking account were higher between 2005 and 1990 for males, a 23 percentage-point difference (48 percent vs. 25 percent).
- The likelihood of youth with disabilities either belonging to an extracurricular community group or volunteering was higher in 2005 than 1990 for males (46 percent vs. 29 percent, 17 percentage points).
- Females demonstrated a higher voter registration rate in 2005 than in 1990 (67 percent vs. 45 percent, 22 percentage points).
- Higher rates of ever having been arrested were reported for males with disabilities in 2005 than in 1990 (32 percent vs. 20 percent, 13 percentage points).

Some post-high school outcomes significantly differed between 1990 and 2005 by the economic status of the households in which youth with disabilities grew up, including:

- Youth with disabilities in the highest (72 percent vs. 45 percent, 28 percentage-point difference) as well as the lowest parent household income categories (35 percent vs. 19 percent, 16 percentage-point difference) were more likely to be enrolled in a postsecondary school in 2005 than in 1990.
- Despite the significantly higher enrollment rates experienced by youth with disabilities in the lowest income category in 2005 compared with 1990, those from the highest

income households experienced a larger difference, thereby continuing the gap in postsecondary enrollment rates between those from the highest and lowest income households (72 percent vs. 35 percent).

- Youth with disabilities from families with the highest incomes were more likely to receive health insurance benefits from their jobs in 1990 than in 2005 (53 percent vs. 20 percent, 33 percentage-point difference).
- Youth with disabilities from families in the middle income category evidenced a significant difference in their rate of engagement in school and/or work between 1990 and 2005 (22 percentage-point difference, 90 percent vs. 69 percent), lessening the gap between their rate of engagement and that of youth with disabilities from higher income households.
- Youth with disabilities in the lowest and middle income categories were more likely to have a checking account in 2005 than in 1990 (18 percentage-point, 33 percent vs. 15 percent, and 23 percentage-point differences, 57 percent vs. 34 percent, respectively).
- Youth with disabilities in the highest income category were more likely to have a credit card in 2005 than in 1990 (55 percent vs. 30 percent, 25 percentage-point difference).
- The likelihood of youth either belonging to an extracurricular community group or volunteering was higher in 2005 than 1990 for youth with disabilities from families in the highest income group (65 percent vs. 29 percent, 36 percentage points).

Several post-high school outcomes that differed between 1990 and 2005 by race/ethnicity also were apparent:

- White youth with disabilities experienced significantly higher enrollment rates in 2005 compared with 1990 across the various types of postsecondary programs: 20 percentage points in any postsecondary program (47 percent vs. 27 percent), 19 percentage points in 2-year colleges (33 percent vs. 15 percent), 11 percentage points in 4-year colleges (16 percent vs. 5 percent), and 11 percentage points in vocational, business, or technical schools (21 percent vs. 10 percent).
- African American youth with disabilities experienced higher enrollment rates in 2005 compared with 1990 in 2-year colleges: 22 percentage points (35 percent vs. 13 percent).
- White youth were more likely to receive health insurance benefits from their jobs in 1990 than in 2005 (52 percent vs. 28 percent, 24 percentage-point difference).
- White youth with disabilities were more likely to be engaged in postsecondary education and employment in 2005 than in 1990 (90 percent vs. 73 percent, 17 percentage-point difference).
- Rates of having a checking account were higher between 2005 and 1990 for youth with disabilities who were White (56 percent vs. 32 percent, 24 percentage-point difference).
- White youth with disabilities demonstrated a higher voter registration rate in 2005 than in 1990 (67 percent vs. 52 percent, 15 percentage points).

## Comparisons With the General Population

When similar data items were available, comparisons were made between 1990 and 2005 for same-age youth in the general population. Comparison data were taken from the Current Population Survey (CPS), 1990 and 2005.

- Youth with disabilities experienced a significantly larger difference in postsecondary school enrollment rates between 1990 and 2005 than did those in the general population (19 percentage points vs. 9 percentage points). Despite the larger increase for youth with disabilities, in 2005 they remained less likely than those in the general population ever to have been enrolled in postsecondary education (46 percent vs. 63 percent).
- The reported employment rates of out-of-high school youth with disabilities did not significantly differ between 1990 and 2005 (62 percent and 56 percent, respectively). The employment rates of same-age out-of-high school youth in the general population in 1990 and 2005 was 60 percent and 59 percent employed at the time of interview, respectively, also not a significant difference.

## Cautions in Interpreting Findings

Readers should remember the following issues when interpreting the findings in this report:

- The purpose of this report is descriptive; as nonexperimental studies, NLTS and NLTS2 do not provide data that can be used to address causal questions. The descriptions provided in this document concern the post-high school experiences of youth. No attempt is made to “validate” respondents’ reports with information on their understanding of the survey items or with third-party information on their experiences (e.g., from employers or postsecondary education institutions).
- The analyses are descriptive; none of the findings should be interpreted as implying causal relationships.
- Information about the nature of students’ disabilities came from rosters of all students in the NLTS and NLTS2 age ranges receiving special education services in the 1983-84 or 2000–01 school year (respectively) under the auspices of participating LEAs and state-supported special schools. In analyses in this report, each student is assigned to a disability category on the basis of the primary disability designated by the student’s school or district. Although there are federal guidelines in making category assignments, criteria and methods for assigning students to categories vary from state to state and even between districts within states, with the potential for substantial variation in the nature and severity of disabilities included in the categories. Therefore, NLTS and NLTS2 data should not be interpreted as describing students who truly had a particular disability, but rather as describing students who were categorized as having that primary disability.
- Data presented are combined youth self-report and parent-report data. If an NLTS Wave 2 or NLTS2 Wave 3 youth interview/survey was completed, youth’s responses to these items were used in this report. In both studies, if a youth interview/survey could not be completed for an eligible youth or if a youth was reported by parents not to be able to participate in an interview/survey, parent responses were used. For the

subsample of out-of-high school youth included in this report, the youth interview/survey was the source of data for post-high school outcomes for 84 percent of NLTS youth and for 70 percent of NLTS2 youth, and the parent interview was the source for 16 percent of NLTS youth and 30 percent of NLTS2 youth who did not have a youth interview. Combining data across respondents raises the question of whether parent and youth responses would concur—i.e., would the same findings result if parents' responses were reported instead of youth's responses. When both parents and youth were asked whether the youth belonged to an organized community group, currently worked for pay, worked for pay in the past 2 years, and the wages currently employed youth earned per hour, their responses agreed from 70 percent to 91 percent of the time in NLTS and from 69 percent to 80 percent of the time in NLTS2.

- Differences exist between NLTS and NLTS2 that required analytic adjustments to age, disability category, and household income, for comparisons between the studies to be valid. After these adjustments had been made, differences remained between the NLTS and NLTS2 samples in two of the subgroups included in this report: the other health impairment/autism disability category and the high school completion status variable. Consistent with the increasing number of students identified with autism (Volkmar et al. 2004), the NLTS2 sample included significantly more youth in the other health impairment/autism category than the NLTS sample (6 percent vs. 1 percent,  $p < .01$ ). In addition, as presented in previous reports comparing the experiences of youth in NLTS with those in NLTS2,<sup>6</sup> youth in NLTS2 were more likely to have completed high school than those in NLTS (85 percent vs. 70 percent,  $p < .001$ ).
- It is important to note that descriptive findings are reported for the full sample of out-of-high school youth; those findings are heavily influenced by information provided for youth with learning disabilities, who constitute 62 percent of the weighted NLTS sample and 64 percent of the weighted NLTS2 sample. Comparisons also were conducted between groups of youth who differed with respect to disability category, high school-leaving status and timing, gender, race/ethnicity, and household income. These bivariate analyses should not be interpreted as implying that a factor on which subgroups are differentiated (e.g., disability category) has a causal relationship with the differences reported. Further, readers should be aware that demographic factors (e.g., race/ethnicity and household income) are correlated among youth with disabilities and are distributed differently across disability categories. These complex interactions and relationships among subgroups relative to the variables included in this report have not been explored.
- Extensive efforts were made to ensure the comparability of the two studies and that the wording of most NLTS and NLTS2 survey items are identical. A few items have minor wording differences, which may account for different responses. Survey items are included as chapter footnotes and wording differences are described there.
- Several types of analyses were conducted for this report, including between-group means, between-group percentages, and within-subject percentages. Because of the weighted nature of NLTS2 data, equality between the mean values of the responses to a

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<sup>6</sup> See Wagner, Newman, and Cameto (2004).

single survey item in two disjoint subpopulations was based on a test statistic essentially equivalent to a two-sample  $t$  test for independent samples using weighted data. Sample sizes for each group being compared were never less than 30. For a two-tailed test, the test statistic was the square of the  $t$  statistic, which then followed an approximate chi-square distribution with one degree of freedom, that is, an  $F(1, \text{infinity})$  distribution.

- Although discussions in the report emphasize only differences that reach a level of statistical significance of at least  $p < .01$ , the large number of comparisons made in this report may result in some significant differences mistakenly determined to be significant when they are not (i.e., “false positives” or type I errors). Readers also are cautioned that the meaningfulness of differences reported here cannot be derived from their statistical significance.

## Looking Ahead

This report provides a comparison of the post-high school experiences of youth with disabilities in 1990 and in 2005, who had been out of high school up to 4 years. It examines how differences between the two time periods varied across disability categories and demographic groups and, when data are available, how these differences compared with those of youth in the general population. Although the Wave 2 data collected in 1990 of NLTS was the final wave of data collection for that study, NLTS2 will continue to follow the lives of youth with disabilities as they age, which will provide information to examine how post-high school outcomes might evolve over time.



# 1. Comparing the Early Adulthood of Youth With Disabilities Between 1990 and 2005: Study Background and Methods

In an effort to document the secondary school experiences and postsecondary outcomes of students with disabilities over the last two decades, the U.S. Department of Education (ED) sponsored two longitudinal research studies 15 years apart. The first study, the National Longitudinal Transition Study (NLTS), generated nationally representative information about secondary-school-age youth who were receiving special education services in 1985.<sup>7</sup> To assess the status of youth with disabilities<sup>8</sup> in the early 21st century, ED commissioned the National Longitudinal Transition Study-2 (NLTS2) to generate nationally representative information about secondary-school-age youth who were receiving special education services in 2000.<sup>9</sup> NLTS2 addresses many of the same issues as NLTS (e.g., participation in postsecondary education and social involvement of out-of-high school youth), but extends its scope by collecting broader information related to these issues, such as information related to receipt of accommodations and supports from postsecondary schools or extent of seeing or communicating by computer with friends outside of work or school.

The tremendous range and scope of changes in American society and its economy that occurred in the years between NLTS and NLTS2 are reflected in many aspects of our lives. Increasing diversity in our population and family structures (Aulette 2009; Jacobs and Gerson 2001; Klein 2004; U.S. Census Bureau 2008), innovations in communication and information technologies (Anton, Silberglitt, and Schneider 2001; Collins and Halverson 2009; McRobbie 1999; Wellman et al. 2008), and the globalization of the economy are only a few of the many trends that have had far-reaching impacts on all of us (Henderson 1999; Joshi 2009). Other changes particularly affect students, such as the growing emphasis on the use of “high stakes” tests in holding schools accountable for the academic performance of their students (Supovitz 2009; William 2010) and the growing number of “school choice” options available to parents (Berends et al. 2009; Grady, Bielick, and Aud 2010).

In chronicling “the good news and the work ahead” in educating children with disabilities, the American Youth Policy Forum and the Center on Education Policy (2002) note dramatic changes in special education policy and practice in the 25 years after the passage of Public Law 94-142, now known as the Individuals with Disabilities Education Act (IDEA). They report that increased access to public education, inclusion in general education classrooms, participation in standardized testing, and high school graduation rates are among the “good news” stories for students with disabilities. Others cite factors particularly relevant to transition-age youth with disabilities that include amendments to IDEA and to vocational education and employment legislation that have shaped state-level transition policies, increased funding for vocational services for students with disabilities, removed obstacles to employment, and required states to

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<sup>7</sup> NLTS methods and postschool findings are summarized in Blackorby and Wagner (1996).

<sup>8</sup> Although the populations represented in NLTS and NLTS2 are youth who were receiving special education services, for convenience, the broader phrase “youth with disabilities” is used to describe them in this report.

<sup>9</sup> Additional information on the NLTS2 design and data collection instruments, and on reports available from the study can be found at <http://www.nlts2.org>.

monitor and report on the status of youth with disabilities after exiting high school (Lehman, et al. 2002; National Council on Disability 2000). It is timely to consider the changes in the characteristics, experiences, and outcomes of transition-age youth with disabilities that have been contemporaneous with the demographic, social, economic, and education policy changes in our country in the years between NLTS and NLTS2.

In addition to NLTS staff, many researchers documented the early post-high school outcomes of youth with disabilities in the NLTS era (e.g., Edgar, Levine, and Maddox 1986; Mithaug, Horiuchi, and Fanning 1985; Hasazi, Gordon, and Roe 1985; Sittlington and Frank 1990; Zigmond and Thornton 1985). Now, however, federal regulations (20 U.S.C. 1416(a)(3)(B) (IDEA)) require state departments of education to collect data on the employment and postsecondary education experiences of their exiters from special education within a year of leaving high school. Thus, post-high school outcomes are being reported regularly by state departments of education for their own populations of high school exiters (e.g., Kansas State Department of Education n.d.; Ohio Department of Education 2010; Rabren and Johnson 2010; Wisconsin Department of Public Instruction 2010). However, only NLTS and NLTS2 permit comparisons across time of the characteristics, experiences, and outcomes of nationally representative samples of youth with disabilities.

Previous reports comparing the school experiences of youth who were represented in NLTS with those represented in NLTS2 illuminate the extent and ways in which youth with disabilities, special education, and student outcomes differed between the time periods covered by the two studies (Wagner, Cameto, and Newman 2003; Wagner, Newman, and Cameto 2004; Wagner et al. 2005). Focusing on differences in students' school programs, for example, comparative analyses included in these reports revealed that more students with disabilities represented in NLTS2 than in NLTS took academic courses, including mathematics, science, social studies, and a foreign language, as a foundation for pursuing postsecondary education. Moreover, more students represented in NLTS2 than NLTS were receiving their instruction in regular high schools, and those students in NLTS2 who took academic courses were more likely to do so in general education classrooms than were the students in NLTS who took academic courses. Compared with NLTS, more teachers of general education classes in NLTS2 received a variety of supports to help them meet the needs of students with disabilities in their classes. In addition, students in NLTS2 were more likely than those in NLTS to receive a range of related and support services, including speech/language therapy and vocational and mental health services. Regarding students' academic performance, when assessed in NLTS2, students' grades also were higher relative to NLTS and a larger proportion were at the appropriate grade level for their age, indicating fewer had repeated a grade.

A previous report also asked whether differences in the early post-high school experiences and performance of young adults with disabilities represented in NLTS and NLTS2 were apparent (Wagner et al. 2005). That report examined differences in outcomes in the postsecondary education, employment, engagement in either postsecondary education or employment, and household circumstances for youth represented in NLTS and NLTS2 who had been out of high school up to 2 years, using data from the first wave of NLTS data collection (1987) and from the second wave of NLTS2 data collection (2003), when youth were ages 15 through 19.

Fortunately, a subsequent wave of NLTS and of NLTS2 data together enable an examination of differences in outcomes when more experience in the post-high school world could be reflected in the outcomes of youth with disabilities. This report focuses on the subset of youth represented in NLTS and NLTS2 who had been out of high school up to 4 years, a time in which youth begin the transition to adult roles that continues for most youth for many years (Settersten, Furstenberg, and Rumbaut 2005).<sup>10</sup> Information reported here about these youth is drawn from the second and last wave of parent and youth interviews/surveys conducted about NLTS youth in 1990 (referred to as cohort 1) and the third wave of parent interviews and youth interviews/surveys conducted for NLTS2 youth in 2005 (referred to as cohort 2). Analyses include the age group<sup>11</sup> of out-of-high school youth that was common to the studies at those time points: youth ages 18 through 21. Specifically, this report addresses the following questions:

- *What cohort differences and similarities are apparent between youth with disabilities out of high school up to 4 years who are represented in NLTS and in NLTS2 in the domains of postsecondary education, employment, engagement in either postsecondary education or employment, household circumstances (i.e., residential independence, marital status, and financial independence), and community integration (i.e., community participation and criminal justice system involvement)?* These domains mirror the purpose of IDEA: to “prepare them [children with disabilities] for future education, employment, and independent living” (20 U.S.C. 1400(d)(1)(A) (IDEA)).
- *How do cohort differences in the post-high school outcomes of youth with disabilities compare with those of youth in the general population?* Reports from NLTS and NLTS2 have compared findings for youth with disabilities with youth in the general population to the extent data permit, revealing significant differences on many factors, yet some similarities (see, for example, Newman et al. 2009; Wagner et al. 1991). It is a natural extension of that research agenda to examine cohort similarities and differences over time.
- *Do youth with disabilities who differ in their primary disability, gender, race/ethnicity,<sup>12</sup> household income, high school completion status, or years since leaving high school have different patterns of differences and similarities when youth represented in NLTS and NLTS2 are compared?* These subgroups are examined because research findings generated from both studies have demonstrated that youth with disabilities who differ in these ways have markedly different experiences and outcomes (see, for example, Blackorby and Wagner 1996; Newman et al. 2009; Wagner et al. 1991; Wagner, Newman, Cameto, Levine, and Marder 2003).

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<sup>10</sup> The comparison of post-high school outcomes that includes youth with the greatest post-high school experience is between NLTS and NLTS2, when youth were out of high school up to 4 years (i.e., wave 2 of NLTS and wave 3 of NLTS2). Although NLTS2 has five waves of data that follow youth until they were out of high school up to 8 years, NLTS did not collect additional data beyond wave 2.

<sup>11</sup> Age was based on birthdates provided by parents during interviews; the date of the NLTS2 Wave 3 interview was used to determine youth age in 2005, and the date of the NLTS Wave 2 interview was used to determine youth age in 1990.

<sup>12</sup> Findings are reported for White, African American, and Hispanic youth; other racial/ethnic categories of youth are too small in most cases to report findings for them separately.

Several post-high school outcomes are addressed both in the current and the earlier report (Wagner et al. 2005) on this subject, such as rates of postsecondary education enrollment and employment. However, with more youth with disabilities being out of high school in the later waves of data reported here, current analyses extend beyond those examined earlier. For example, chapter 2 not only examines cohort differences in enrolling in different kinds of postsecondary schools, it also examines the focus of the students' school programs and whether youth had completed their postsecondary education program by earning a degree, certificate, or license. Similarly, current analyses of employment outcomes (chapter 3) address several aspects of employment (e.g., duration, receipt of benefits, youths' perceptions of their job) that could not be addressed with the smaller samples of out-of-high school youth in earlier waves of data collection.

## **Overview of NLTS and NLTS2**

NLTS2 is a 10-year-long study of the characteristics, experiences, and outcomes of a nationally representative sample of youth with disabilities who were 13 to 16 years old and receiving special education services in grade 7 or above on December 1, 2000. In comparison, NLTS was a 6-year long study of youth with disabilities who were in grade 7 or above and ages 13 through 21 in the 1985–86 school year.

Findings from both studies are intended to generalize to youth with disabilities nationally and to youth in each of the federal special education disability categories in use for students in the NLTS or NLTS2 age range at the time of each study. NLTS2 was designed to collect data on sample members from multiple sources in five waves, beginning in 2001 and ending in 2009. NLTS also collected data from multiple sources, however, in two rather than five waves, beginning in 1985 and ending in 1990.

Key features of the two studies are summarized in table 1. Details of the NLTS and NLTS2 design, sample, and analysis procedures are presented in appendix A.

The NLTS and the NLTS2 samples both were constructed in two stages. In both studies, the district sample was stratified to increase the precision of estimates, to ensure that low-frequency types of districts (e.g., large urban districts) were adequately represented in the sample, to improve comparisons with the findings of other research, and to make the studies responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, districts of different sizes). Three stratifying variables were used, including region, size (student enrollment), and community wealth.

A stratified random sample of school districts was selected from the universe of approximately 14,000 for NLTS and 12,000 for NLTS2, which served students receiving special education in at least one grade from 7th through 12th grades. These districts were invited to participate in the study, with the intention of recruiting approximately 300 districts in NLTS and 500 districts in NLTS2. In order for the studies to be nationally representative of youth with disabilities who attended the most common types of publicly-supported schools, all known state-supported “special schools”—i.e., those that served primarily students with hearing and visual impairments and multiple disabilities (80 in NLTS and 77 in NLTS2)—were invited to participate in the studies.

Table 1. Key features of NLTS and NLTS2

NLTS (referred to as cohort 1)	NLTS2 (referred to as cohort 2)
<b>Study Duration</b>	
<ul style="list-style-type: none"> <li>• 1984 through 1993</li> </ul>	<ul style="list-style-type: none"> <li>• 2001 through 2010</li> </ul>
<b>Sample Members</b>	
<ul style="list-style-type: none"> <li>• Youth receiving special education, ages 13 through 21 in the 1983-84 school year. The oldest youth for whom data were collected were age 27 in Wave 2 (1990) and had been out of secondary school up to 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Youth ages 13 through 16 and receiving special education in grade 7 or above in December 2000. The oldest youth were 26 when the last data were collected in 2009.</li> </ul>
<b>Population to Which Findings Generalize</b>	
<ul style="list-style-type: none"> <li>• Youth with disabilities as a whole nationally and youth in each federal special education disability category individually.</li> </ul>	<ul style="list-style-type: none"> <li>• Youth with disabilities as a whole nationally and youth in each federal special education disability category individually.</li> </ul>
<b>Data Sources</b>	
<ul style="list-style-type: none"> <li>• Wave 1: Parents (telephone interviews); school record abstracts (information abstracted by school personnel from students' high school records); principals (school background survey).</li> <li>• Wave 2: Parents (telephone interviews); youth (telephone interviews); school staff best able to describe students' overall school program (school program survey); principals (school background survey); students' high school transcripts.</li> </ul>	<ul style="list-style-type: none"> <li>• Wave 1: Parents (telephone interviews, mail survey); youth (direct assessment of academic abilities, youth in-person interview on attitudes toward school); teachers (general education teacher survey); school staff best able to describe students' overall school program (student's school program survey); principals (school characteristics survey); students' high school transcripts.</li> <li>• Wave 2: Parents (telephone interviews); youth (telephone interviews, mail survey, direct assessment of academic abilities, youth in-person interview on attitudes toward school); teachers (general education teacher survey); school staff best able to describe students' overall school program (student's school program survey); students' high school transcripts.</li> <li>• Waves 3 and 4: Parents (telephone interviews); youth (telephone interviews, mail survey); students' high school transcripts.</li> <li>• Wave 5: Parents (telephone interviews); youth (telephone interviews, mail survey).</li> </ul>
<b>Years of Data Collection</b>	
<ul style="list-style-type: none"> <li>• Wave 1 parent interviews/mail survey, 1987</li> <li>• Wave 1 school data collection, 1985–86 or 1986–87 school year</li> <li>• Wave 2, parent/youth interviews, 1990</li> </ul>	<ul style="list-style-type: none"> <li>• Wave 1 parent interviews/mail survey, 2001</li> <li>• Wave 1 school data collection and direct assessments of youth, 2001–2002 school year</li> <li>• Wave 2 parent/youth interviews and mail survey, 2003</li> <li>• Wave 2 school data collection and direct assessments of youth, 2003–2004 school year</li> <li>• Wave 3, parent interview, youth interview/survey, 2005</li> <li>• Wave 4, parent/youth interviews and mail survey, 2007</li> <li>• Wave 5 parent/youth interviews and mail survey, 2009</li> <li>• High school transcript collection, 2002–2009</li> </ul>

The goal was to select from these districts and special schools a target sample of about 10,500 students in NLTS and 12,000 students in NLTS2. Extensive efforts to obtain consent to participate from eligible districts and the known universe of special schools resulted in 303 school districts and 22 special schools agreeing to participate in NLTS, and 501 school districts and 38 special schools agreeing to participate in NLTS2. Analyses of the NLTS2 district sample revealed that it closely resembled the universe of districts from which it was drawn on the sample's stratifying variables and on selected variables from the U. S. Department of Education's Office of Civil Rights database on the universe of school districts. Participating school districts and special schools provided rosters of students receiving special education services in the designated age range, from which the student samples were selected.

The rosters of all students in the NLTS and NLTS2 age range who were receiving special education services from each district and special school were stratified by primary disability category, as reported by the districts. Students then were selected randomly from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study years, findings would generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to the parent/youth interviews. A total of approximately 10,370 students were selected and eligible to participate in NLTS, and 11,270 students were selected and eligible to participate in NLTS2.

### **Data Sources for Youth With Disabilities**

Multiple data sources were used in this report to describe the differences in post-high school experiences of youth with disabilities. As noted earlier, the primary NLTS source was the Wave 2 parent/youth telephone interview and mail survey, conducted in 1990. For NLTS2, the primary source was the Wave 3 parent/youth telephone interview and mail survey, conducted in 2005.<sup>13</sup> In addition, constructed variables that describe the experiences of youth with disabilities since leaving high school incorporated data from the NLTS Wave 1 parent interview (conducted in 1987) and the NLTS2 Wave 2 parent/youth telephone interview and mail survey (conducted in 2003) for youth with disabilities who were out of high school in 1987 or 2003. School district rosters in both studies and the NLTS2 Wave 1 parent interview or mail survey also provided a small amount of data used in this report. NLTS and NLTS2 data sources are described briefly below and discussed in greater detail in appendix A.<sup>14</sup>

The data for out-of-high school youth with disabilities, the focus of this report, were obtained for approximately 2,580 NLTS sample members with responses to the NLTS Wave 2 survey and 2,620 NLTS2 sample members with responses to the NLTS2 Wave 3 survey, who

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<sup>13</sup> NLTS2 instruments are available at [www.nlts2.org](http://www.nlts2.org).

<sup>14</sup> Because the data reported here come primarily from telephone interviews or mailed surveys that were requested by respondents during a telephone contact, no prior consent was required; respondents were free to indicate their consent by continuing with the interview or to decline and hang up. Interviewers provided respondents with the following information:

“This interview is voluntary. Everything you say will be kept completely confidential and you may choose not to answer any question that I ask you. Nothing you say will ever be reported individually about you, [YOUTH if parent was respondent], or your family, and no information you give will be shared with [YOUTH'S/YOUR] school. If you have any questions or concerns about the study, I can give you a toll-free number to call.

Table 2. NLTS and NLTS2 data sources for post-high school experiences of youth with disabilities included in this report

Source	Number	Percent of eligible youth
<b>NLTS</b>		
Total number of sample members with responses to Wave 2 survey, known to be out of secondary school at the time of the Wave 2 data collection	2,580	100.0
Number with Wave 2 survey data coming from:		
Youth telephone interview	2,150	83.3
Youth mail questionnaire	30	1.2
Parent telephone interview	270	10.5
Parent mail questionnaire	130	5.0
Number with data coming from Wave 1 parent telephone interview	2,580	100.0
Number with data coming from school and school district student rosters	2,580	100.0
<b>NLTS2</b>		
Total number of sample members with responses to Wave 3 survey, known to be out of secondary school at the time of the Wave 3 data collection	2,620	100.0
Number with Wave 3 survey data coming from:		
Youth telephone interview	1,600	61.1
Youth mail questionnaire	220	8.4
Parent telephone interview	800	30.5
Number with Wave 2 survey data coming from:		
Youth telephone interview	800	30.5
Youth mail questionnaire	70	2.7
Parent telephone interview	270	10.3
Number with data coming from Wave 1 parent interview	2,620	100.0
Number with data coming from school and school district student rosters	2,620	100.0

were known to be out of high school at the time of the NLTS Wave 2 or NLTS2 Wave 3 data collection (table 2).

For both studies, information on the outcomes of out-of-high-school youth with disabilities come from youth themselves in the majority of cases (see table 1), usually from the youth telephone interview. These respondents were youth with disabilities who were reported by parents to be able to answer questions for themselves by telephone. Youth with disabilities who were reported to be able to answer questions for themselves, but not by telephone (e.g., youth with hearing impairments) were sent a mail questionnaire with a subset of items from the telephone survey.<sup>15</sup> For youth with disabilities who were reported by parents not to be able to answer questions for themselves (e.g., youth with significant cognitive impairments), interviews were attempted with parents. In NLTS, parents who could not be reached by phone were mailed a questionnaire with a subset of items from the telephone interview; no parent mail survey was conducted in Wave 3 of NLTS2. Thus there are four sources of NLTS data for Wave 2 of NLTS and three sources for Wave 3 of NLTS2. Data from these sources were combined for the analyses reported here and subsetted to include only data for out-of-high school youth, aged 18 and older.

<sup>15</sup> Only a subset of items was included in the mail survey because the full set of items was considered too lengthy to be feasible for a mail questionnaire format.

## **NLTS Data**

The NLTS instruments that provided information for this report included the following.

**Wave 2 youth telephone interview.** All wave 2 data collection began with an effort to contact parents of sample members by telephone. NLTS sample members eligible for a Wave 2 youth telephone interview included those (1) for whom working telephone numbers or addresses were available so that their parents could be reached by phone (a total of approximately 8,660 youth with disabilities), (2) who were not in the disability categories of deafness, multiply handicapped, deaf/blind, autism, or moderately, severely, or profoundly mentally retarded, and (3) who were not institutionalized (these latter two categories of youth with disabilities were not expected to be able to respond to a telephone interview independently).<sup>16</sup> For youth with disabilities who met the eligibility criteria, an initial telephone contact was made with parents of sample members, who completed items intended only for parent respondents. Then parents were asked whether the young adult son/daughter with disabilities was able to respond to questions about his/her experiences by telephone for him/herself, as noted above.<sup>17</sup> If parents responded affirmatively, interviewers asked to speak with the youth or asked for contact information to reach the youth in order to complete the youth portion of the interview. Telephone interviews were completed with approximately 2,150 out-of-high school youth with disabilities.

**Wave 2 youth mail survey.** Two categories of youth with disabilities were mailed questionnaires with a subset of items from the telephone interview: (1) youth whose parent indicated they would be able to respond to questions about their experiences themselves by telephone, but who could not be reached by phone, and (2) youth with hearing impairments. Overall, approximately 980 of the total of 2,580 youth with disabilities whose parents were contacted were mailed questionnaires. Questionnaires were returned by approximately 350 youth with disabilities (a 36 percent response rate), 30 of whom were out of high school; these are included in the sample that generated the findings reported in this document.

**Wave 2 parent/guardian interview.** In addition to sample members who completed a telephone interview or mail survey, parents completed a telephone interview for approximately 3,304 sample members who did not respond for themselves, either because they were considered unable to do so or because those who were reported able to respond could not be reached or refused to respond. In the latter case, parents were contacted to complete a subset of interview items. A total of approximately 270 youth with disabilities for whom parents were the sole respondents were out of secondary school and are included in the sample that forms the basis of this report.

**Wave 2 parent/guardian mail survey.** A questionnaire was mailed to parents for whom there were no valid telephone numbers on file or who, upon refusing to complete the telephone interview, stated they would complete a mail survey. The mail questionnaire included items related to key outcome variables, such as school enrollment status and residential information.

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<sup>16</sup> See appendix A for more information on sample eligibility.

<sup>17</sup> At the end of parent part 1 of the NLTS phone interview, parents were asked, "My next questions are about jobs (YOUTH NAME) may have had, schools (he/she) may have gone to, and about (his/her) feelings about (him/herself) and (his/her) life. The questions are similar to those I've been asking you, where (he/she) will be asked to answer using scales, like "very well," "pretty well," "not very well," or "not at all well." The interview would probably last about 20 to 30 minutes. Do you think that (YOUTH'S NAME) would be able to accurately answer these kinds of questions over the telephone?"



Questionnaires were mailed to approximately 2,960 parents and were returned by approximately 540 parents, an 18 percent response rate. Approximately 130 mail questionnaire respondents were parents of out-of-high school youth with disabilities; their responses are included as part of the sample that generated the findings reported in this document.

**Wave 1 parent/guardian interview.** The initial wave of NLTS data collection involved parent telephone interviews. Data for two demographic items (youth's gender and race/ethnicity) were drawn from these Wave 1 interviews for the subset of out-of-high school youth with disabilities, which are included in the basis of this report. In addition, approximately 310 youth with disabilities were already out of high school in Wave 1. Four variables<sup>18</sup> that were created for this report indicate whether a youth had had a particular experience "since high school." Eighty-eight percent of out-of-high school respondents (approximately 2,270 youth with disabilities) had left high school since the Wave 1 data collection; thus, Wave 2 data were all that were required to generate values for these variables for them. However, for those already out of high school in Wave 1, data from both Waves 1 and 2 were needed to generate values for variables measuring experiences "since high school." The Wave 1 parent telephone interview produced data for approximately 310 youth with disabilities included in the subsample that forms the basis of this report.

**School and school district student rosters.** NLTS information about the primary disability category of sample members came from rosters of students in the NLTS age range receiving special education services in the 1985–86 school year under the auspices of participating school districts and state-supported special schools.

### ***NLTS2 Data***

The NLTS2 instruments that provided information for this report include the following:

**Wave 3 youth telephone interview.** NLTS2 sample members eligible for a Wave 3 youth telephone interview included those (1) for whom working telephone numbers or addresses for youth or their parents were available so that they could be reached by phone (a total of approximately 7,990 youth with disabilities) and (2) whose parents or guardians (referred to here as parents) had reported in the Wave 2 parent telephone interview (if interviewed at that time) or the Wave 3 parent interview (if interviewed in Wave 3 for the first time) that the youth could answer questions about his or her experiences by phone (approximately 3,070 youth with disabilities).<sup>19</sup> Wave 3 interview attempts were made directly with youth who were reported in Wave 2 to be able to participate in a telephone interview without attempts being made to contact parents in advance. For youth with disabilities whose parents were not interviewed in Wave 2 and, therefore, whose ability to participate in a telephone interview or mail survey was unknown, parent interviews were attempted first. Similar to NLTS, after making the initial telephone contact with the parents of sample members and completing items intended only for parent respondents, parents were asked whether their adolescent children with disabilities were able to respond to questions about their experiences by telephone for themselves. Parents who responded affirmatively and whose sample children were younger than age 18 then were asked to

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<sup>18</sup> The four variables that focused on youth's experiences "since high school" included postsecondary school enrollment status, postsecondary school completion status, parenting status, and arrests.

<sup>19</sup> See appendix A for more information on sample eligibility.

grant permission for their children to be interviewed and told the kinds of questions that would be asked.<sup>20</sup> Parents of youth with disabilities ages 18 or older were informed of the kinds of questions that would be asked of the youth, but permission was not requested because the youth were no longer minors. Interviewers obtained contact information for these youth and attempted to complete telephone interviews with them. Telephone interviews were completed with approximately 2,810 youth with disabilities, 92 percent of the approximately 3,070 youth with disabilities who were eligible.<sup>21</sup> Approximately 1,600 respondents to the Wave 3 youth telephone interview were out-of-high school youth with disabilities.

**Wave 3 youth mail survey.** If parent respondents to the Wave 2 or Wave 3 telephone interview indicated that youth were not able to respond to questions about their experiences for themselves by telephone, interviewers asked whether youth would be able to complete a mail questionnaire. Parents of approximately 740 Wave 3-eligible youth with disabilities responded affirmatively, making their children eligible for a mail survey.<sup>22</sup> Mailing addresses were obtained for those sample members, and questionnaires were sent to the youth. Questionnaires were tailored to the circumstances of individual youth. For example, if a parent indicated in the telephone interview that a youth was employed, the questionnaire for that youth contained a section on employment experiences, which was not included in questionnaires for youth reported not to be employed. Questionnaires were returned by approximately 480 youth with disabilities, 65 percent of the approximately 740 youth with disabilities who were eligible. Approximately 220 mail questionnaire respondents were out-of-high school youth with disabilities; these are included as part of the sample that generated the findings reported in this document.

**Wave 3 parent/guardian interview.** In addition to sample members who completed a telephone interview or mail survey, parents completed a telephone interview for approximately 1,560 sample members who did not respond for themselves, either because they were reported to be unable to do so or because those who were reported as able to respond could not be reached or refused to respond. In the latter cases, parents were contacted to complete a subset of interview items that experience demonstrated could readily be answered by many parents (e.g., whether a youth was employed or enrolled in postsecondary education). A total of approximately 800 youth

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<sup>20</sup> Parents were told that interview questions would pertain to “school or work and social activities, as well as a few questions about things like...” For youth younger than 18, the sentence was completed with “[his/her] attitudes and experiences, like ever having been arrested.” For youth age 18 or older, the sentence was completed with “[his/her] attitudes and experiences, including smoking, drinking, and ever having been arrested”; items related to these kinds of risk behaviors were asked only of youth age 18 or older. A total of 164 parents reported that their children could respond to the telephone interview but did not give permission for their children to be interviewed (4 percent of those reportedly able to respond); the interview then continued with the parents and obtained additional information on subjects such as employment and postsecondary education. The parent continuation interview did not include any items addressed in this report; hence, these children are not represented in the findings presented here. Analyses of the disability category distribution and demographic factors of youth who were able to respond and given permission to do so and those who were not permitted to be interviewed revealed no significant or sizable differences between the two groups.

<sup>21</sup> If a youth could not be reached by phone or did not return a mailed questionnaire, an attempt was made to recontact the parent and complete the second part of the telephone interview with the parent, which included only items readily answerable by many parents about their adolescent and young adult children with disabilities.

<sup>22</sup> Permission for youth to be sent a mail questionnaire was not asked of parents because that questionnaire did not contain items considered potentially sensitive and because parents’ providing a mailing address for the questionnaire was considered to be permission to send it.

with disabilities for whom parents were the sole respondents were out of secondary school, and these are included in the sample that forms the basis of this report. Out-of-high school youth with disabilities whose parents responded for them did not differ significantly in their disability category, age identified as having a disability, or functional abilities.

**Wave 2 parent/guardian and youth interview/survey.** As mentioned previously, four variables that were created for this report indicate whether a youth with a disability had had a particular experience “since high school.” Fifty-one percent of out-of-high school respondents (approximately 1,140 youth) had left high school since the Wave 2 data collection; thus, only Wave 3 data were required to generate values for these variables for them. However, the remainder of the out-of-high school respondents (approximately 1,100 youth with disabilities) were already out of high school in Wave 2. Thus, data from both Waves 2 and 3 needed to be taken into account to generate values for variables measuring experiences “since high school.” Wave 2 data also were used to determine whether sample members had completed high school or left without completing and the year in which they left. Wave 2 data collection mirrored procedures followed for Wave 3. The Wave 2 youth telephone interview produced data for approximately 800 youth with disabilities included in the sample that forms the basis of this report, the mail questionnaire generated data for approximately 70 youth with disabilities, and parent interviews provided data for approximately 270 youth with disabilities, for a total of approximately 1,140 sample members.

**Wave 1 parent/guardian interview/survey.** The initial wave of NLTS2 data collection involved parent telephone interviews and a mail survey of parents who could not be reached by telephone. Data for two demographic items (youth’s gender and race/ethnicity) were drawn from these Wave 1 sources for the subset of out-of-high school youth with disabilities, which are included in the basis of this report.

**School and school district student rosters.** Information about the primary disability category of NLTS2 sample members came from rosters of students in the NLTS2 age range receiving special education services in the 2000–2001 school year under the auspices of participating school districts and state-supported special schools. Additionally, data on the racial/ethnic background of sample members were taken from this source when they were included on rosters. In the absence of roster data on youth’s racial/ethnic background, data were taken from the Wave 1 parent interview or mail survey.<sup>23</sup>

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<sup>23</sup> Student rosters provided race/ethnicity data for 97 percent of the sample.

## Data Source for Comparisons With Youth in the General Population

When similar data items were available, comparisons were made between youth with disabilities and the same-age youth in the general population.<sup>24</sup> Comparison data were taken from the Current Population Survey (CPS), 1990 and 2005. The CPS is a monthly survey of 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The nationally representative sample included in this monthly survey was selected to represent the civilian noninstitutional population in the United States. Comparison data for this report were taken from the October, 1990, and October, 2005, data collections for youth who were 18 to 21 years old and out of high school. Calculations were made from public use data available at <http://www.census.gov/cps/>, using the Data Ferret Web tool.<sup>25</sup> Readers should be aware that the population of youth with disabilities in this age range differs from the general population of youth in ways other than disability status (e.g., the population of youth with disabilities is 63 percent male; see appendix B for further description of the populations represented in NLTS and NLTS2).

## Analytic Adjustments to Increase the Comparability of Study Samples

NLTS and NLTS2 have many design features that enable comparisons between them; however, differences exist between the two studies that have required analytic adjustments for comparisons to be valid, particularly related to age, disability category, and household income.

### Age

One important difference between NLTS and NLTS2 were the age ranges for youth with disabilities included in the two studies. At the time of the NLTS Wave 2 parent/youth interviews/surveys, youth were 18 through 26 years old, whereas at the time of the NLTS2 Wave 3 parent/youth interview/surveys, NLTS2 youth were ages 17 through 21. To improve comparability of the studies, youth of similar ages, 18 through 21, were selected from each sample. The two samples then were weighted to have the same distribution of these age groups: 15 percent were 18 years old, 30 percent were 19, 38 percent were 20, and 17 percent were 21 years old.

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<sup>24</sup> Youth with disabilities are included in the general population comparison sample because excluding them would require using self-reported disability data, which frequently are not an accurate indicator of disability, resulting in both over- and underestimations of disability. For example, a large proportion of self-identified disabilities in postsecondary youth were visual impairments because of confusion by students who wear glasses. In addition, NLTS2 findings indicated that less than one-third (32 percent) of youth with disabilities who were identified by their secondary school as having a disability considered themselves to have a disability by the time they were age 17 or older.

<sup>25</sup> For most CPS items only the variable name and description were available, rather than the full item wording. In addition, some of the CPS variables were combined to make them equivalent to NLTS/NLTS2 items. For these reasons, the CPS survey questions will not be presented in the report chapters.

### ***Disability Category***

Another difference between the study samples that has been accommodated through analytic adjustments to enhance comparability involves the system of disability classification in use at the time each of the studies were conducted. In both studies, information about the nature of youths' disabilities came from rosters of all students in the age ranges included in the studies and receiving special education services in the 1985–86 or 2000–01 school years under the auspices of participating local education agencies (LEAs) and state-supported special schools. Each student was assigned to a disability category on the basis of the primary disability designated by the student's school or district. In 2001 the federal disability categories specified for students differed from those in 1986:

- There were categories in 2001 that were not in use in 1986, specifically the categories of autism and traumatic brain injury.
- The categories of deaf and hard of hearing in 1986 were included in the one disability category of hearing impairment in 2001.

Because students with autism were included in the other health impairment category in 1986, comparisons for this report required that the NLTS2 youth with autism (approximately 180 youth) be included in the other health impairment category<sup>26</sup> as well.

Youth in the 2001 traumatic brain injury category were assigned to a disability category compatible with the disability categories in effect in 1986, based on disability information provided by parents during the telephone interview. Traumatic brain injuries can affect varied areas, such as communication, physical, or learning abilities, depending upon the structures of the brain that had been damaged. Parents of youth with traumatic brain injuries usually described the functional disabilities experienced by their child, rather than, or in addition to using the term, "traumatic brain injury," when they were asked about their child's disability during the parent interview. This parent data provided the basis for recoding the 2001 traumatic brain injury category into the 1986 disability categories. Most youth in the 2001 traumatic brain injury category were included in the orthopedic (approximately 50 youth), learning disability (approximately 25 youth), or other health impairment (approximately 20 youth) categories. They also were placed in the multiple disability (approximately 5 youth), visual impairment (approximately 5 youth), speech/language impairment (approximately 5 youth), hearing impairment (1 youth), or mental retardation (1 youth) categories.

In addition, the two NLTS categories of deaf (approximately 310 youth) and hard of hearing (approximately 320 youth) were combined to be comparable to the single NLTS2 category of hearing impairment. In both cohorts, students with deaf-blindness were included in the multiple impairments category because there were too few to report separately (approximately 10 youth in NLTS and 30 youth in NLTS2).

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<sup>26</sup> Although in 1986 this category was referred to solely as "other health impairment," in this report the combined 1986/2001 category will be referred to as the "other health impairment and autism" category.

### **Household Income**

Classifying the income of parents' households in NLTS and NLTS2 relied exclusively on information provided during the parent interview/surveys. NLTS income data were reported in six broad categories, e.g., "under \$12,000" or "\$25,000 to less than \$38,000." NLTS2 income data were reported in 16 categories, increasing in \$5,000 increments, e.g., "\$10,001 to \$15,000," or "\$30,001 to \$35,000." Because income was reported in categories instead of specific amounts, it was not possible to adjust NLTS income for inflation to make them equivalent to 2005 dollars, the preferred approach for comparing income groups over time. As an alternative, three income categories were created—lowest, middle, and highest—each of which encompassed similar proportions of the income distribution in the two studies. Thus, the comparisons reported indicate how various outcomes differed for the designated lowest income group in NLTS relative to the designated lowest income group in NLTS2. Ideally, the three groups each would contain approximately one-third of the income distribution in each study. However, the limited number of response categories used in NLTS and the fact that the distribution was heavily skewed to the few lowest income categories precluded forming groups that fairly evenly divided the full income distribution. The grouping strategy that created the most closely equivalent groups across the two studies assigned 52 percent of the NLTS sample to the lowest income category, 31 percent to the middle category, and 17 percent to the highest category. In NLTS2, the percentages are 48 percent, 34 percent, and 18 percent, respectively. Thus, the categories indicate income relative to other youth in each study, not a fixed income amount.

### **Youth Included in the Report**

The youth with disabilities who are the focus of this report represent only the subset of youth with disabilities who received special education services in secondary school in the 1985–86 or 2000–01 school years, not the entire populations. The full population to which the NLTS sample generalizes is a cohort of youth who were 13 to 21 years old and received special education services in grade 7 or above as of December 1, 1985. The full population to which the NLTS2 sample generalizes is a cohort of youth who were 13 to 16 years old and received special education services in grade 7 or above as of December 1, 2000. Weights for analyses reported in this document were calculated so that all youth with disabilities who were out of secondary school and for whom a telephone interview or mail survey was completed or for whom parents responded to the second part of the parent interview generalize to all youth with disabilities who were out of high school. Weights were computed adjusting for various youth and school characteristics used as stratifying or poststratifying variables. (See appendix A for additional information related to sample weighting.)

### **Analysis Approaches**

Analyses reported in this document involve simple descriptive statistics (e.g., percentages, means), bivariate relationships (i.e., cross-tabulations), and correlations. All statistics were weighted to be representative of a larger population of students (as discussed earlier). These analysis approaches excluded cases with missing values; no imputation of missing values was conducted.

Statistical tests examining differences between independent subgroups or between responses to different items given by the same group that involve categorical variables with more than two

possible response categories were conducted by treating each of the possible response categories as separate dichotomous items. For example, each of the three possible response categories to a question regarding liking a job (“very much,” “fairly well,” and “not much or not at all”) was treated as a separate dichotomous item. The percentages of youth with disabilities who gave each response were then compared across disability or demographic groups or across different questionnaire/interview items. This approach, rather than using scale scores (e.g., the average response for a disability group on a 3-point scale created by assigning values of 1 through 3 to the response categories), was adopted for two reasons: the proper scaling for the response categories was not apparent, and it was felt that reporting differences in percentages responding in each of the response categories would be more meaningful and easier for readers to interpret than reporting differences in mean values.

Rather than test for differences between all independent subgroups (e.g., youth in different disability categories) simultaneously (e.g., using a  $k \times 2$  chi-square test of homogeneity of distribution, where  $k$  is the number of disability groups), the statistical significance of differences between selected pairs of independent subgroups was tested. This approach was followed because the intent was to identify significant differences between specific groups (e.g., youth with learning disabilities are significantly more likely than those with mental retardation to report that they are cared for “a lot” by parents), rather than to identify a more general “disability effect” (e.g., the observed distribution across disability categories differs significantly from what would be expected from the marginal distributions) for the variable of interest.

The test statistic used to compare Bernoullian-distributed responses (i.e., responses that can be allocated into one of two categories and coded as 0 or 1) for two independent subgroups is analogous to a chi-square test for equality of distribution (Conover 1971) and approximately follows a chi-square distribution with one degree of freedom. However, because the test statistic itself is more similar in form to the square of a two-sample  $t$  statistic with unequal variances<sup>27</sup> (Satterthwaite 1946) and because a chi-square distribution with one degree of freedom is the same as an  $F$  distribution with one degree of freedom in the numerator and infinite degrees of

<sup>27</sup> In the case of unweighted data, two percentages are usually compared by using nonparametric statistics, such as the Fisher exact test. In the case of NLTS2, the data were weighted, and the usual nonparametric tests would yield significance levels that are too small, because the NLTS2 effective sample size is less than the nominal sample size. Instead, to test for the equality between the mean values of the responses to a single survey item in two disjoint subpopulations, we began by computing a ratio where the numerator was the difference of the sample means for those subpopulations. (In the case of Bernoulli variables, each mean was a weighted percentage.) The denominator for the ratio was the estimated standard error of the numerator, where the standard errors were adjusted to take into account clustering, stratification, and unequal weights. This test statistic is essentially equivalent to a two-sample  $t$  test for independent samples (Welch 1947) with design effect adjustments. The adjustment to the variances were determined in a design effect study that compared traditionally calculated variances with those calculated using 32 balanced repeated replicate weights. Sample sizes (and consequently degrees of freedom) for Student  $t$  types of ratios were typically reasonably large (i.e., never fewer than 30 in each group), so the ratio follows, by the Central Limit Theorem (Wilks 1962), an approximate normal distribution. For a two-tailed test, the test statistic is the square of the ratio, which then follows an approximate chi-square distribution with one degree of freedom. Because a chi-square distribution with one degree of freedom is the same as an  $F$  distribution with one degree of freedom in the numerator and an infinite number of degrees in the denominator, the test statistic approximately follows an  $F(1, \text{infinity})$  distribution. Since the application of adjustments from the design effect study tended to slightly overestimate the standard errors from balanced repeated replicates, even with the use of infinite degrees of freedom, rather than 31 degrees of freedom, the end result was a slight overestimation of the  $p$  values.

freedom in the denominator (Johnson and Kotz 1970), this statistic can be considered the same as an  $F$  value; it also can be considered “chi-squared.”

## Technical Notes

Readers should remember the following issues when interpreting the findings in this report:

- **Purpose of the report.** The purpose of this report is descriptive; as nonexperimental studies, NLTS and NLTS2 do not provide data that can be used to address causal questions. No attempt is made to attribute cohort differences in the factors explored in this report to differences in the populations of youth (see appendix B for documentation of cohort similarities and differences) or to any other factors. Further, no attempt is made to “validate” respondents’ reports with information on their understanding of the survey items or with third-party information on their experiences (e.g., from employers or postsecondary education institutions). In addition, the report does not attempt to explain why parents or youth responded as they did or why responses differ for youth in different subgroups (e.g., disability categories).
- **Subgroups reported.** In each chapter, the descriptive findings are reported for the full sample of youth with disabilities; those findings are heavily influenced by information provided by youth with learning disabilities, who constitute 62 percent of the weighted NLTS sample and 64 percent of the weighted NLTS2 sample (see appendix B). Youth with emotional disturbances, mental retardation, other health impairments, and speech/language impairments constitute 11 percent, 17 percent, 1 percent, and 4 percent of the weighted NLTS sample, respectively and 12 percent, 11 percent, 6 percent, and 4 percent of the weighted NLTS2 sample, respectively. The other seven categories together make up less than 5 percent of the weighted sample in both studies. Findings then are reported separately for youth in each federal special education disability category (as described earlier). Comparisons also were conducted between groups of youth with disabilities who differed in school-leaving status, years since leaving high school, gender, race/ethnicity, and household income. These bivariate analyses should not be interpreted as implying that a factor on which subgroups are differentiated (e.g., disability category) has a causal relationship with the differences reported. Further, readers should be aware that demographic factors (e.g., race/ethnicity and household income) were correlated among youth with disabilities, as well as being distributed differently across disability categories (e.g., youth in the category of mental retardation are disproportionately likely to be African American, and those in the other health impairment category were disproportionately likely to be White, relative to the general population; see appendix B for percentage of youth in both studies, within each disability category, by demographic characteristics).<sup>28</sup> The complex interactions and relationships among subgroups relative to the other variables included in this report (e.g., postsecondary enrollment status) have not been explored.

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<sup>28</sup> See Wagner et al. (1991) and Wagner et al. (2003) for relationships of demographic factors and disability categories for the full NLTS and NLTS2 samples.



- **Categorizing students by primary disability.** Information about the nature of students' disabilities came from rosters of all students in the NLTS and NLTS2 age ranges receiving special education services in the 1983–84 or 2000–01 school year (respectively) under the auspices of participating LEAs and state-supported special schools. In analyses in this report, each student is assigned to a disability category on the basis of the primary disability designated by the student's school or district. Although there are federal guidelines in making category assignments, criteria and methods for assigning students to categories vary from state to state and even between districts within states, with the potential for substantial variation in the nature and severity of disabilities included in the categories. Therefore, NLTS and NLTS2 data should not be interpreted as describing students who truly had a particular disability, but rather as describing students who were categorized as having that primary disability.
- **Differences between NLTS and NLTS2 samples in descriptive subgroups.** As described earlier in this chapter, differences exist between NLTS and NLTS2 that required analytic adjustments to age, disability category, and household income, for comparisons between the studies to be valid. After these adjustments had been made, differences remained between the NLTS and NLTS2 samples in two of the subgroups included in this report: the other health impairment/autism disability category and the high school completion status variable (see appendix B table B-1). Consistent with the increasing number of students identified with autism (Volkmar et al. 2004), the NLTS2 sample included significantly more youth in the other health impairment/autism category than the NLTS sample (6 percent vs. 1 percent,  $p < .01$ ). In addition, as presented in previous reports comparing the experiences of youth with disabilities in NLTS with those in NLTS2,<sup>29</sup> youth in NLTS2 were more likely to have completed high school than those in NLTS (85 percent vs. 70 percent,  $p < .001$ ).
- **Differences between NLTS and NLTS2 in item wording.** Extensive efforts were made to ensure the comparability of the two studies and that the wording of most NLTS and NLTS2 survey items are identical. A few items have minor wording differences, which may account for different responses. Survey items are included as chapter footnotes and wording differences are described there.
- **Findings are weighted.** NLTS and NLTS2 were designed to provide a national picture of the characteristics, experiences, and achievements of youth with disabilities in the studies' age ranges as they transition to young adulthood. Therefore, all the statistics presented in this report are weighted estimates of the national population of students receiving special education in the studies' age groups and of each disability category individually who satisfied the studies' eligibility requirements (i.e., who were out of high school).
- **Standard errors.** For each mean and percentage in this report, a standard error is presented that indicates the precision of the estimate. For example, a variable with a weighted estimated value of 50 percent and a standard error of 2.00 means that the value for the total population, if it had been measured, would lie between 46 percent and 54 percent, with 95 percent confidence (i.e., within plus or minus  $1.96 \times 2$ , or

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<sup>29</sup> See Wagner, Newman, and Cameto (2004)

3.92 percentage points of 50 percent). Thus, smaller standard errors allow for greater confidence to be placed in the estimate, whereas larger ones require caution.

- **Combined youth self-report and parent-report data.** If an NLTS Wave 2 or NLTS2 Wave 3 youth interview/survey was completed, youth's responses to these items were used in this report. In both studies, if a youth interview/survey could not be completed for an eligible youth or if a youth was reported by parents not to be able to participate in an interview/survey, parent responses were used. For the subsample of out-of-high school youth with disabilities included in this report, the youth interview/survey was the source of data for post-high school outcomes for 84 percent of NLTS youth and for 70 percent of NLTS2 youth, and the parent interview was the source for 16 percent of NLTS youth and 30 percent of NLTS2 youth who did not have a youth interview. Combining data across respondents raises the question of whether parent and youth responses would concur—i.e., would the same findings result if parents' responses were reported instead of youth's responses. When both parents and youth were asked whether the youth belonged to an organized community group, currently worked for pay, worked for pay in the past 2 years, and the wages currently employed youth with disabilities earned per hour, their responses agreed from 70 percent to 91 percent of the time in NLTS and from 69 percent to 80 percent of the time in NLTS (analyses presented in appendix A).
- **Small samples.** Although NLTS and NLTS2 data are weighted to represent the population, the size of standard errors is influenced heavily by the actual number of youth in a given group (e.g., a disability category). In fact, findings are not reported separately for groups that do not include at least 30 sample members because groups with very small samples have comparatively large standard errors. Therefore, readers should be cautious in interpreting results for groups with small sample sizes and large standard errors.
- **Significant differences.** A large number of statistical analyses were conducted and are presented in this report. Because no explicit adjustments were made for multiple comparisons, the likelihood of finding at least one statistically significant difference when no difference exists (i.e., "false positives" or type I errors) in the population is substantially larger than the type I error for each individual analysis. To partially compensate for the number of analyses that were conducted, we have used a relatively conservative  $p$  value of  $< .01$  in identifying significant differences. The text mentions only differences reaching that level of significance. If no level of significance is reported, the group differences described do not attain the  $p < .01$  level. Readers also are cautioned that the meaningfulness of differences reported here cannot be inferred from their statistical significance.

## Organization of the Report

This report is organized to provide information on differences between NLTS and NLTS2 in post-high school outcomes for youth with disabilities. Chapter 2 describes the differences in youth's postsecondary education enrollment overall and in 2- and 4-year colleges and vocational or trade schools specifically; features of their educational experience, such as their primary focus of coursework and their postsecondary school completion goals and completion rates. Chapter 3

considers differences in the current employment status of out-of-high school youth with disabilities. Differences in characteristics of youth's current or most recent job and job search experiences also are described. Chapter 4 addresses differences in the extent to which youth with disabilities were productively engaged in school or work at the time of the interview.

Differences in the household circumstances of youth with disabilities are considered in chapter 5, including the extent to which they were living away from home, the prevalence of marriage and parenting, and aspects of their financial independence. The final chapter focuses on differences in the social and community involvement of youth with disabilities, including their community participation in both positive and negative ways, such as participation in organized groups and volunteer activities, and involvement with the criminal justice system.

This report documents the extent and direction of differences for post-high school youth with disabilities as a whole and for key subgroups. Findings are presented for youth in the nine federal special education disability categories that were in use in both 1987 and 2001, when NLTS and NLTS2 samples were selected. Differences also are described for youth with disabilities who varied in their school-completion status, their length of time since leaving high school, gender, their parents' household income, and their racial/ethnic category.

Appendix A provides details of the NLTS and NLTS2 design, sample, measures, and analysis approaches. Appendix B presents data on the characteristics of youth with disabilities included in the out-of-high school samples of both studies.



## 2. Comparisons Across Time of the Postsecondary Education of Youth With Disabilities

Over the past decades, enrollment in postsecondary education has become increasingly prevalent. For youth in the general population, “postsecondary enrollments are at an all-time high” (Ewell and Wellman 2007, p. 2).

Ensuring that students with disabilities have “access to and full participation in postsecondary education” has been identified as one of the key challenges in the future of secondary education and transition for such students (National Center on Secondary Education and Transition 2003, p. 1). Postsecondary education has been linked to increased earning potential for youth who continue their education after high school, even for those who have not earned a degree (Marcotte et al. 2005).

Students with disabilities increasingly are taking rigorous academic courses in high school, including college-preparatory courses, such as a foreign language and science. In 1987, 62 percent of high school youth with disabilities had taken a science class, and 6 percent had enrolled in a foreign language class. By 2003, 83 percent were taking science, and 21 percent were studying a foreign language, demonstrating significant increases in the types of courses needed to prepare for postsecondary education (Wagner, Newman, and Cameto 2004).

Differences between 2003 and 1987 are apparent not only in student course-taking but also in the expectations of parents for their adolescent children. When most youth included in this report were still in high school, parents were asked to report how likely they thought it was that their adolescent children with disabilities would reach several postsecondary education milestones (e.g., attend school after high school, graduate from a 2-year college). Postsecondary education, particularly graduation from a 2-year college, was considered by parents to be a much more likely option in 2001 than in 1987 for youth in all disability categories, for both boys and girls, for white and African American youth with disabilities, and for those at all income levels (Wagner, Cameto, and Newman 2003).

To what extent are these higher rates of academic course enrollment and parental expectation for students with disabilities accompanied by differences in postsecondary education participation? This chapter examines differences between postsecondary education enrollment of youth with disabilities who had been out of secondary school up to 4 years in 1990 (cohort 1) and 2005 (cohort 2), as measured in the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2), respectively. It focuses on participation in three types of institutions: 2-year/community colleges; 4-year colleges; and postsecondary vocational, technical, or business schools. The section begins with an examination of differences in enrollment rates at postsecondary institutions for youth with disabilities as a whole and for youth who varied in their disability category, high-school-exit status, years since leaving high school, gender, household income, and race/ethnicity. It concludes with findings regarding differences related to the experiences of students who attended postsecondary school.<sup>30</sup>

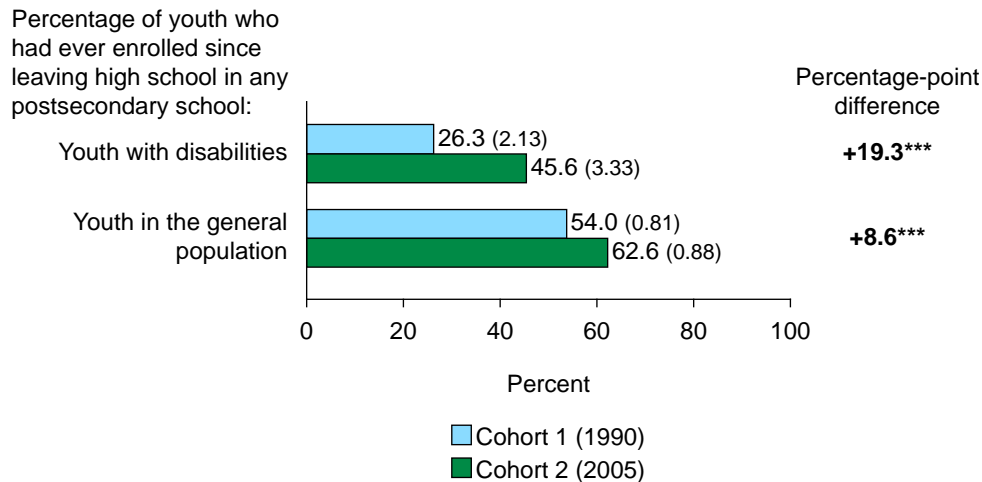
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<sup>30</sup> This chapter examines differences in postsecondary enrollment between 1990 and 2005. As described in Chapter 1, differences exist between NLTS and NLTS2 that have required analytic adjustments to make comparisons between the studies valid. Readers primarily interested in 2005 postsecondary enrollment rates and

## Postsecondary School Enrollment

Postsecondary school enrollment rates were higher in 2005 (cohort 2) than in 1990 (cohort 1) for youth with disabilities (figure 1).<sup>31</sup> Within 4 years of leaving high school, 46 percent of youth with disabilities in 2005 were reported ever to have enrolled in a postsecondary school; in contrast, 26 percent in 1995 were reported to have continued their education at the postsecondary level, a 19 percentage-point difference ( $p < .001$ ).

Figure 1. Comparison between 1990 and 2005 of postsecondary school enrollment since high school of youth with disabilities and youth in the general population out of high school up to 4 years



\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,600 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005. U.S. Census Bureau, Current Population Survey (CPS), 1990 and 2005 surveys, responses for 18- to 21-year-olds.

Youth with disabilities experienced a significantly larger difference in enrollment rates between 1990 and 2005 than did those in the general population. In comparison with the 19 percentage-point difference evidenced by youth with disabilities, similar-aged youth in the general population experienced a 9 percentage-point difference in college enrollment ( $p < .01$ ).<sup>32</sup> Despite the larger increase for youth with disabilities, they remained less likely than those in the general population ever to have been enrolled in postsecondary education. For youth with disabilities in cohort 2, 46 percent continued on to postsecondary education within 4 years of leaving high school, compared with 63 percent of similar-age youth in the general population ( $p < .001$ ).

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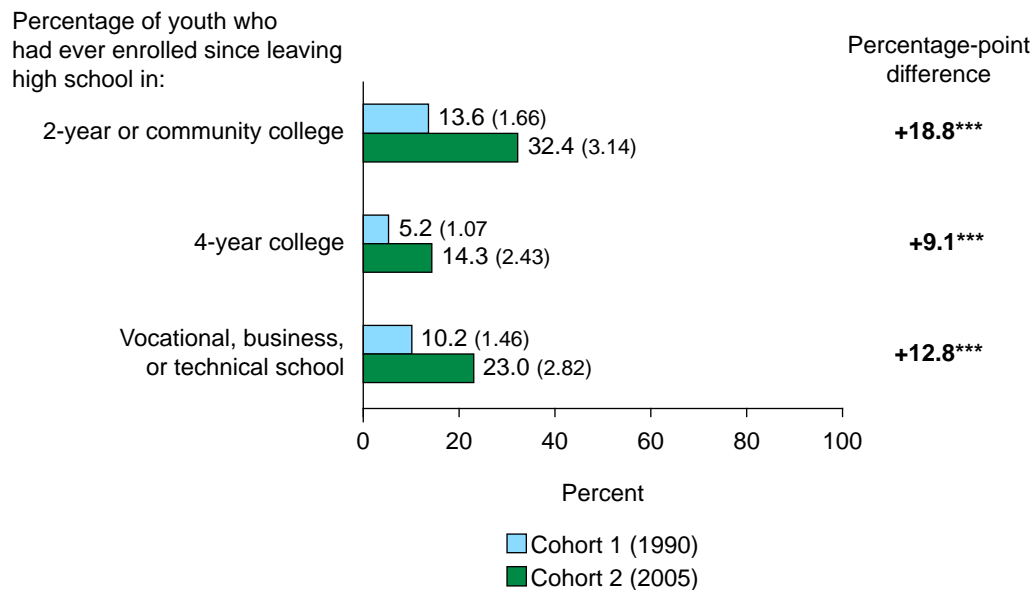
experiences are referred to the report *The Post-High School Outcomes of Youth With Disabilities up to 4 Years After High School* (Newman et al. 2009), available on the NLTS2 website, [www.nlts2.org](http://www.nlts2.org).

<sup>31</sup> In both studies respondents were asked, "Since leaving high school [have you/has *name of youth*] taken any classes from a [2-year, junior, or community college; vocational, business, or technical school; 4-year college ]?"

<sup>32</sup> U.S. Census Bureau, Current Population Survey (CPS), 1990 and 2005 surveys, responses for 18- to 21-year-olds.

Reported rates of ever having enrolled in postsecondary education were higher in 2005 than in 1990 for all types of postsecondary programs. Enrollment in a 2-year or community college evidenced a 19 percentage-point difference (14 percent vs. 32 percent,  $p < .001$ ), enrollment in a 4-year college or university demonstrated a 9 percentage-point difference (5 percent vs. 14 percent,  $p < .001$ ), and enrollment in a vocational, business, or technical school showed a 13 percentage-point difference (10 percent vs. 23 percent,  $p < .001$ ) between 1990 and 2005 (figure 2).

Figure 2. Comparison between 1990 and 2005 of postsecondary school enrollment since high school of youth with disabilities out of high school up to 4 years, by the type of postsecondary school



\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,600 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Postsecondary School Enrollment by Disability Category**

Reported rates of ever having enrolled in a postsecondary program ranged from 8 percent for youth with mental retardation to 58 percent for those with visual impairments in 1990, and from 28 percent for youth with mental retardation to 78 percent for those with visual impairments in 2005 (table 3). Youth in four of the nine disability categories experienced significantly higher postsecondary enrollment rates in 2005 than in 1990, specifically those with hearing impairments (73 percent vs. 50 percent), mental retardation (28 percent vs. 8 percent), learning disabilities (48 percent vs. 30 percent), and emotional disturbances (35 percent vs. 18 percent;  $p < .001$  for all comparisons).

Table 3. Comparison between 1990 and 2005 of postsecondary education enrollment of youth with disabilities out-of-high school up to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth who had ever enrolled since high school in:									
Any postsecondary school									
Cohort 1 (1990)	29.7 (3.26)	47.0 (5.55)	8.4 (2.49)	18.0 (3.62)	49.5 (2.97)	57.9 (4.14)	41.0 (5.08)	47.5 (6.24)	13.4 (5.10)
Cohort 2 (2005)	48.2 (5.01)	55.5 (5.28)	28.1 (5.21)	34.7 (4.87)	72.6 (5.62)	77.6 (7.06)	54.2 (5.54)	55.8 (4.76)	37.2 (7.80)
Percentage-point difference	<b>+18.5**</b>	+8.5	<b>+19.7***</b>	<b>+16.7**</b>	<b>+23.1***</b>	+19.7	+13.2	+8.3	+23.8
2-year or community college									
Cohort 1 (1990)	15.8 (2.60)	21.3 (4.55)	2.9 (1.51)	10.1 (2.84)	27.1 (2.64)	22.7 (3.51)	26.1 (4.55)	23.8 (5.32)	7.5 (3.92)
Cohort 2 (2005)	35.3 (4.79)	30.4 (4.87)	20.6 (4.70)	20.8 (4.16)	46.1 (6.31)	56.2 (8.45)	39.0 (5.42)	43.6 (4.76)	19.4 (6.38)
Percentage-point difference	<b>+19.5***</b>	+9.1	<b>+17.7***</b>	+10.7	<b>+19.0**</b>	<b>+33.5***</b>	+12.9	<b>+19.8**</b>	+11.9
4-year college									
Cohort 1 (1990)	5.0 (1.56)	20.5 (4.49)	0.9 (0.85)	1.3 (1.07)	16.3 (2.20)	33.1 (3.94)	13.2 (3.50)	19.9 (4.99)	4.7 (3.15)
Cohort 2 (2005)	16.2 (3.69)	26.3 (4.68)	4.7 (2.45)	5.6 (2.35)	31.3 (5.84)	43.6 (8.39)	20.8 (4.51)	14.0 (3.33)	12.0 (5.24)
Percentage-point difference	<b>+11.2**</b>	+5.8	+3.8	+4.3	+15.0	+10.5	+7.6	-5.9	+7.3
Vocational, business, or technical school									
Cohort 1 (1990)	12.5 (2.36)	9.0 (3.18)	4.7 (1.90)	6.9 (2.39)	12.6 (1.97)	8.9 (2.39)	6.6 (2.57)	8.4 (3.47)	2.1 (2.15)
Cohort 2 (2005)	22.6 (4.19)	23.3 (4.49)	20.2 (4.65)	23.5 (4.34)	31.8 (5.87)	11.9 (5.48)	21.1 (4.53)	32.1 (4.47)	16.3 (5.96)
Percentage-point difference	+10.1	<b>+14.3**</b>	<b>+15.5**</b>	<b>+16.6***</b>	<b>+19.2**</b>	+3.0	<b>+14.5**</b>	<b>+23.7***</b>	+14.2

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 2,470 to 2,480 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,590 to 2,600 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Despite the significantly higher enrollment rates experienced by youth with mental retardation and emotional disturbances in 2005 compared with 1990, youth in both disability categories remained among those disability categories least likely to attend postsecondary school. In 2005, 28 percent of youth with mental retardation and 35 percent of those with emotional disturbances ever had enrolled in a postsecondary program. Youth in several other disability categories evidenced higher enrollment rates than did youth in these two disability categories, including those with hearing or visual impairments (73 percent and 78 percent,  $p < .001$  for all comparisons with mental retardation and emotional disturbances); those with



speech/language, orthopedic, or youth in the category of other health impairment and autism (56 percent, 54 percent, and 56 percent,  $p < .001$  for all comparisons with mental retardation and  $p < .01$  for all comparisons with emotional disturbances); and youth with learning disabilities (48 percent,  $p < .01$  for comparison with mental retardation).

Postsecondary enrollment rates in 2-year or community colleges were higher in 2005 than 1990 for youth in 5 of the 9 disability categories. Youth with visual (56 percent vs. 23 percent,  $p < .001$ ) or hearing impairments (46 percent vs. 27 percent,  $p < .01$ ), youth in the category of other health impairment and autism (44 percent vs. 24 percent,  $p < .01$ ), youth with learning disabilities (35 percent vs. 16 percent,  $p < .001$ ), or mental retardation (21 percent vs. 3 percent,  $p < .001$ ) all had significantly higher rates of ever having enrolled in a 2-year college in 2005 than in 1990.

In 2005, rates of ever having enrolled in 4-year universities ranged from 5 percent of youth with mental retardation and 6 percent of those with emotional disturbances, to 31 percent of those with hearing impairments and 44 percent of those with visual impairments. In contrast with the other types of schools, only students with learning disabilities experienced significantly higher enrollment rates in 4-year colleges in 2005 compared with 1990. In 1990, 5 percent of youth with learning disabilities ever had enrolled in a 4-year college, by 2005 the rate was 16 percent, an 11 percentage-point difference ( $p < .01$ ).

Similar to rates of enrollment in 2-year colleges, rates of ever having enrolled in postsecondary vocational, business, or technical schools were higher in 2005 than 1990 for youth in 6 of the 9 disability categories, including youth in the category of other health impairment or autism (32 percent vs. 8 percent,  $p < .001$ ), youth with hearing impairments (32 percent vs. 13 percent,  $p < .01$ ), emotional disturbances (24 percent vs. 7 percent,  $p < .001$ ), mental retardation (20 percent vs. 5 percent,  $p < .01$ ), orthopedic (21 percent vs. 7 percent,  $p < .01$ ), or speech/language impairments (23 percent vs. 9 percent,  $p < .01$ ).

### ***Comparisons Across Time of Postsecondary School Enrollment by High School-Leaving Characteristics***

Across the various types of postsecondary programs, high school completers<sup>33</sup> consistently evidenced significantly higher rates in 2005 of ever having enrolled in postsecondary school than in 1990 (table 4). In 2005, 51 percent of high school completers reported ever having enrolled in a postsecondary program; a 16 percentage point higher rate than in 1990 ( $p < .001$ ). Rates of ever having enrolled in a postsecondary program for high school completers by type of program included 19 percentage-points higher in 2005 than in 1990 at 2-year or community colleges (37 percent vs. 19 percent,  $p < .001$ ), 9 percentage-points higher at 4-year universities (17 percent vs. 7 percent,  $p < .01$ ), and 12 percentage-points higher at vocational, business, or technical schools (24 percent vs. 12 percent,  $p < .001$ ).

In contrast, rates of ever having enrolled in postsecondary programs did not significantly differ between the two time periods for high school noncompleters, resulting in the continued

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<sup>33</sup> High school completers includes youth with disabilities who had left high school without finishing (e.g. dropped out or permanently expelled), but who later reentered a regular or alternative secondary school program or took an examination to obtain a General Educational Development (GED) credential, and had received a high school diploma or certificate.

gap between high school completers and noncompleters. In 1990, 34 percent of high school completers compared with 8 percent of noncompleters ever had enrolled in a postsecondary program ( $p < .001$ ). In 2005, 51 percent of completers versus 18 percent of noncompleters had continued on to postsecondary school ( $p < .001$ ).

Table 4. Comparison between 1990 and 2005 of postsecondary education enrollment of youth with disabilities out of high school up to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth who had ever enrolled since high school in:					
Any postsecondary school					
Cohort 1 (1990)	34.3 (2.76)	8.3 (2.42)	25.2 (3.67)	39.6 (3.80)	24.9 (3.45)
Cohort 2 (2005)	50.5 (3.67)	17.9 (6.25)	32.3 (5.15)	40.4 (6.08)	62.6 (5.53)
Percentage-point difference	<b>+16.2***</b>	+9.6	+7.1	+10.8	<b>+37.7***</b>
2-year or community college					
Cohort 1 (1990)	18.7 (2.26)	2.0 (1.23)	14.8 (3.00)	13.7 (2.86)	12.2 (2.61)
Cohort 2 (2005)	37.4 (3.55)	4.3 (3.33)	21.1 (4.51)	28.5 (5.61)	46.5 (5.70)
Percentage-point difference	<b>+18.7***</b>	+2.3	+6.3	+14.8	<b>+34.3***</b>
4-year college					
Cohort 1 (1990)	7.3 (1.51)	0.4 (0.55)	3.9 (1.64)	5.1 (1.83)	6.9 (2.02)
Cohort 2 (2005)	16.7 (2.74)	0.4 (1.03)	15.4 (3.97)	11.3 (3.93)	15.2 (4.10)
Percentage-point difference	<b>+9.4**</b>	0.0	<b>+11.5**</b>	+6.2	+8.3
Vocational, business, or technical school					
Cohort 1 (1990)	12.1 (1.89)	6.0 (2.08)	8.3 (2.33)	13.9 (2.88)	9.3 (2.32)
Cohort 2 (2005)	24.4 (3.15)	15.2 (5.86)	18.0 (4.23)	21.8 (5.12)	28.9 (5.18)
Percentage-point difference	<b>+12.3***</b>	+9.2	+9.7	+7.9	<b>+19.6***</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 2,470 to 2,480 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,590 to 2,600 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Differences in postsecondary enrollment rates between the two cohorts, by length of time out of high school, primarily were evident for those who had been out of high school longer. Youth with disabilities in 2005 who had left high school from 2 to 4 years earlier were 38 percentage points more likely ever to have enrolled in a postsecondary program (63 percent vs. 25 percent,  $p < .001$ ), 34 percentage points more likely ever to have enrolled in a 2-year college (47 percent vs. 12 percent,  $p < .001$ ), and 20 percentage points more likely ever to have

enrolled in a vocational, business, or technical school (29 percent vs. 9 percent,  $p < .001$ ) than were those who had been out of high school a similar length of time in 1990.

### ***Comparisons Across Time of Postsecondary School Enrollment by Demographic Characteristics***

Youth with disabilities in cohort 2 in the highest as well as the lowest parent household income categories were more likely than youth with disabilities in cohort 1 ever to have enrolled in a postsecondary school. In 2005, 72 percent of youth with disabilities in the highest income group ever had enrolled, compared with 45 percent of youth with disabilities in the highest income group in 1990 ( $p < .001$ ), a 28 percentage-point difference (table 5). Thirty-five percent of those in the lowest income group had ever enrolled in 2005, compared with 19 percent in 1990, a 16 percentage-point difference ( $p < .001$ ). Despite the significantly higher enrollment rates experienced by youth with disabilities in the lowest income category in 2005 compared with 1990, those from the highest income households experienced a larger difference (16 percentage points vs. 28 percentage points,  $p < .01$ ), thereby continuing the gap in postsecondary enrollment rates between those from the highest and lowest income households. In 2005, 72 percent of youth with disabilities from families with the highest incomes had continued their education after high school, compared with 35 percent of youth with disabilities from the lowest income households ( $p < .001$ ).

Postsecondary enrollment rates in 2005 also were higher for youth with disabilities from the highest income category than for those in the middle income category (47 percent vs. 72 percent,  $p < .01$ ). Youth with disabilities in the middle income category did not experience a significant difference in their postsecondary enrollment rate between 1990 and 2005.

Youth with disabilities in all income categories experienced higher 2-year college enrollment rates in 2005 than in 1990, with a 14 percentage-point difference for youth with disabilities in the lowest income group (22 percent vs. 8 percent,  $p < .01$ ), a 14 percentage-point difference for those in the middle income group (36 percent vs. 15 percent,  $p < .01$ ), and a 22 percentage-point difference for those in the highest income group (49 percent vs. 27 percent,  $p < .01$ ).

Differences in 4-year college enrollment rates only were significant for those from the highest income households. Thirty-five percent of those from households with the highest incomes in 2005 ever had enrolled in a 4-year university, in comparison with 8 percent who had ever enrolled in 1990, a 28 percentage-point difference ( $p < .001$ ). This difference in enrollment rates resulted in a gap in enrollment in 4-year colleges between those in the highest income and other categories. In 1990, enrollment in 4-year colleges did not significantly differ by household income. In contrast, in 2005 youth with disabilities from the highest income households were more likely ever to have enrolled in a 4-year university (35 percent) than were those from the middle (13 percent,  $p < .01$ ) or lowest (9 percent,  $p < .001$ ) income categories.

Enrollment rates at vocational, business, or technical schools only significantly differed between 1990 and 2005 for youth with disabilities from the lowest income households, with a 13 percentage-point difference (9 percent vs. 23 percent,  $p < .01$ ).

Table 5. Comparison between 1990 and 2005 of postsecondary education enrollment of youth with disabilities out of high school up to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth who had ever enrolled since high school in:								
Any postsecondary school								
Cohort 1 (1990)	18.5 (3.04)	28.7 (4.07)	44.7 (5.36)	27.2 (2.63)	26.8 (5.28)	33.6 (9.12)	24.5 (2.52)	30.5 (3.94)
Cohort 2 (2005)	34.5 (4.91)	46.9 (6.52)	72.2 (6.22)	46.8 (4.10)	45.4 (6.96)	40.3 (10.63)	44.0 (4.12)	49.1 (5.60)
Percentage-point difference	<b>+16.0**</b>	+18.2	<b>+27.5***</b>	<b>+19.6***</b>	+18.6	+6.7	<b>+19.5***</b>	<b>+18.6**</b>
2-year or community college								
Cohort 1 (1990)	8.1 (2.14)	14.6 (3.17)	26.7 (4.77)	14.5 (2.08)	12.8 (3.99)	15.7 (7.04)	11.8 (1.89)	17.9 (3.29)
Cohort 2 (2005)	21.6 (4.25)	36.4 (6.28)	49.1 (6.94)	33.1 (3.87)	34.5 (6.65)	27.2 (9.71)	30.1 (3.81)	37.6 (5.44)
Percentage-point difference	<b>+13.5**</b>	<b>+21.8**</b>	<b>+22.4**</b>	<b>+18.6***</b>	<b>+21.7**</b>	+11.5	<b>+18.3***</b>	<b>+19.7**</b>
4-year college								
Cohort 1 (1990)	3.3 (1.40)	6.4 (2.20)	7.7 (2.86)	5.3 (1.32)	6.2 (2.88)	4.3 (3.91)	4.6 (1.23)	6.5 (2.11)
Cohort 2 (2005)	8.9 (2.94)	12.7 (4.35)	35.3 (6.63)	16.2 (3.03)	5.3 (3.13)	15.4 (7.82)	15.5 (3.00)	11.4 (3.56)
Percentage-point difference	+5.6	+6.3	<b>+27.6***</b>	<b>+10.9***</b>	-0.9	+11.1	<b>+10.9***</b>	+4.9
Vocational, business, or technical school								
Cohort 1 (1990)	9.2 (2.26)	10.5 (2.76)	14.6 (3.79)	9.7 (1.75)	14.0 (4.14)	14.3 (6.75)	10.1 (1.76)	10.2 (2.59)
Cohort 2 (2005)	22.5 (4.32)	25.2 (5.67)	20.3 (5.58)	20.7 (3.33)	28.0 (6.28)	25.1 (9.40)	22.1 (3.44)	25.0 (4.85)
Percentage-point difference	<b>+13.3**</b>	+14.7	+5.7	<b>+11.0**</b>	+14.0	+10.8	<b>+12.0**</b>	<b>+14.8**</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 2,470 to 2,480 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,590 to 2,600 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Across the race/ethnicity categories of White, African American, and Hispanic, only White youth with disabilities experienced significantly higher enrollment rates at the various types of postsecondary programs between 1990 and 2005, with the exception of enrollment in 2-year colleges, where African American youth with disabilities also experienced higher enrollment rates in 2005 than in 1990 (35 percent vs. 13 percent,  $p < .01$ ). White youth with disabilities in 2005 were more likely than in 1990 ever to have enrolled in any postsecondary program (47 percent vs. 27 percent,  $p < .001$ ), a 2-year college (33 percent vs. 15 percent,  $p < .001$ ), a 4-year university (16 percent vs. 5 percent,  $p < .001$ ), and a vocational, business, or technical school (21 percent vs. 10 percent,  $p < .01$ ).

Both males and females experienced significantly higher rates of enrollment between cohorts across most types of postsecondary schools. Differences between 1990 and 2005 in ever having enrolled in any postsecondary program were 20 percentage-points for males ( $p < .001$ ) and 19 percentage points for females ( $p < .01$ ). Differences by gender in 2-year college enrollment were 18 percentage points ( $p < .001$ ) and 20 percentage points ( $p < .01$ ), and at vocational, business, or technical school, differences in enrollment were 12 and 15 percentage points ( $p < .01$  for both comparisons) for males and females, respectively. Only males experienced significantly higher 4-year college enrollment rates, an 11 percentage-point difference between cohorts ( $p < .001$ ). Despite the significant difference experienced by males but not by females, in 2005, 4-year college enrollment did not significantly differ by gender.

### Postsecondary School Experiences

The findings reported thus far indicate that youth with disabilities differed between 1990 and 2005 in their rates of enrollment in postsecondary programs. This section shifts the focus from enrollment to comparisons between 1990 and 2005 of the experiences of those who had enrolled in these types of programs.

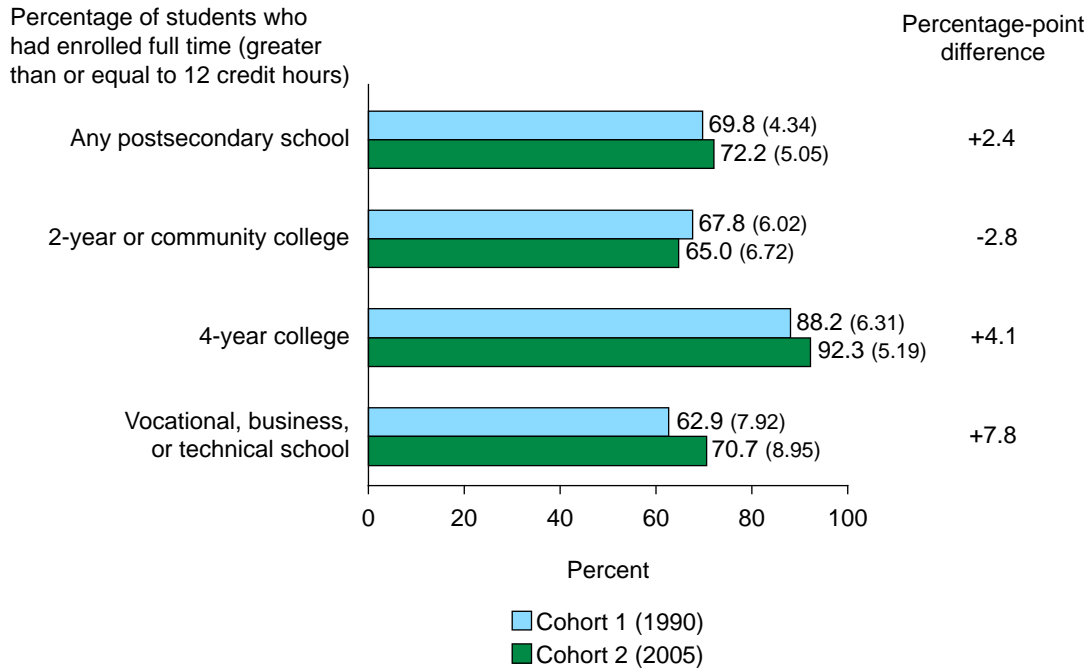
The original NLTS study measured many fewer postsecondary school experiences than did NLTS2. The NLTS2 report, *The Post-High School Outcomes of Youth With Disabilities up to 4 Years After High School* (Newman et al. 2009) presents findings related to the postsecondary school experiences described by NLTS2 but not NLTS, such as timing of enrollment, course of study at each type of postsecondary school, and receipt of accommodations and supports. The measures related to postsecondary experiences that were included in both NLTS and NLTS2 and reported here are intensity of enrollment, specifically whether students were enrolled on a full- or part-time basis, primary focus of study of those enrolled in 2-year or community college, goals related to postsecondary completion, and postsecondary completion rates.<sup>34</sup>

**Intensity.** In 1990, 70 percent of students were enrolled full time in postsecondary education, and in 2005, postsecondary school was a full-time commitment for 72 percent of students with disabilities (figure 3, not a significant difference).

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<sup>34</sup> There were too few students enrolled in postsecondary schools in 1990 to support presenting findings separately by disability category, high school leaving characteristics, or demographics.

Figure 3. Comparison between 1990 and 2005 of full-time enrollment of youth with disabilities out of high school up to 4 years and ever had enrolled in postsecondary school



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 230 to 990 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 320 to 1,090 youth with disabilities across variables.

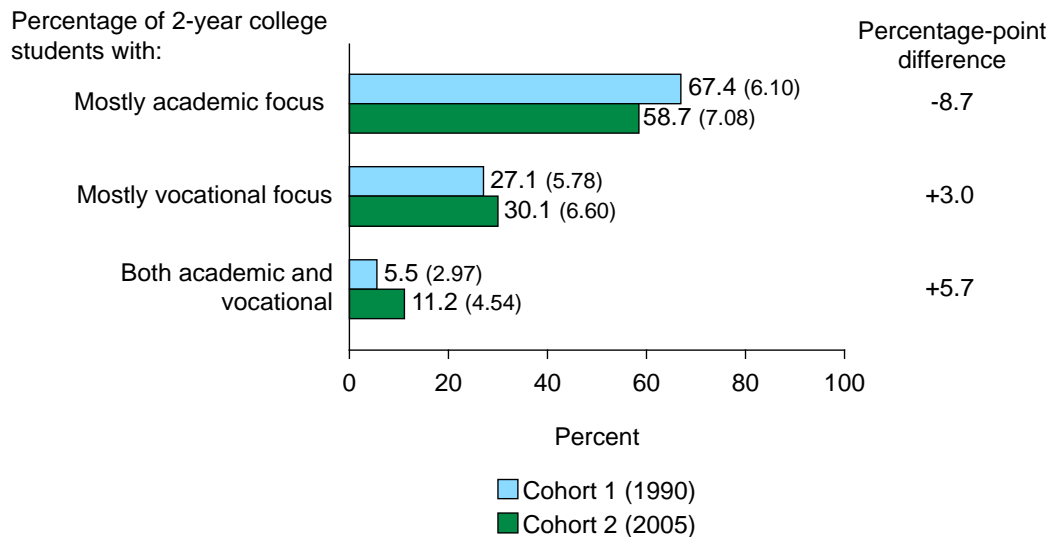
SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

**Primary focus of coursework at 2-year colleges.** Two-year and community colleges frequently offer a wide range of instructional program options. With this wide range of options, students with disabilities varied in the types of courses they took while in postsecondary school. The primary focus of coursework at 2-year colleges did not differ significantly between 1990 and 2005 (figure 4).<sup>35</sup> At both points in time, 2-year or community college students were more likely to report being enrolled in an academic than in a vocational course of study; 67 percent majored in an academic and 27 percent in a vocational area in 1990 ( $p < .001$ ), and 59 percent had an academic and 30 percent a vocational focus in 2005 ( $p < .01$ ).

<sup>35</sup> NLTS respondents at 2-year colleges were asked, “[Have you/has *name of youth*] taken mostly vocational courses in a 2-year, junior, or community college to train for a job, like auto repair or office work, or have you taken mostly academic courses, like English or science?”

NLTS2 respondents at 2-year colleges were asked, “[Have you/has *name of youth*] taken mostly vocational courses to train for a job, like computer or business courses, or have you taken mostly academic courses, like English or science?”

Figure 4. Comparison between 1990 and 2005 of primary focus of courses taken at a 2-year or community college by youth with disabilities out of high school up to 4 years and had ever enrolled in postsecondary school



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 480 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 640 youth with disabilities across variables.

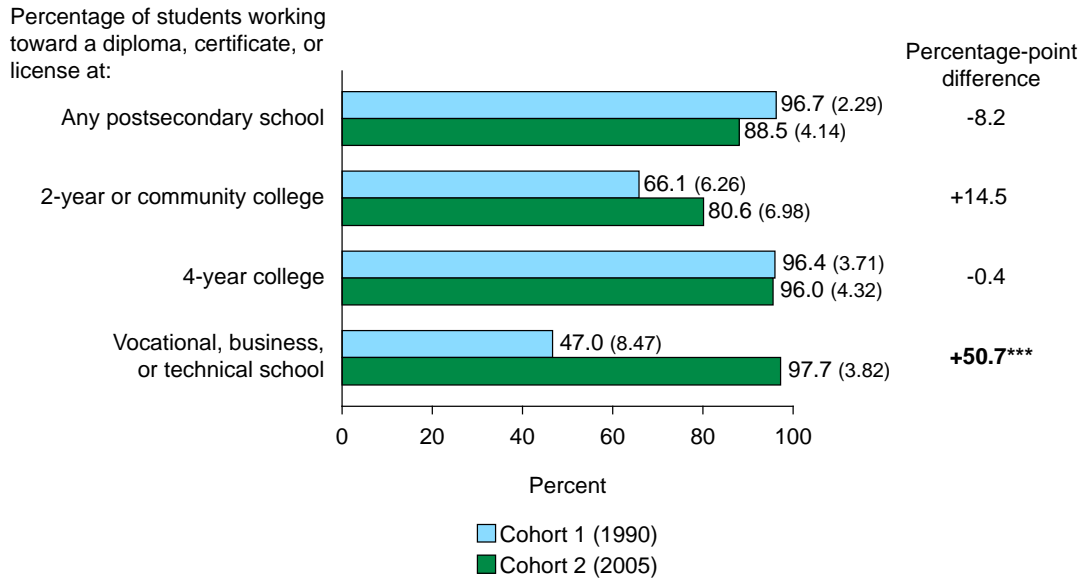
SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

**Postsecondary school completion goals.** The economic benefits associated with college enrollment frequently are not realized by those who begin postsecondary education but fail to graduate. For example, the earning gap between those with a bachelor’s degree and those with only a high school diploma has continuously widened over the past 30 years, whereas those who enroll in college but don’t graduate have “made only slight gains” (Carey 2004, p. 3).

In both cohorts, the majority of students with disabilities who attended postsecondary school envisioned themselves graduating from the institution.<sup>36</sup> In 1990, 97 percent, and in 2005, 89 percent of students with disabilities who were currently enrolled in postsecondary school asserted that they were “working toward a diploma, certificate, or license” (figure 5). Assertions related to school completion did not differ significantly between 1990 and 2005 at most types of postsecondary schools, with the exception of vocational, business, or technical schools. Vocational, business, or technical school students in 2005 were approximately twice as likely as those in 1990 (98 percent vs. 47 percent,  $p < .001$ ) to state that they were working toward a diploma, certificate or license, a 51 percentage-point difference ( $p < .001$ ).

<sup>36</sup> In both studies respondents were asked, “[Are you/is *name of youth*] working toward a diploma, certificate, or license from this work?”

Figure 5. Comparison between 1990 and 2005 of school completion goal of postsecondary students with disabilities out of high school up to 4 years and enrolled at the time of the interview



\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 220 to 610 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 180 to 830 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

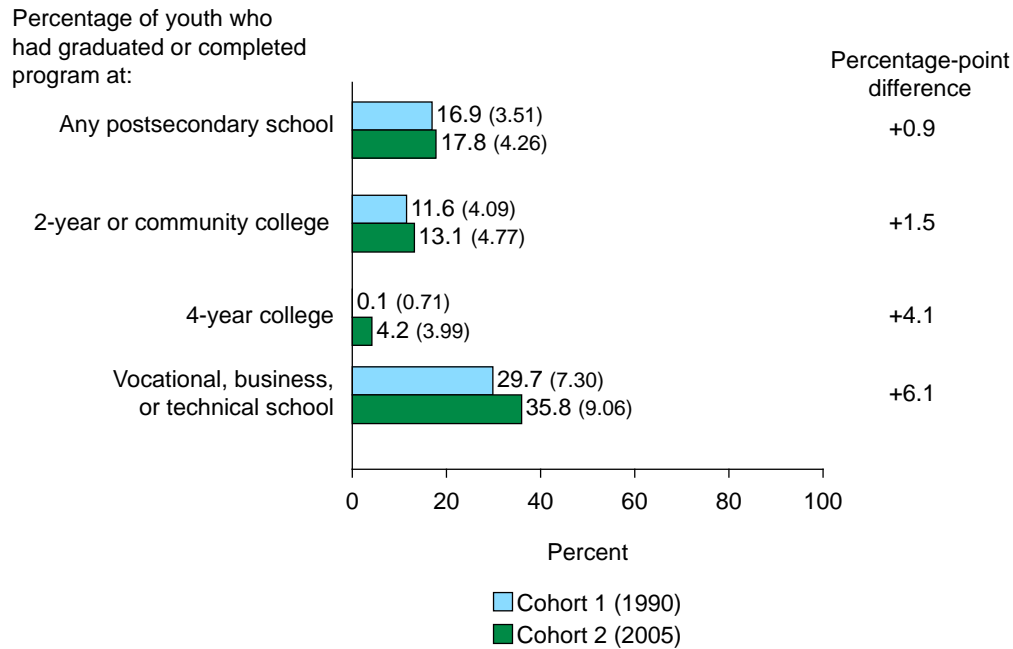
**Postsecondary school completion rates.** Despite the majority of postsecondary students asserting they were working toward a diploma, in both cohorts, when students left their postsecondary schools, few left because they had graduated or completed their programs.<sup>37</sup> Eighteen percent of postsecondary school leavers in 2005 and 17 percent in 1990 had completed their postsecondary program (figure 6).<sup>38</sup> Postsecondary completion rates did not differ significantly between 1990 and 2005 across types of postsecondary schools.

<sup>37</sup> In both studies respondents who had been in a postsecondary program earlier, but were not currently enrolled were asked, “[Have you/has *name of youth*] gotten a diploma, certificate, or license from [a postsecondary school]?”

<sup>38</sup> It is important to note that many youth in both NLTS and NLTS2 were out of high for less than one year in 1990 and 2005. Few youth who had ever enrolled in a postsecondary school and had since left the school would have been in their programs long enough to realistically be expected to have completed the program.



Figure 6. Comparison between 1990 and 2005 of postsecondary school completion of youth with disabilities out of high school up to 4 years and ever enrolled in postsecondary school



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 250 to 190 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 250 to 1,120 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Summary

This chapter compared the postsecondary enrollment and experiences of youth with disabilities who had been out of secondary school up to 4 years in 1990 and in 2005. Postsecondary school enrollment rates were higher in 2005 than in 1995, with 46 percent of youth with disabilities in 2005 reported ever to have enrolled in a postsecondary school, compared with 26 percent in 1995.

Youth with disabilities experienced a significantly larger difference in enrollment rates between 1990 and 2005 than did those in the general population (19 percentage points vs. 9 percentage points). Despite the larger difference for youth with disabilities, the gap in postsecondary attendance rates between the two groups continued. Forty-six percent of youth with disabilities ever had enrolled in postsecondary education in 2005, compared with 63 percent of similar-age youth in the general population.

Rates of ever having enrolled in postsecondary education were higher in 2005 than in 1990, across the types of postsecondary programs. Enrollment in 2-year and 4-year colleges, vocational, business, or technical schools demonstrated 19, 9, and 13 percentage-point differences between 1990 and 2005, respectively.

Youth in four of nine disability categories experienced significantly higher rates of ever having enrolled in postsecondary programs in 2005 than in 1990, specifically those with hearing impairments (23 percentage-point difference), mental retardation (20 percentage-point difference) learning disabilities (19 percentage-point difference), and emotional disturbances (17 percentage-point difference).

Across the various types of postsecondary programs, high school completers consistently evidenced significantly higher rates of having ever enrolled in postsecondary school in 2005 than in 1990. The rate of ever having enrolled in a postsecondary program for high school completers was 16 percentage points higher in 2005 compared with 1990. In contrast, rates were not significantly different between the two time periods for high school noncompleters, resulting in the continued gap between high school completers and noncompleters.

Youth with disabilities in the highest as well as the lowest parent household income categories were more likely to be enrolled in a postsecondary school in 2005 than in 1990. Youth with disabilities from families in the lowest income group experienced a 16 percentage-point difference, while those from families with higher incomes evidenced a 28 percentage-point difference in enrollment rates. Despite the significantly higher enrollment rates experienced by youth in the lowest income category in 2005 compared with 1990, those from the highest income households experienced a larger difference, thereby continuing the gap in postsecondary enrollment rates between those from the highest and lowest income households.

In examining differences by race or ethnicity, White youth with disabilities experienced significantly higher enrollment rates in 2005 compared with 1990 across the various types of postsecondary programs: 20 percentage points in any postsecondary program, 19 percentage points in 2-year colleges, 11 percentage points in 4-year colleges, and 11 percentage points in vocational, business, or technical schools. African American youth with disabilities experienced higher enrollment rates in 2005 compared with 1990 in 2-year colleges: 22 percentage points.

Both males and females had significantly higher rates of enrollment across types of postsecondary school in 2005 compared with 1990. For example, males experienced a 20 percentage-point and females a 19 percentage-point difference between cohorts in enrollment in any postsecondary school.

The measures related to postsecondary experiences that were included in both NLTS and NLTS2 were intensity of enrollment, specifically whether students were enrolled on a full- or part-time basis, primary focus of study of those enrolled in 2-year or community colleges, goals related to postsecondary completion, and postsecondary completion rates. None of these measures varied significantly between 1990 and 2005, with the exception of postsecondary completion goals, where vocational, business, or technical school students in 2005 were approximately twice as likely as those in 1990 (98 percent vs. 47 percent) to state that they were working toward a diploma, certificate or license, a 51 percentage point difference.

This chapter has presented differences in the postsecondary experiences of youth with disabilities. Chapter 3 will examine differences in employment experiences, and chapter 4 will focus on the overlap between these two outcomes, describing differences in engagement in school or work.

### 3. Comparisons Across Time of the Employment of Out-of-High School Youth With Disabilities

Employment is a pathway to financial independence and self-reliance for all youth as they move toward adulthood. Rogan, Grossi, and Gajewski (2002) stated, “Work is a central component of a quality adult life. Employment provides a source of income, enhances self-esteem, provides important social connections, and allows people to fulfill their duties as contributing, tax-paying citizens” (p.104). Preparation of students with disabilities for post-school activities including employment is federally mandated. IDEA 1990 defined transition services and required that a statement of needed transition services be included in the Individualized Education Program (IEP) transition programs of each student with a disability. Subsequent amendments to IDEA in 1997 and 2004 related to transition focused on school accountability for post-school outcomes (Council for Exceptional Children 2004). Achieving employment is the primary transition goal of the majority of high school students with disabilities (Cameto, Levine, and Wagner 2004).

As youth enter young adulthood, a goal of finding and keeping a job remains important, but equally important as youth participate in the labor market is having employment that offers benefits, pays a living wage, and presents opportunities for advancement (Flannery et al. 2008). Employment options for youth with disabilities in the first years out of secondary school have tended toward service, unskilled labor, and blue-collar industries (Benz, Lindstrom, and Yovanoff 2000; Wagner et al. 1992; Wagner, Newman, Cameto, Garza, et al. 2005), and these are the jobs least likely to have good benefits with high wages.

Information about the employment-related experiences that youth with disabilities have during the early years after high school can provide practitioners, researchers, and policymakers insight into the effectiveness and impact of special education transition services. This chapter examines the differences between 1990 and 2005 in the employment status and job characteristics of youth with disabilities who had been out of high school 1 to 4 years, as measured in the National Longitudinal Transition Study (NLTS; cohort 1) and the National Longitudinal Transition Study-2 (NLTS2; cohort 2). Specifically, this chapter addresses:

- **Employment status:** Being employed at the time of the interview.<sup>39</sup>
- **Characteristics of current job:** Duration, type of employment, hours worked per week, hourly wage, receipt of paid vacation or sick leave or health insurance, and youth with disabilities’ perceptions of working conditions and satisfaction with their job.

These factors are described for youth with disabilities as a whole and for those who differed in their primary disability classification, school-leaving characteristics, and selected demographic characteristics.

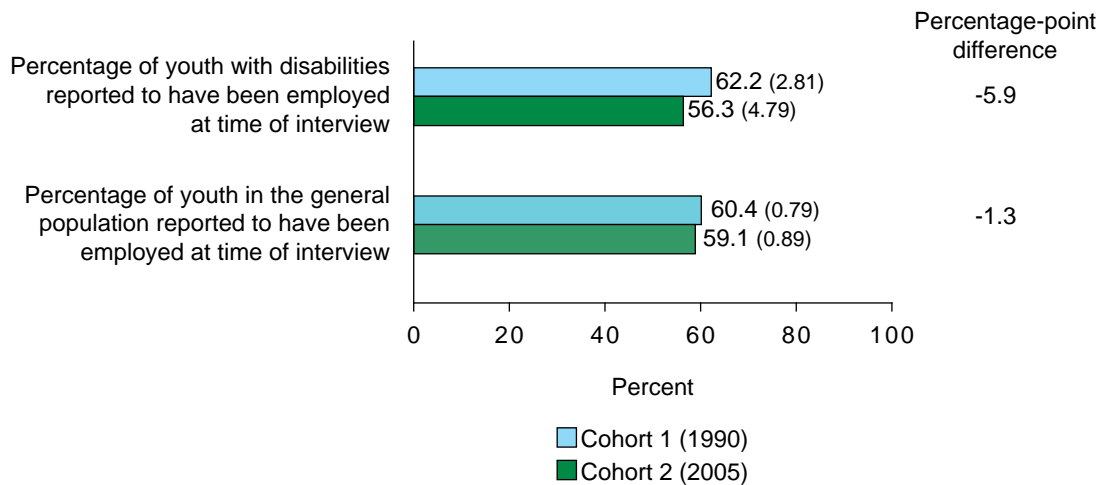
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<sup>39</sup> Differences between NLTS and NLTS2 in the time period indicated in the wording of the employment items did not support analysis of comparisons between studies in employment since high school.

## Employment Status

The reported employment rates of out-of-high school youth with disabilities in 1990 and 2005 at the time of the interview were 62 percent and 56 percent, respectively (figure 7).<sup>40</sup> These rates of employment did not significantly differ between 1990 and 2005. The employment rates of same-age out-of-high school youth in the general population in 1990 and 2005 was 60 percent and 59 percent employed at the time of interview,<sup>41</sup> respectively, also not a significant difference.

Figure 7. Comparisons between 1990 and 2005 of paid employment outside the home of youth with disabilities and youth in the general population out of high school 1 to 4 years



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,710 to 2,280 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,970 to 2,350 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005; U.S. Census Bureau, Current Population Survey (CPS), 1990, 2005.

<sup>40</sup> NLTS respondents out of high school were asked, “[Do you/does *name of youth*] have a job now (other than your work study job)?” NLTS2 respondents out of high school were asked, “[Do you/does *name of youth*] have a paid job now, other than work around the house?”

<sup>41</sup> Calculated for 18- through 21-year-old out-of-high school youth using data from the Current Population Survey (CPS; U.S. Census Bureau). The reader should note that general population data are for youth out of high school less than 1 year up to 4 years whereas NLTS and NLTS2 data are for youth out of high school between 1 and 4 years.

### **Comparisons Across Time of Employment Status by Disability Category**

Employment rates at the time of the interview ranged from 32 percent of youth with orthopedic impairments to 69 percent of youth with learning disabilities in 1990 and from 33 percent of youth with orthopedic impairments to 71 percent of youth in the category of other health impairments and autism in 2005 (table 6). Employment rates did not differ significantly between 1990 and 2005 by disability category.

Table 6. Comparisons between 1990 and 2005 of paid employment outside the home of youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth reported to have been employed at time of interview:									
Cohort 1 (1990)	69.3 (3.98)	62.8 (6.48)	46.5 (5.28)	59.4 (5.57)	38.3 (3.53)	35.1 (5.11)	32.4 (5.98)	57.9 (7.87)	36.0 (9.94)
Cohort 2 (2005)	62.5 (7.13)	64.5 (7.62)	29.8 (8.53)	40.5 (7.01)	61.2 (8.93)	45.4 (11.17)	32.6 (7.45)	71.4 (6.01)	50.2 (14.31)
Percentage-point difference	-6.8	+1.7	-16.7	-18.9	+22.9	+10.3	+0.2	+13.5	+14.2

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,710 to 2,280 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,260 to 2,350 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Employment Status by High School-Leaving Characteristics**

Employment rates at the time of the interview did not differ significantly between 1990 and 2005 for youth with disabilities who differed in their school-leaving status or in the length of time they had been out of high school (table 7). Rates were 69 percent and 50 percent for high school completers and noncompleters, respectively, in 1990, and 59 percent and 40 percent for both groups, respectively, in 2005. Rates were 62 percent for those who had been out of high school for 1 to 2 years as well as those out from 2 to 4 years in 1990, and 50 percent and 62 percent, respectively, in 2005.

Table 7. Comparisons between 1990 and 2005 of paid employment outside the home of youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth reported to have been employed at time of interview:					
Cohort 1 (1990)	68.7 (3.30)	50.4 (5.02)	‡	62.2 (4.05)	62.2 (3.91)
Cohort 2 (2005)	59.3 (5.16)	40.1 (12.09)	‡	49.5 (6.69)	61.8 (6.67)
Percentage-point difference	-9.4	-10.3		-12.7	-0.4

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,710 to 2,280 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,260 to 2,350 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparisons Across Time of Employment Status by Demographic Characteristics***

Similar to analyses reported thus far, there were no significant differences in employment status between 1990 and 2005 for youth with disabilities who differed in household income, race/ethnicity, or gender (table 8). Employment rates ranged from 55 percent of youth with disabilities in the lowest income group to 78 percent of those in the highest at the time of the interview in 1990 and from 49 percent to 61 percent of youth with disabilities in the two income groups, respectively, in 2005. At the time of the 1990 interview, employment rates ranged by racial/ethnic categories from 44 percent of African American youth with disabilities to 68 percent of White youth with disabilities, whereas in 2005 from 35 percent to 64 percent of the same two groups had been employed. Similarly, 69 percent and 47 percent of male and female youth with disabilities, respectively, had been employed at the time of the interview in 1990, compared with 62 percent and 44 percent in 2005.

Table 8. Comparisons between 1990 and 2005 of paid employment outside the home of youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth reported to have been employed at time of interview:								
Cohort 1 (1990)	54.9 (4.71)	64.7 (5.06)	77.5 (5.32)	68.3 (3.27)	44.4 (7.27)	57.6 (10.70)	69.4 (3.25)	46.6 (5.10)
Cohort 2 (2005)	48.8 (7.07)	60.1 (9.34)	60.7 (10.41)	63.6 (5.83)	35.2 (9.84)	54.1 (14.03)	62.0 (5.78)	43.6 (8.13)
Percentage-point difference	-6.1	-4.6	-16.8	-4.7	-9.2	-3.5	-7.4	-3.0

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,710 to 2,280 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,260 to 2,350 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Employment Characteristics

To gain a more thorough understanding of how the nature of employment for youth with disabilities compares across time, this section focuses on comparisons between 1990 and 2005 of employment characteristics, including job duration, full-time employment, wages and benefits, types of jobs, and perceptions of working conditions.

### ***Comparisons Across Time of Job Duration and Full-Time Employment***

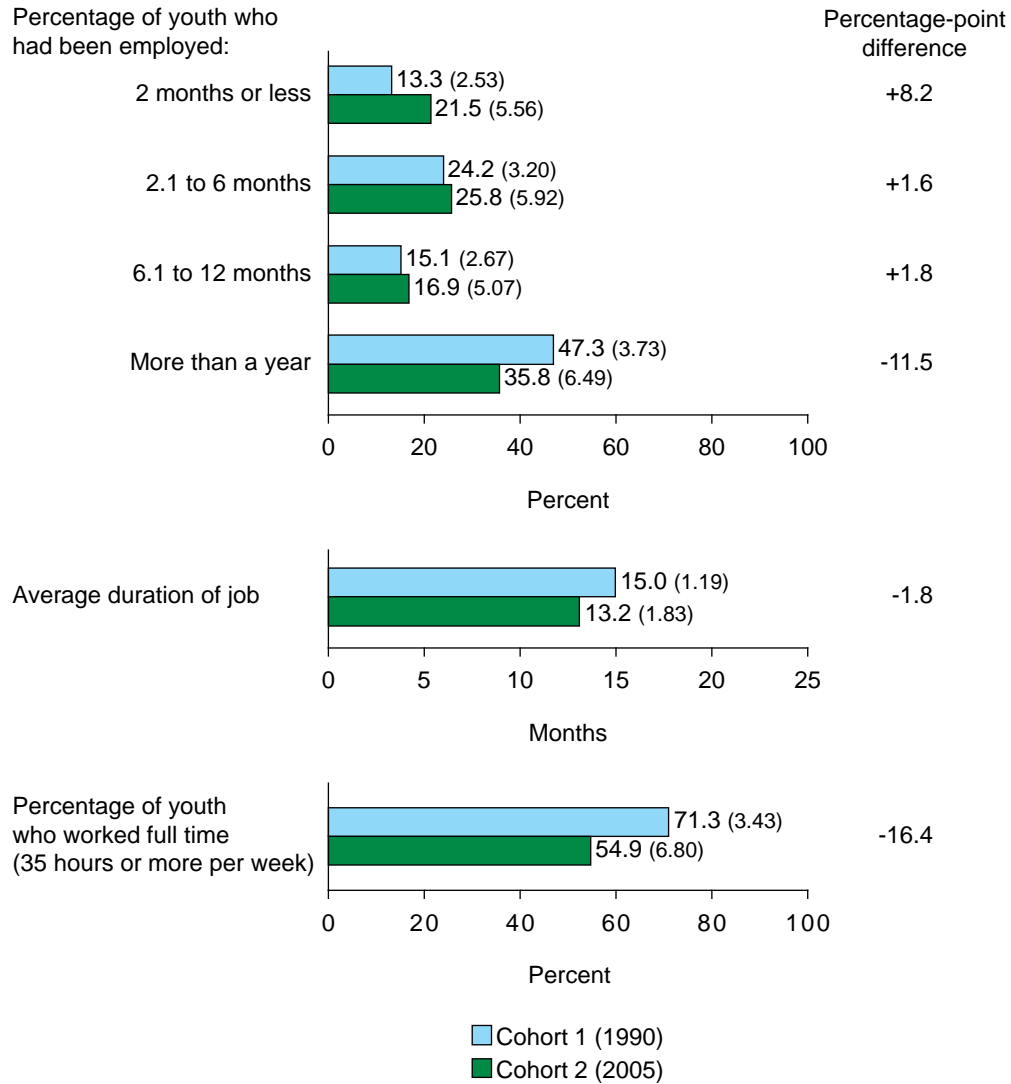
On average, employed youth with disabilities who had been out of high school between 1 and 4 years had been at their current job 15 months in 1990 and for 13 months in 2005, not a significant difference (figure 8).<sup>42</sup> In 1990 length of time at their current employment ranged from 13 percent employed for 2 months or less to 47 percent employed for more than a year. In 2005, duration ranged from 22 percent to 36 percent, respectively.

The percentage of youth with disabilities employed full time (35 hours or more per week) was 71 percent in 1990 and 55 percent in 2005. On average, youth with disabilities worked 38 hours per week in 1990 and 35 hours in 2005.<sup>43</sup> Hours worked per week did not differ significantly between 1990 and 2005.

<sup>42</sup> Respondents to both studies who were employed at the time of the interview were asked, “About how long [have you/has *name of youth*] had this job?”

<sup>43</sup> Respondents to both studies who were employed at the time of the interview were asked, “About how many hours a week [do you/does *name of youth*] usually work at this job?”

Figure 8. Comparisons between 1990 and 2005 of job duration and full-time employment of youth with disabilities out of high school 1 to 4 years who were employed at the time of the interview



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years and who were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 840 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 890 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.



### Comparisons Across Time of Job Duration and Full-Time Employment by Disability Category

For youth with disabilities reported to be employed at the time of the interview, average job duration at their current job ranged from 11 months for youth with visual impairments to 17 months for youth with orthopedic impairments in 1990 and from 11 months for youth with orthopedic impairments to 17 months for youth with visual impairments in 2005 (table 9). Average job duration did not differ significantly between 1990 and 2005 by disability category.

Table 9. Comparisons between 1990 and 2005 of job duration and full-time employment at the time of the interview, of youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Average job duration at time of interview (months):									
Cohort 1 (1990)	15.7 (1.72)	14.4 (2.52)	14.4 (2.08)	11.9 (1.76)	12.5 (1.66)	11.1 (2.00)	16.6 (3.67)	15.7 (3.16)	‡
Cohort 2 (2005)	12.9 (2.37)	15.9 (3.54)	‡	12.6 (3.38)	11.5 (3.57)	17.1 (4.59)	10.8 (2.68)	12.0 (2.35)	21.2 (6.34)
Difference in months	-2.8	+1.5		+0.7	-1.0	+6.0	-5.8	-3.7	
Percentage of youth reported to have worked full time (35 hours or more per week):									
Cohort 1 (1990)	75.2 (4.50)	41.9 (8.29)	67.3 (7.22)	68.6 (7.01)	49.6 (5.89)	44.1 (9.05)	47.1 (11.69)	58.7 (10.46)	‡
Cohort 2 (2005)	57.0 (9.54)	37.8 (9.78)	‡	66.9 (9.27)	34.2 (12.27)	18.6 (14.11)	41.1 (14.46)	48.6 (8.32)	51.2 (21.58)
Percentage-point difference	-18.2	-4.1		-1.7	-15.4	-25.5	-5.7	-10.1	

‡ Responses for items with fewer than 30 respondents are not reported.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 840 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Similarly, full-time employment did not differ significantly between the two time periods. In 1990, the percentage that reported full-time employment at their current job ranged between 44 percent of youth with visual impairments and 75 percent of those with learning disabilities. In 2005, the percentage of youth with disabilities reporting full-time employment ranged between 19 percent of those with visual impairments and 67 percent of youth with emotional disturbances.

### Comparisons Across Time of Job Duration and Full-Time Employment by High School Leaving Status

Rates of employment duration and full-time employment at the time of the interview did not differ significantly between 1990 and 2005 by high school completion status or length of time out of high school (table 10).

Table 10. Comparisons between 1990 and 2005 of job duration and full-time employment at the time of the interview of youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Average duration of job (months):					
Cohort 1 (1990)	15.7 (1.46)	13.1 (1.91)	‡	11.0 (1.16)	18.6 (1.92)
Cohort 2 (2005)	13.1 (1.91)	13.9 (5.78)	‡	13.3 (2.99)	13.2 (2.10)
Difference in months	-2.6	+0.8		+2.3	-5.4
Percentage of youth reported to have worked full time (35 hours or more per week):					
Cohort 1 (1990)	70.2 (4.08)	74.4 (6.33)	‡	68.3 (5.16)	74.1 (4.57)
Cohort 2 (2005)	53.7 (7.31)	65.2 (17.48)	‡	53.0 (8.90)	56.1 (9.58)
Percentage-point difference	-16.5	-9.2		-15.3	-18.0

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 840 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

The average number of months employed ranged from 13 months for noncompleters to 16 months for completers in 1990 and from 13 months for completers to 14 months for noncompleters in 2005. By length of time since leaving high school, the average number of months employed ranged from 11 months for youth with disabilities out of high school 1 up to 2 years to 19 months for youth with disabilities out of high school 2 up to 4 years in 1990 and was 13 months for both time frames in 2005.

In 1990, 70 percent of high school completers and 74 percent of noncompleters worked full time; in 2005 54 percent and 65 percent reported working full time, respectively.

### Comparisons Across Time of Job Duration and Full-Time Employment by Demographic Characteristics

Similar to analyses reported thus far, there were no significant differences in job duration or full-time employment between 1990 and 2005 for youth with disabilities who differed in household income or race/ethnicity (table 11).

Table 11. Comparisons between 1990 and 2005 of job duration and full-time employment at the time of the interview of youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Average duration of job (months):								
Cohort 1 (1990)	15.0 (2.07)	15.6 (2.34)	15.6 (2.43)	15.7 (1.41)	13.4 (3.83)	9.5 (2.35)	15.2 (1.45)	14.3 (1.85)
Cohort 2 (2005)	13.8 (3.01)	11.4 (2.58)	11.2 (3.10)	12.2 (2.11)	21.4 (5.31)	11.7 (4.46)	13.3 (2.19)	12.9 (3.16)
Difference in months	-1.2	-4.2	-4.4	-3.5	+8.0	+2.2	-1.9	-1.4
Percentage of youth reported to have worked full time (35 hours or more per week):								
Cohort 1 (1990)	78.9 (5.37)	69.4 (6.29)	57.7 (7.67)	73.4 (3.91)	65.2 (10.22)	57.6 (15.36)	77.0 (3.71)	54.0 (7.44)
Cohort 2 (2005)	63.9 (10.64)	61.8 (12.40)	44.5 (12.05)	52.5 (8.12)	50.8 (17.30)	71.4 (17.61)	64.5 (7.77)	21.0 (9.55)
Percentage-point difference	-15.0	-7.6	-13.2	-20.9	-14.4	+13.8	-12.5	<b>-33.0**</b>

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 840 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

The average number of months employed ranged from 15 months for youth with disabilities in the low income category to 16 months for youth with disabilities in the middle and high income categories in 1990 and from 11 months for youth with disabilities in the middle and high income categories to 14 months in the low income category in 2005. By race/ethnicity, average job duration ranged from 10 months for Hispanic youth with disabilities to 16 months for White youth with disabilities in 1990 and from 12 months for Hispanic youth with disabilities to 21 months for African American youth with disabilities in 2005. Average job duration by gender was 14 months for females and 15 months for males in 1990 and 13 months for both males and females in 2005.

Females were significantly more likely to be employed full time in 1990 than in 2005 (54 percent vs. 21 percent,  $p < .01$ ). This difference in full-time employment widened the gap between males and females. In 1990, 77 percent of males compared with 54 percent of females

were employed full time ( $p < .01$ ). In 2005, the rate of full-time work was 66 percent and 21 percent, respectively ( $p < .01$ ).

### **Comparisons Across Time of Types of Jobs**

Youth with disabilities held a range of jobs in both 1990 and 2005, with approximately one-third of those at both time periods working at the time of the interview in food service (e. g, waiter, busboy, cook, kitchen prep, food counter worker) or as construction trade skilled labor (e.g., plumber, carpenter, electrician).<sup>44</sup> The types of jobs in which youth with disabilities were employed did not differ significantly between 1990 and 2005 (figure 9).<sup>45</sup>

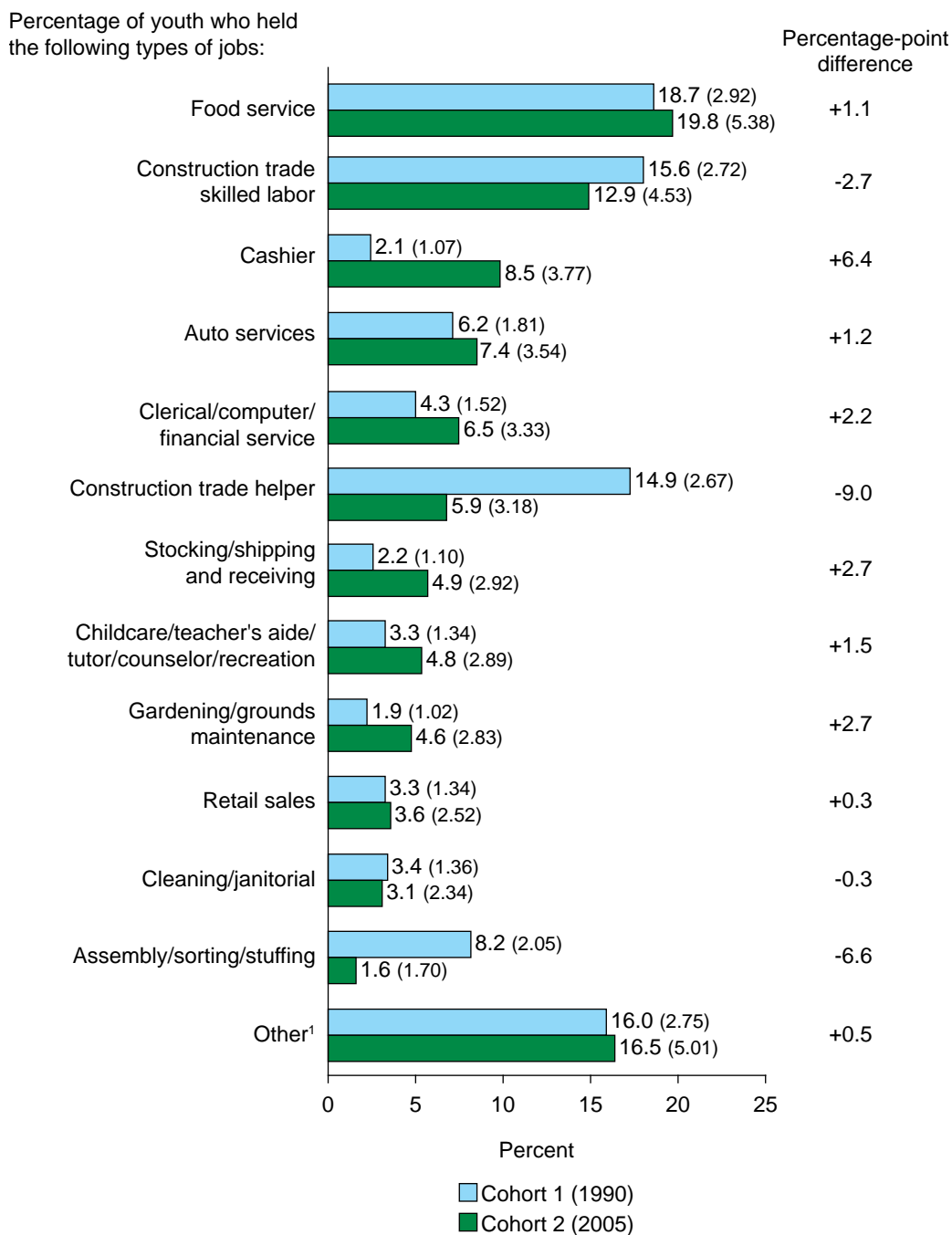
In 1990 and 2005, 19 percent and 20 percent of youth with disabilities, respectively, reported holding food service jobs; 16 percent and 13 percent reported holding construction trade skilled labor jobs; 2 percent and 9 percent held cashiering jobs; 6 percent and 7 percent held jobs in auto services; and 4 percent and 7 percent held jobs in clerical, computer, or financial services. In 1990 and 2005, 15 percent and 6 percent of youth with disabilities, respectively, reported holding construction trade helper jobs; 2 percent and 5 percent of youth with disabilities held jobs in stocking or shipping and receiving; 3 percent and 5 percent held jobs in childcare and related jobs; 2 percent and 5 percent held gardening or grounds maintenance jobs; 3 percent and 4 percent held retail sales jobs; 3 percent held cleaning or janitorial jobs in 1990 and 2005; and 8 percent and 2 percent of youth with disabilities, respectively, held assembly, sorting, and stuffing jobs.

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<sup>44</sup> NLTS respondents who were employed at the time of the interview were asked, “What kind of job [do you/does *name of youth*] have?” NLTS2 respondents who were employed at the time of the interview were asked, “What kind of work [do you/does *name of youth*] do at this job?” For both studies if the type of job was unclear, the interviewer was instructed to ask, “Can you tell me a little about the place where [you do/*name of youth* does] this work? What kinds of things [do you/does *he/she*] do there?”

<sup>45</sup> Difference in job types between 1990 and 2005 are reported only for youth with disabilities overall, and not by disability or other characteristics. Many jobs in 1990 and/or 2005 had percentages of less than 5 percent of youth, often resulting in, when analyzing job types by disability and demographic characteristics, cell sizes too small (less than 3) to support analysis by disability or demographic characteristics. For those jobs with percentages that supported analysis, the types of jobs did not differ significantly between 1990 and 2005 by the disability, school-leaving, or demographic characteristics included in this report, with two exceptions: youth with learning disabilities were more likely to be reported to have held assembly or sorting and stuffing jobs in 1990 than in 2005 (9 percent vs. 0 percent, respectively,  $p < .01$ ) and those who had completed high school were more likely to be reported to have held construction trade helper jobs in 1990 than in 2005 (14 percent vs. 3 percent, respectively,  $p < .01$ ).

Figure 9. Comparisons between 1990 and 2005 of the type of jobs held by youth with disabilities out of high school 1 to 4 years who were employed at the time of the interview



<sup>1</sup>Job categories held by fewer than 1.6 percent of youth with disabilities in either cohort were combined into the "other" category. A large number of job categories had small numbers of respondents and consequently were collapsed into this category.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years and who were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 840. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Wages and Benefits**

The wages of youth with disabilities employed at the time of the interview were compared between 1990 and 2005, after adjusting the 1990 wages for inflation.<sup>46,47</sup> The percentage of youth with disabilities reported to be earning less than minimum wage was 6 percent in 1990 and 5 percent in 2005 (figure 10). The majority of youth with disabilities at both points in time were reported to be earning more than \$7.00 per hour, with 27 percent earning between \$7.00 and \$9.00, and 41 percent earning more than \$9.00 per hour in 1990, and 28 percent earning between \$7.00 and \$9.00, and 36 percent earning more than \$9.00 per hour in 2005. Average earnings in 1990 and 2005 were \$9.10 and \$9.00 per hour, respectively. The difference in wages between 1990 and 2005 was not significant.

Similarly, the rate of having received health insurance as part of employment benefits did not differ significantly between the two time periods, with 52 percent having received health insurance in 1990 and 33 percent in 2005.<sup>48</sup> In contrast, youth with disabilities in 1990 were more likely to receive vacation or sick leave as part of their employment benefits than were those in 2005 (60 percent vs. 38 percent, respectively,  $p < .01$ ).

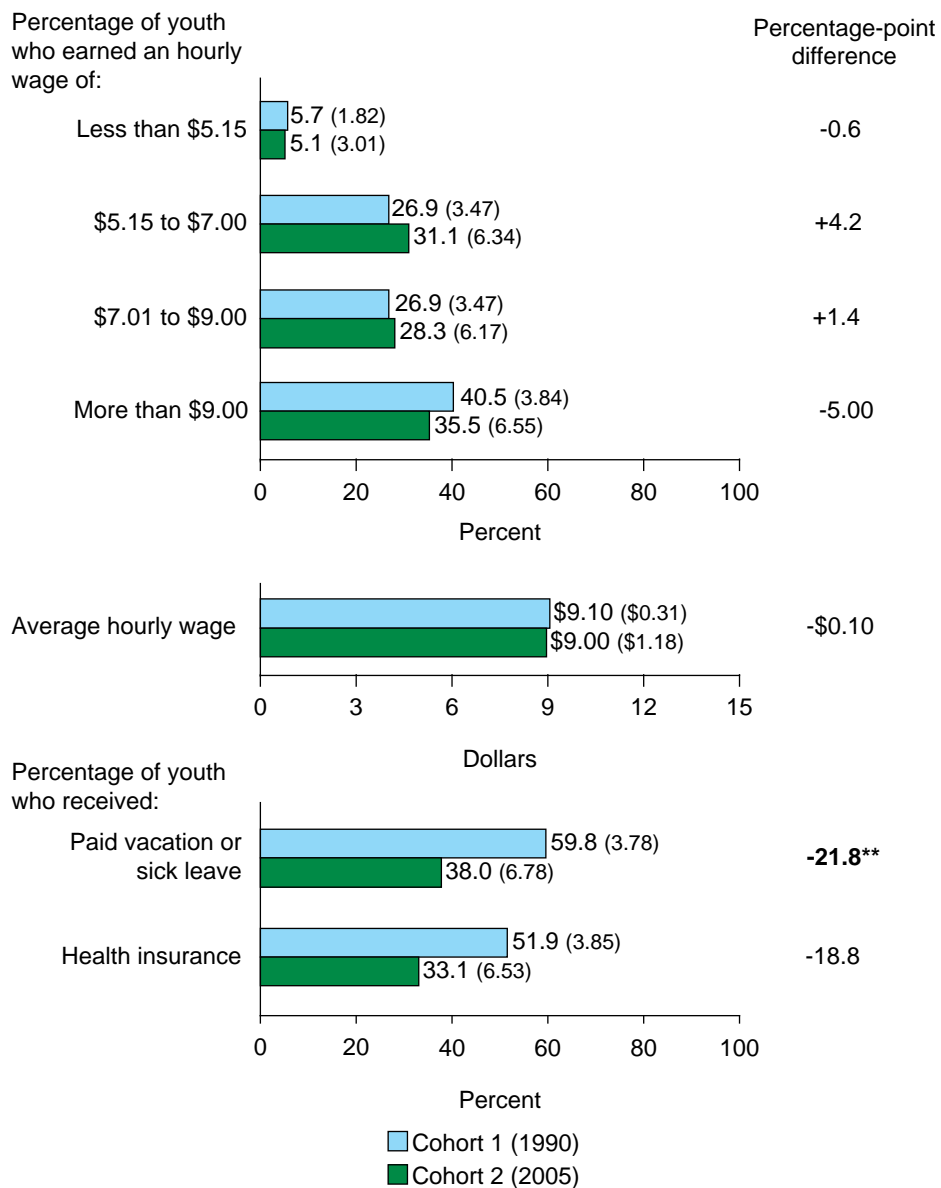
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<sup>46</sup> Samuel H. Williamson, "Six Ways to Compute the Relative Value of a U.S. Dollar Amount, 1774 to Present," Measuring Worth, 2008. URL <http://www.measuringworth.com/uscompare/>

<sup>47</sup> Respondents to both studies who were employed at the time of the interview were asked, "About how much [are you/is *name of youth*] paid at this job?"

<sup>48</sup> Respondents in both studies who were employed at the time of the interview were asked, "As part of this job, [do you/does *name of youth*] get paid vacation or sick leave? Health insurance?"

Figure 10. Comparisons between 1990 and 2005 of wages and employment benefits of youth with disabilities out of high school 1 to 4 years who were employed at the time of the interview



\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years and who were currently employed. Wages from 1990 have been adjusted for inflation. NLTS percentages are weighted population estimates based on a sample of approximately 760 to 800 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 860 to 890 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### Comparisons Across Time of Wages and Benefits by Disability Category

Hourly wages and the rate of receiving benefits did not differ significantly between 1990 and 2005 across disability categories (table 12). Average reported wages ranged from \$7.30 per hour for youth with mental retardation to \$9.90 per hour for youth in the category of other health impairments and autism in 1990, and from \$7.30 per hour for youth with orthopedic impairment to \$13.90 per hour for youth with emotional disturbances in 2005.

Table 12. Comparisons between 1990 and 2005 of wages and benefits of employed youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Average hourly wage:									
Cohort 1 (1990)	\$9.70 (\$0.45)	\$7.90 (\$0.46)	\$7.30 (\$0.38)	\$8.10 (\$0.56)	\$7.90 (\$0.33)	\$8.10 (\$0.61)	\$8.00 (\$0.93)	\$9.90 (\$1.11)	‡
Cohort 2 (2005)	\$8.60 (\$0.53)	\$7.80 (\$0.48)	‡	\$13.90 (\$4.70)	\$7.90 (\$0.72)	\$7.60 (\$0.48)	\$7.30 (\$0.46)	\$8.20 (\$0.55)	\$10.30 (\$2.02)
Difference in hourly wage	-\$1.10	-\$0.10		+\$5.80	\$0.00	-\$0.50	-\$0.70	-\$1.70	
Percentage of youth reported to have received:									
Paid vacation or sick leave									
Cohort 1 (1990)	61.3 (5.18)	54.4 (8.28)	54.5 (7.92)	61.8 (7.46)	50.8 (6.11)	34.7 (9.05)	61.1 (11.46)	53.1 (11.17)	‡
Cohort 2 (2005)	35.6 (9.29)	40.8 (10.08)	‡	44.7 (10.25)	30.4 (12.36)	18.0 (14.93)	25.1 (13.04)	50.3 (8.61)	50.9 (22.15)
Percentage-point difference	-25.7	-13.6		-17.1	-20.4	-16.7	-36.0	-2.8	
Health insurance									
Cohort 1 (1990)	55.8 (5.25)	32.2 (7.97)	46.5 (7.88)	44.3 (7.53)	40.6 (5.94)	41.7 (9.25)	43.0 (11.43)	44.8 (10.85)	‡
Cohort 2 (2005)	30.5 (8.86)	35.0 (9.75)	‡	39.1 (9.89)	29.6 (12.34)	14.5 (12.76)	36.5 (13.93)	32.7 (7.90)	43.3 (21.76)
Percentage-point difference	-25.3	+2.8		-5.2	-11.0	-27.2	-6.5	-12.1	

‡ Responses for items with fewer than 30 respondents are not reported.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. Wages from 1990 have been adjusted for inflation. NLTS percentages are weighted population estimates based on a sample of approximately 800 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 600 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

The percentage of youth who were reported to receive paid vacation or sick leave ranged from 35 percent for youth with visual impairments to 62 percent of youth with emotional disturbances in 1990 and from 18 percent for youth with visual impairments to 51 percent of those with multiple disabilities in 2005. The percentage of youth who were reported to receive health insurance ranged from 32 percent of youth with speech language/impairments to



56 percent of youth with learning disabilities in 1990 and from 15 percent for youth with visual impairments to 43 percent of youth with multiple disabilities in 2005.

### **Comparisons Across Time of Wages and Benefits by High School Leaving Status**

Average reported wages were \$9.30 for high school completers and \$8.50 for noncompleters in 1990 and \$8.40 and \$13.80, respectively, in 2005 (table 13). Average wages did not differ significantly between 1990 and 2005 by high school completion status. In contrast, significant differences between 1990 and 2005 were found for receipt of both health insurance and paid leave. In 1990, youth with disabilities who had completed high school were significantly more likely to report receiving these benefits than in 2005 (57 percent vs. 32 percent for health insurance and 62 percent vs. 39 percent for paid leave, respectively,  $p < .01$ ).

No significant differences between 1990 and 2005 were found for wages or receipt of employment benefits related to the number of years youth with disabilities had been out of high school. For those who had been out of high school between 1 and 2 years, average wages were \$8.90 in 1990 and \$9.00 in 2005. Youth with disabilities who had left high school between 2 and 4 years earlier earned average wages of \$9.00 at both points in time. Regarding benefits, the percentage of youth with disabilities who received paid vacation was 61 percent for those who had been out of high school 1 to 2 years and 59 percent for those out of high school for 2 to 4 years in 1990 and 38 percent for those out of high school for 1 to 2 years and those out 2 to 4 years in 2005. The percentage of youth with disabilities receiving health insurance benefits ranged from 50 percent for youth with disabilities out of high school 1 up to 2 years to 54 percent for youth with disabilities out 2 up to 4 years in 1990, and from 28 percent for youth with disabilities out of high school 1 up to 2 years to 36 percent for youth with disabilities out 2 up to 4 years in 2005.

Table 13. Comparisons between 1990 and 2005 of wages of employed youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Average hourly wage:					
Cohort 1 (1990)	\$9.30 (\$0.39)	\$8.50 (\$0.44)	‡	\$8.90 (\$0.47)	\$9.30 (\$0.42)
Cohort 2 (2005)	\$8.40 (\$0.40)	\$13.80 (\$9.16)	‡	\$9.00 (\$2.40)	\$9.00 (\$0.58)
Difference in hourly wage	-\$0.90	+\$5.30		+\$0.10	-\$0.30
Percentage of youth reported to have received:					
Paid vacation or sick leave					
Cohort 1 (1990)	62.3 (4.36)	51.8 (7.48)	‡	61.0 (5.44)	58.6 (5.26)
Cohort 2 (2005)	38.8 (7.28)	30.5 (17.68)	‡	38.0 (8.92)	37.9 (9.59)
Percentage-point difference	<b>-23.5**</b>	-21.3		-23.0	-20.7
Health insurance					
Cohort 1 (1990)	56.5 (4.44)	38.7 (7.32)	‡	50.3 (5.55)	53.5 (5.33)
Cohort 2 (2005)	31.7 (6.93)	44.8 (18.60)	‡	28.2 (8.17)	36.3 (9.47)
Percentage-point difference	<b>-24.8**</b>	+6.1		-22.1	-17.2

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. Wages from 1990 have been adjusted for inflation. NLTS percentages are weighted population estimates based on a sample of approximately 760 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### Comparisons Across Time of Wages and Benefits by Demographic Characteristics

No significant differences in wages reported earned in 1990 and 2005 were found related to the household income, race/ethnicity, or gender of youth with disabilities out of high school 1 to 4 years (table 14). The average reported wage ranged from \$8.70 per hour for youth with disabilities from low income households to \$10.30 per hour for youth with disabilities from high income households in 1990, and from \$8.60 per hour for youth with disabilities from high income households to \$9.40 per hour for youth with disabilities from low income households in 2005. The wage ranged from \$8.50 for African American youth with disabilities to \$9.30 for White and Hispanic youth with disabilities in 1990 and from \$7.70 per hour for Hispanic youth with disabilities to \$14.10 per hour for African American youth with disabilities in 2005. In

1990, females reported earning \$7.90 per hour and males \$9.50 per hour; in 2005 females reported earning \$7.40 per hour and males \$9.50 per hour.

In contrast to wages, rate of benefit receipt differed significantly between 1990 and 2005 by household income, race/ethnicity, and gender. Youth with disabilities in the high household income category were more likely to report receipt of health insurance as an employment benefit in 1990 than in 2005 (53 percent vs. 20 percent,  $p < .01$ ). White youth with disabilities also were more likely to report receipt of health insurance in 1990 than in 2005 (52 percent vs. 28 percent,  $p < .01$ ). Males with disabilities were more likely to report receipt of both health insurance and paid vacation or sick leave as an employment benefit in 1990 than in 2005 (57 percent vs. 33 percent and 63 percent vs. 39 percent,  $p < .01$  for both comparisons).

Table 14. Comparisons between 1990 and 2005 of wages of employed youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Average hourly wage:								
Cohort 1 (1990)	\$8.70 (\$0.48)	\$9.30 (\$0.54)	\$10.30 (\$0.76)	\$9.30 (\$0.36)	\$8.50 (\$0.84)	\$9.30 (\$1.60)	\$9.50 (\$0.37)	\$7.90 (\$0.54)
Cohort 2 (2005)	\$9.40 (\$3.17)	\$8.70 (\$0.71)	\$8.60 (\$0.63)	\$8.60 (\$0.43)	\$14.10 (\$7.88)	\$7.70 (\$1.12)	\$9.50 (\$1.59)	\$7.40 (\$0.69)
Difference in hourly wage	+\$0.70	-\$0.60	-\$1.70	-\$0.70	+\$5.60	-\$1.60	\$0.00	-\$0.50
Percentage of youth reported to have received:								
Paid vacation or sick leave								
Cohort 1 (1990)	61.1 (6.59)	56.2 (6.91)	58.1 (7.58)	58.0 (4.46)	66.6 (9.96)	61.5 (14.84)	63.2 (4.32)	49.3 (7.59)
Cohort 2 (2005)	40.8 (11.22)	34.4 (12.27)	33.6 (11.66)	35.8 (7.97)	41.1 (17.44)	47.6 (19.61)	39.3 (8.15)	33.6 (11.30)
Percentage-point difference	-20.3	-21.8	-24.5	-22.2	-25.5	-13.9	<b>-23.9**</b>	-15.7
Health insurance								
Cohort 1 (1990)	52.6 (6.73)	45.9 (6.97)	52.6 (7.63)	52.1 (4.48)	52.6 (10.90)	49.9 (15.35)	56.7 (4.43)	37.3 (7.30)
Cohort 2 (2005)	36.4 (10.96)	34.9 (12.13)	19.9 (9.81)	27.6 (7.34)	43.9 (17.94)	51.7 (19.79)	32.7 (7.85)	34.3 (11.06)
Percentage-point difference	+16.2	-11.0	<b>-32.7**</b>	<b>-24.5**</b>	-8.7	+1.8	<b>-24.0**</b>	-3.0

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. Wages from 1990 have been adjusted for inflation. NLTS percentages are weighted population estimates based on a sample of approximately 760 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 610 youth with disabilities.

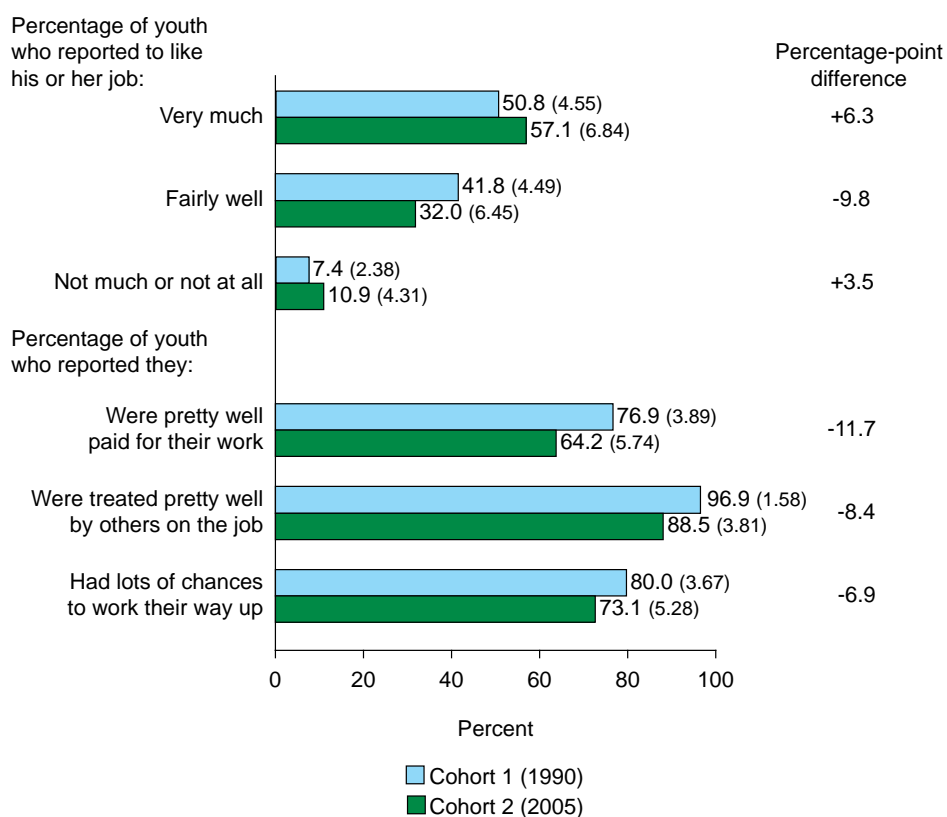
SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Perceptions of Working Conditions**

The majority of employed youth with disabilities who had been out of high school 1 to 4 years in 1990 and 2005 reported that they liked their job “very much” (51 percent and

57 percent, respectively). The difference between 1990 and 2005 in the percentage of youth with disabilities who liked their job “very much” was not significant (figure 11).<sup>49</sup> Youth with disabilities’ perceptions of their working conditions also were not significantly different between 1990 and 2005, with 77 percent and 64 percent, respectively, reporting that they were “pretty well paid”; 97 percent and 89 percent, respectively, reporting that they were “treated pretty well” by others on the job; and 80 percent and 73 percent, respectively, reporting that they had “lots of chances to work their way up.”<sup>50</sup>

Figure 11. Comparisons between 1990 and 2005 of job satisfaction and perceptions of working conditions of youth with disabilities out of high school 1 to 4 years who were employed at the time of the interview



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school 1 to 4 years and who were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 530 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 740 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

<sup>49</sup> Respondents to both studies who were employed at the time of the interview were asked, “Do you usually like this job very much, like it fairly well, not like it much, or not like it at all?”

<sup>50</sup> Respondents to both studies who were employed at the time of the interview were asked, “Do you think you are pretty well paid for your work? You are treated pretty well by others at your job? In your job do you have lots of chances to work your way up?”

### Comparisons Across Time of Perceptions of Working Conditions by Disability Category

The percentage of youth with disabilities who liked their job “very much” ranged from 29 percent of youth with orthopedic disabilities to 57 percent of youth with learning disabilities in 1990 and from 40 percent of youth with speech impairments to 65 percent of youth with hearing impairments in 2005 (table 15). Those who liked their job “fairly well” ranged from 37 percent of youth with learning disabilities to 58 percent of youth with orthopedic disabilities in 1990 and from 30 percent of youth with learning disabilities to 51 percent of youth with speech impairments in 2005. The percentage of youth who liked their job “not much or not at all” ranged from 6 percent of youth with learning disabilities, speech impairments, and mental retardation to 16 percent of youth with emotional disabilities in 1990, and from 1 percent of youth with hearing impairments to 12 percent of youth with visual impairments in 2005. Job satisfaction of youth with disabilities employed at the time of the interview did not differ significantly between 1990 and 2005 for youth in any disability category.

Table 15. Comparisons between 1990 and 2005 of job satisfaction of youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth reported to have liked his or her job:									
Very much									
Cohort 1 (1990)	57.3 (6.10)	41.2 (9.65)	38.7 (9.36)	32.4 (8.50)	46.0 (9.11)	35.1 (9.73)	28.7 (12.11)	41.5 (12.50)	‡
Cohort 2 (2005)	59.5 (9.60)	40.1 (10.78)	‡	46.4 (10.64)	64.5 (14.69)	44.8 (15.52)	52.2 (12.55)	55.2 (9.05)	‡
Percentage-point difference	+2.2	-1.1		+14.0	+18.5	+9.7	+23.5	+13.7	
Fairly well									
Cohort 1 (1990)	36.6 (5.94)	52.5 (9.79)	55.2 (9.56)	51.9 (9.08)	40.5 (8.97)	57.4 (10.08)	57.8 (13.23)	49.9 (12.68)	‡
Cohort 2 (2005)	30.2 (8.98)	50.5 (11.00)	‡	42.3 (10.54)	34.4 (14.58)	43.1 (15.46)	45.1 (12.51)	34.3 (8.64)	‡
Percentage-point difference	-6.4	-2.0		-9.6	-6.1	-14.3	-12.7	-15.6	
Not much or not at all									
Cohort 1 (1990)	6.1 (2.95)	6.3 (4.77)	6.1 (4.60)	15.7 (6.61)	13.5 (6.24)	7.5 (5.37)	13.5 (9.15)	8.6 (7.11)	‡
Cohort 2 (2005)	10.3 (5.94)	9.4 (6.42)	‡	11.3 (6.76)	1.1 (3.20)	12.1 (10.18)	2.7 (4.07)	10.5 (5.58)	‡
Percentage-point difference	+4.2	+3.1		-4.4	-12.4	+4.6	-10.8	+1.9	

‡ Responses for items with fewer than 30 respondents are not reported.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 530 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 500 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

Similarly, perceptions of how well they were paid, how well they were treated by others on the job, and whether they had many chances to advance in their work did not differ significantly between 1990 and 2005 by disability category (table 16). The percentage of youth who reported they were “pretty well” paid for their work ranged from 59 percent of those with orthopedic impairments to 79 percent of youth with mental retardation and youth with emotional disturbances in 1990, and from 63 percent of youth with learning disabilities to 89 percent of youth with orthopedic impairments in 2005. The percentage of youth who reported they were treated “pretty well” by others on the job ranged from 92 percent of youth with visual impairments and those in the category of other health impairments and autism to 100 percent of youth with mental retardation and orthopedic disabilities in 1990, and from 89 percent of youth with learning disabilities to 99 percent of youth in the category of other health impairments and autism in 2005. The percentage of youth who reported they had “lots of chances to work their way up” ranged from 61 percent of youth with visual impairments to 91 percent of youth with mental retardation in 1990, and from 63 percent of youth with learning disabilities to 82 percent of youth with orthopedic impairments in 2005.

Table 16. Comparisons between 1990 and 2005 of perceptions of the working conditions of employed youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth who reported they:									
Were pretty well paid for their work									
Cohort 1 (1990)	75.1 (5.33)	77.6 (8.12)	79.1 (7.81)	79.2 (7.37)	74.5 (8.00)	61.8 (9.91)	59.2 (13.16)	73.0 (11.26)	‡
Cohort 2 (2005)	63.2 (9.37)	74.1 (9.76)	‡	70.7 (9.78)	81.0 (12.04)	87.9 (10.18)	89.3 (7.84)	71.6 (8.24)	‡
Percentage-point difference	-11.9	-3.5		-8.5	+6.5	+26.1	+30.1	-1.4	
Were treated pretty well by others on the job									
Cohort 1 (1990)	96.1 (2.39)	95.5 (4.05)	100.0	99.6 (1.15)	96.1 (3.61)	92.3 (5.45)	100.0	91.7 (7.14)	‡
Cohort 2 (2005)	89.2 (6.03)	97.0 (3.75)	‡	92.8 (5.52)	96.5 (5.64)	97.1 (5.24)	94.2 (6.04)	99.2 (1.62)	‡
Percentage-point difference	-6.9	+1.5		-6.8	+0.4	+4.8	-5.8	+7.5	
Had lots of chances to work their way up									
Cohort 1 (1990)	80.3 (4.90)	72.9 (8.63)	90.6 (5.83)	73.5 (8.02)	69.4 (8.59)	60.6 (9.96)	77.8 (11.13)	62.6 (12.77)	‡
Cohort 2 (2005)	63.2 (9.43)	73.6 (9.73)	‡	75.4 (9.19)	63.7 (14.76)	79.0 (12.98)	82.1 (9.73)	74.7 (7.93)	‡
Percentage-point difference	-17.1	+0.7		+1.9	-5.7	+18.4	+4.3	+12.1	

‡ Responses for items with fewer than 30 respondents are not reported.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 520 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 490 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

### Comparisons Across Time of Perceptions of Working Conditions by High School-Leaving Status

No significant differences between 1990 and 2005 were found for job satisfaction related to school leaving status or number of years since leaving high school (table 17). The percentage of youth with disabilities who liked their job “very much” was 47 percent for noncompleters and 52 percent for completers in 1990, and 57 percent for completers and 62 percent for noncompleters in 2005. The percentage of youth with disabilities who liked their job “fairly well” was 41 percent for completers and 43 percent for noncompleters in 1990, and 31 percent for completers and 37 percent for noncompleters in 2005. In 1990, 7 percent of completers and 10 percent of noncompleters liked their job “not much or not at all;” in 2005 the percentages were 12 percent and 1 percent, respectively.

Table 17. Comparisons between 1990 and 2005 of job satisfaction of youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth reported to have liked his or her job:					
Very much					
Cohort 1 (1990)	52.0 (5.28)	47.4 (8.95)	‡	55.0 (6.49)	46.6 (6.34)
Cohort 2 (2005)	56.5 (7.26)	62.3 (20.58)	‡	50.9 (10.02)	61.9 (9.23)
Percentage-point difference	+4.5	+14.9		-4.1	+15.3
Fairly well					
Cohort 1 (1990)	41.4 (5.21)	42.9 (8.87)	‡	39.2 (6.37)	44.4 (6.32)
Cohort 2 (2005)	31.4 (6.79)	37.0 (20.51)	‡	36.6 (9.65)	28.4 (8.57)
Percentage-point difference	-10.0	-5.9		-2.6	-16.0
Not much or not at all					
Cohort 1 (1990)	6.6 (2.62)	9.7 (5.31)	‡	5.8 (3.05)	9.0 (3.64)
Cohort 2 (2005)	12.1 (4.77)	0.7 (3.54)	‡	12.4 (6.60)	9.7 (5.62)
Percentage-point difference	+5.5	-9.0		+6.6	+0.7

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 530 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 500 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

In 1990 the percentage of youth with disabilities who liked their job “very much” ranged from 47 percent of those out of high school 2 up to 4 years to 55 percent of those out 1 up to 2 years; in 2005 the percentages ranged from 51 percent of youth with disabilities out of high school 1 up to 2 years to 62 percent for youth with disabilities out 2 up to 4 years. In 1990 the percentage of youth with disabilities who liked their job “fairly well” ranged from 39 percent of those out of high school 1 up to 2 years to 44 percent of those out 2 up to 4 years; in 2005 the percentages ranged from 28 percent of youth with disabilities out of high school 2 up to 4 years to 37 percent of youth with disabilities out 1 up to 2 years. In 1990 the percentage of youth with disabilities who liked their job “not much to not at all” ranged from 6 percent of those out of high school 1 up to 2 years to 9 percent of those out 2 up to 4 years; in 2005 the percentages ranged from 10 percent of youth with disabilities out of high school 2 up to 4 years to 12 percent of youth with disabilities out 1 up to 2 years.



No significant differences between 1990 and 2005 were found in perceptions of working conditions related to school leaving status or number of years since leaving high school (table 18). The percentage of youth with disabilities who reported they were “pretty well paid” for their work was 75 percent for completers and 79 percent for noncompleters in 1990, and 65 percent and 67 percent, respectively, in 2005. The percentage of youth with disabilities who reported they were treated “pretty well” by others on the job was 97 percent for both completers and noncompleters in 1990, and 76 percent of noncompleters and 92 percent of completers in 2005. In 1990, 80 percent of completers and 80 percent noncompleters reported they had “lots of chances to work their way up,” whereas in 2005, the percentages were 60 percent and 69 percent, respectively.

Table 18. Comparisons between 1990 and 2005 of perceptions of the working conditions of employed youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth who reported they:					
Were pretty well paid for their work					
Cohort 1 (1990)	74.8 (4.59)	79.3 (7.26)	‡	75.9 (5.58)	76.0 (5.43)
Cohort 2 (2005)	65.2 (7.04)	66.6 (20.03)	‡	67.5 (9.41)	63.8 (9.21)
Percentage-point difference	-9.6	-12.7		-8.4	-12.2
Were treated pretty well by others on the job					
Cohort 1 (1990)	97.0 (1.81)	96.7 (3.21)	‡	97.5 (2.04)	96.4 (2.37)
Cohort 2 (2005)	92.2 (3.94)	76.4 (18.03)	‡	96.4 (3.74)	86.3 (6.55)
Percentage-point difference	-4.8	-20.3		-1.1	-10.1
Had lots of chances to work their way up					
Cohort 1 (1990)	80.1 (4.26)	79.6 (7.22)	‡	87.5 (4.36)	72.4 (5.71)
Cohort 2 (2005)	68.5 (6.80)	60.3 (20.84)	‡	73.0 (8.90)	63.5 (9.16)
Percentage-point difference	-11.6	-19.3		-14.5	-8.9

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTTS percentages are weighted population estimates based on a sample of approximately 520 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 490 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

In 1990 the percentage of youth with disabilities who had been out of high school 1 up to 2 years and 2 up to 4 years who reported they were “pretty well” paid for their work was 76 percent for both groups; in 2005 the percentages ranged from 64 percent of youth with disabilities out of high school 2 up to 4 years to 68 percent of youth with disabilities out 1 up to 2 years. In 1990 the percentages of youth with disabilities who reported they were “treated pretty well” by others on the job ranged from 96 percent of youth with disabilities out of high school 2 up to 4 years to 98 percent of youth with disabilities out 1 up to 2 years; in 2005 the percentages ranged from 86 percent of youth with disabilities out of high school 2 up to 4 years to 96 percent of youth with disabilities out 1 up to 2 years. In 1990 the percentages of youth with disabilities who reported they had “lots of chances to work their way up” on the job ranged from 72 percent of youth with disabilities out of high school 2 up to 4 years to 88 percent of youth with disabilities out 1 up to 2 years; in 2005 the percentages ranged from 64 percent of youth with disabilities out of high school 2 up to 4 years to 73 percent of youth with disabilities out 1 up to 2 years.

#### **Comparisons Across Time of Perceptions of Working Conditions by Demographic Characteristics**

No significant differences between 1990 and 2005 were found for job satisfaction for youth with disabilities employed at the time of the interview related to household income, race/ethnicity, or gender (table 19). The percentage of youth with disabilities who liked their job “very much” ranged from 40 percent of youth with disabilities from the highest income households to 58 percent of youth with disabilities from middle income households in 1990, and from 54 percent of youth with disabilities from middle income households to 63 percent of youth with disabilities from highest income households in 2005. The percentage of youth with disabilities who liked their job “fairly well” ranged from 36 percent of youth with disabilities from middle income households to 52 percent of those from high income households in 1990, and from 16 percent of youth with disabilities from high income households to 40 percent of youth with disabilities from low income households in 2005. The percentage of youth with disabilities who liked their job “not much or not at all” ranged from 7 percent of youth with disabilities from middle income households to 9 percent of youth with disabilities from low income households in 1990, and from 1 percent of youth with disabilities from low income households to 21 percent of youth with disabilities from high income households in 2005.

Table 19. Comparisons between 1990 and 2005 of job satisfaction of youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth reported to have liked his or her job:								
Very much								
Cohort 1 (1990)	49.2 (7.79)	57.5 (8.05)	39.9 (8.77)	54.3 (5.34)	36.6 (11.80)	52.9 (16.51)	55.0 (5.38)	40.3 (8.28)
Cohort 2 (2005)	59.0 (11.59)	54.5 (11.19)	63.2 (12.43)	63.4 (7.74)	30.8 (15.54)	39.6 (21.61)	59.9 (8.09)	49.7 (12.57)
Percentage-point difference	+9.8	-3.0	+23.3	+9.1	-5.8	-13.3	+4.9	+9.4
Fairly well								
Cohort 1 (1990)	41.6 (7.68)	36.0 (7.81)	51.7 (8.95)	39.7 (5.24)	53.9 (12.21)	30.9 (15.29)	37.1 (5.23)	53.5 (8.42)
Cohort 2 (2005)	39.7 (11.53)	36.6 (10.82)	15.6 (9.35)	26.9 (7.13)	39.4 (16.45)	57.8 (21.83)	30.5 (7.60)	35.8 (12.05)
Percentage-point difference	-1.9	+0.6	-36.1	-12.8	-14.5	+26.9	-6.6	-17.7
Not much or not at all								
Cohort 1 (1990)	9.2 (4.50)	6.6 (4.04)	8.4 (4.97)	6.0 (2.55)	9.5 (7.18)	16.1 (12.16)	7.9 (2.92)	6.2 (4.07)
Cohort 2 (2005)	1.4 (2.77)	8.9 (6.40)	21.2 (10.54)	9.8 (4.78)	29.7 (15.38)	2.6 (7.03)	9.6 (4.86)	14.4 (8.83)
Percentage-point difference	-7.8	+2.3	+12.8	+3.8	+20.2	-13.5	+1.7	+8.2

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 530 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 500 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

Based on race/ethnicity, the percentage of youth with disabilities who liked their job “very much” ranged from 37 percent of African American youth with disabilities to 54 percent of White youth with disabilities in 1990, and from 31 percent of African American youth with disabilities to 63 percent of White youth with disabilities in 2005. The percentage of youth with disabilities who liked their job “fairly well” ranged from 31 percent of Hispanic youth with disabilities to 54 percent of African American youth with disabilities in 1990, and from 27 percent of White youth with disabilities to 58 percent of Hispanic youth with disabilities in 2005. The percentage of youth with disabilities who liked their job “not much or not at all” ranged from 6 percent of White youth with disabilities to 16 percent of Hispanic youth with disabilities in 1990, and from 3 percent of Hispanic youth with disabilities to 30 percent of African American youth with disabilities in 2005.

Based on gender, the percentage of males and females who liked their job “very much” was 55 percent and 40 percent, respectively in 1990, and 60 percent and 50 percent of males and females, respectively, in 2005. The percentage of males and females who liked their job “fairly well” was 37 percent and 54 percent, respectively, in 1990, and 31 percent and 36 percent of males and females, respectively, in 2005. The percentage of males and females who liked their

job “not much to not at all” was 8 percent and 6 percent, respectively in 1990, and 10 percent to 14 percent of males and females, respectively, in 2005.

No significant differences between 1990 and 2005 were found in perceptions of working conditions of youth with disabilities employed at the time of the interview related to household income, race/ethnicity, or gender (table 20). The percentage of youth with disabilities who reported they were “pretty well paid” for their work ranged from 73 percent of youth with disabilities from high income households to 77 percent of youth with disabilities from low and middle income households in 1990, and from 56 percent of youth with disabilities from low income households to 82 percent of youth with disabilities from high income households in 2005. The percentage of youth with disabilities who reported they were “treated pretty well” by others on the job ranged from 96 percent of youth with disabilities from high income households to 98 percent of youth with disabilities from low income households in 1990, and from 83 percent of youth with disabilities from low income households to 98 percent of youth with disabilities from middle and high income households in 2005. The percentage of youth with disabilities who reported they had “lots of chances to work their way up” ranged from 74 percent of youth with disabilities from the highest income to 85 percent of youth with disabilities from the lowest income households in 1990, and from 69 percent of youth with disabilities from the lowest income households to 73 percent of youth with disabilities from the highest income households in 2005.

Based on race/ethnicity, the percentage of youth with disabilities who reported they were “pretty well” paid for their work ranged from 66 percent of African American youth with disabilities to 79 percent of White youth with disabilities in 1990, and from 44 percent of Hispanic youth with disabilities to 72 percent of White youth with disabilities in 2005. The percentage of youth with disabilities who reported they were “treated pretty well” by others on the job ranged from 92 percent of Hispanic youth with disabilities to 99 percent of African American youth with disabilities in 1990, and from 70 percent of African American youth with disabilities to 96 percent of White youth with disabilities in 2005. The percentage of youth with disabilities who reported they had “lots of chances to work their way up” on the job ranged from 71 percent of Hispanic youth with disabilities to 91 percent of African American youth with disabilities in 1990, and from 64 percent of White youth with disabilities to 84 percent of African American youth with disabilities in 2005.

Table 20. Comparisons between 1990 and 2005 of perceptions of the working conditions of employed youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth who reported they:								
Were pretty well paid for their work								
Cohort 1 (1990)	76.8 (6.58)	77.1 (6.84)	73.4 (7.92)	78.8 (4.38)	65.5 (11.64)	78.3 (13.64)	78.0 (4.48)	70.7 (7.69)
Cohort 2 (2005)	55.6 (12.01)	68.7 (10.49)	81.9 (9.92)	71.7 (7.28)	48.7 (18.82)	43.9 (21.93)	65.6 (7.91)	64.8 (12.04)
Percentage-point difference	-21.2	-8.4	+8.5	-7.1	-16.8	-34.4	-12.4	-5.9
Were treated pretty well by others on the job								
Cohort 1 (1990)	98.1 (2.13)	97.4 (2.59)	95.8 (3.60)	97.8 (1.57)	99.0 (2.44)	91.5 (9.30)	98.6 (1.27)	92.8 (4.37)
Cohort 2 (2005)	82.9 (9.03)	98.7 (2.55)	97.9 (3.70)	95.8 (3.22)	70.0 (17.25)	80.9 (17.40)	90.8 (4.79)	89.8 (7.61)
Percentage-point difference	-15.2	+1.3	+2.1	-2.0	-29.0	-10.6	-7.8	-3.0
Had lots of chances to work their way up								
Cohort 1 (1990)	84.7 (5.66)	74.8 (7.07)	73.5 (7.93)	80.2 (4.30)	90.5 (7.18)	71.2 (15.49)	82.5 (4.15)	73.7 (7.45)
Cohort 2 (2005)	69.1 (10.90)	70.8 (10.23)	73.4 (11.39)	63.5 (7.75)	84.3 (12.26)	75.0 (19.14)	65.4 (7.86)	73.5 (11.10)
Percentage-point difference	-15.6	-4.0	-0.1	-16.7	-6.2	+3.8	-17.1	-0.2

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years and were currently employed. NLTS percentages are weighted population estimates based on a sample of approximately 520 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 490 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 youth interview/survey, 2005.

Based on gender, the percentage of males and females who reported they were “pretty well” paid for their work was 78 percent and 71 percent, respectively, in 1990, and 66 percent and 65 percent of males and females, respectively, in 2005. The percentage of males and females who reported they were “treated pretty well” on the job was 99 percent and 93 percent, respectively, in 1990, and 91 percent and 90 percent of males and females, respectively, in 2005. The percentage of males and females who reported they had “lots of chances to work their way up” on the job was 83 percent and 74 percent, respectively, in 1990, and 65 percent and 74 percent of males and females, respectively, in 2005.

## Summary

This chapter has presented findings related to differences in employment status and characteristics of employment of youth with disabilities employed at the time of the interview. Analysis was based on youth with disabilities who had been out of high school 1 up to 4 years in

1990 and 2005. Overall, no significant differences were found between the two cohorts with one exception. At the time of the interview, employed youth with disabilities were more likely to receive paid vacation or sick leave in 1990 (60 percent) than 2005 (38 percent). All other findings for 1990 and 2005 for youth with disabilities as a whole did not vary significantly, including employment status (62 percent and 56 percent, respectively), job duration (15 months and 13 months), hours employed per week (38 hours and 35 hours), type of job, wages (\$9.10 and \$9.00), or receipt of health insurance from the employer (52 percent and 33 percent). Similarly, findings for job satisfaction and perceptions of working conditions did not differ significantly between 1990 and 2005.

No differences in employment status and characteristics of employment between 1990 and 2005 were found for youth with disabilities based on disability category.

Most employment-related experiences did not differ significantly between 1990 and 2005 by high school leaving status, with two exceptions. High school completers were more likely to receive health insurance from their employer in 1990 than 2005 (57 percent vs. 32 percent) and were more likely to receive vacation or sick leave benefits in 1990 than 2005 (62 percent vs. 39 percent).

Few significant differences based on demographic characteristics were noted between the cohorts. Females were more likely to have reported full-time employment in 1990 than 2005 (54 percent vs. 21 percent). Males were more likely to report receipt of employer provided health insurance (57 percent vs. 33 percent) and vacation or sick leave (63 percent vs. 39 percent) in 1990 than 2005. Additionally, differences between 1990 and 2005 were found for receipt of health insurance benefits of youth with disabilities, by household income and race/ethnicity. Youth with disabilities from families with the highest incomes (53 percent vs. 20 percent) and White youth with disabilities (52 percent and 28 percent) were more likely to receive health insurance benefits from their jobs in 1990 than in 2005.

#### **4. Comparisons Across Time of Engagement in Postsecondary Education or Employment of Out-of-High School Youth With Disabilities**

Employment and postsecondary school attendance have been the primary focus of research and policies related to transition from high school to early adulthood (e.g., Benz, Doren, and Yovanoff 1998; Johnson et al. 2002; Rusch et al. 1992; Savage 2005; Sitlington, Clark, and Kolstoe 2000; Stodden 2001). Each of these activities, individually, has been considered as a productive and valued measure of a successful transition. Chapters 2 and 3 of this report describe differences in involvement between 1990 and 2005 in these two post-high school outcomes—employment and postsecondary education—separately.

However, some young adults engage in one of these activities but not in the other. For example, some might spend their early post-high school years attending postsecondary school but are not employed. To provide a broader understanding of the extent to which young adults are productively engaged in their communities, this chapter focuses on a broader measure of successful transition—the combination and the overlap of these two types of engagement—employment and postsecondary education. Addressing this broader concept of engagement, rather than considering individual outcomes separately, was encouraged by the advisory panel during the design of the initial NLTS; as a result, NLTS was one of the first studies to present a broader perspective on how youth and young adults with disabilities could be productively engaged in their communities. The advisory panel for the current study continued to endorse that view of engagement.

The importance of this broader view of what constitutes a successful transition is now incorporated in the current federal policy that requires states to collect data on post school outcomes (“Indicator 14”): “the percent of youth who had IEPs, are no longer in secondary school, and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school” [20 U.S.C. 1416(a)(3)(B)].

In this chapter, youth with disabilities who had been out of high school from 1 to 4 years are considered engaged in school or work if they had participated in one or both of the following activities at the time of the interviews:<sup>51</sup>

- Employment—worked for pay, other than work around the house, including supported or sheltered employment.
- Education—attended a vocational, business, or technical school; a 2-year, junior, or community college; or a 4-year college or university.

#### **Engagement in School or Work**

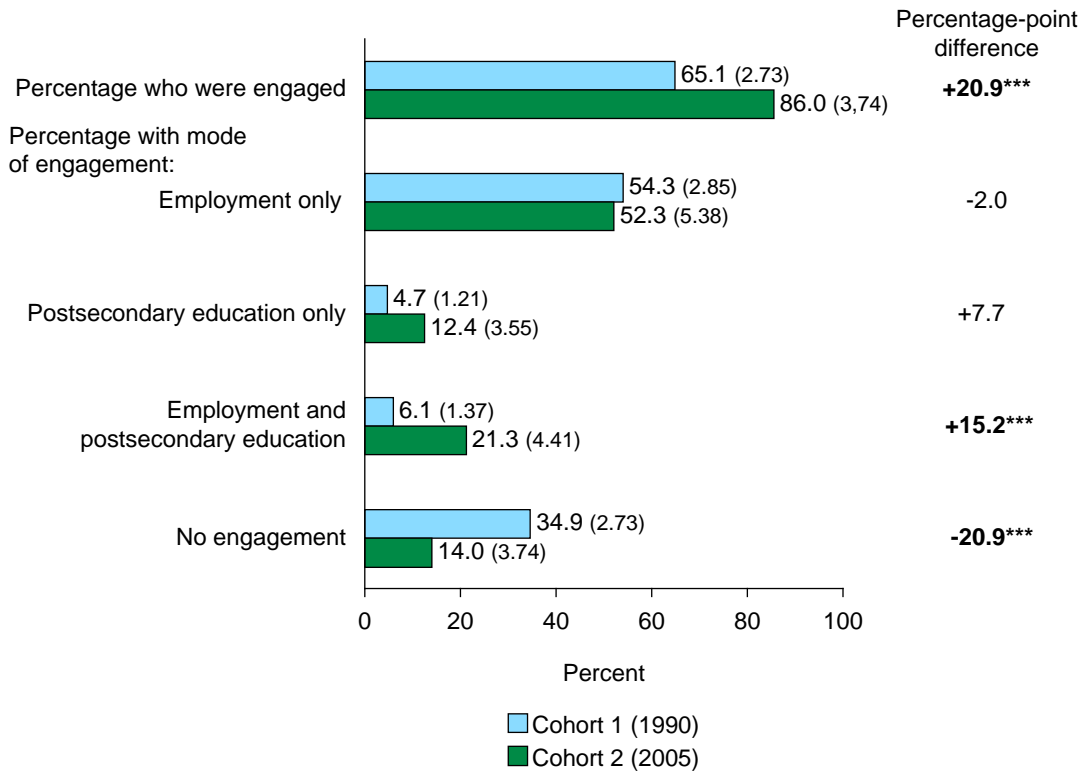
Youth with disabilities who had been out of high school from 1 to 4 years in 2005 (cohort 2) were more likely to have been reported to be engaged in school or work at the time of the

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<sup>51</sup> The focus of this chapter is limited to employment and/or postsecondary education at the time of the interview, rather than since high school, because differences in the NLTS and NLTS2 datasets did not support comparisons of employment rates since high school across the two studies.

interview than were those in 1990 (cohort 1; figure 12).<sup>52</sup> In cohort 1, 65 percent were reported to be employed and/or attending postsecondary school at the time of the interview, as compared with 86 percent in cohort 2, a 21 percentage-point difference between cohorts ( $p < .001$ ).

Figure 12. Comparisons between 1990 and 2005 in engagement in postsecondary education and/or employment at the time of the interview for youth with disabilities out of high school 1 to 4 years



\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 1,740 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 1,050 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Related to the combination of ways youth with disabilities had been engaged (i.e., modes of engagement), engagement rates for those solely involved in employment or postsecondary education did not significantly differ between 1990 and 2005. In contrast, youth with disabilities were 15 percentage-points more likely to be engaged in both activities—school and work—concurrently at the time of the interview in 2005 as compared with 1990 (21 percent vs. 6 percent;  $p < .001$ ).

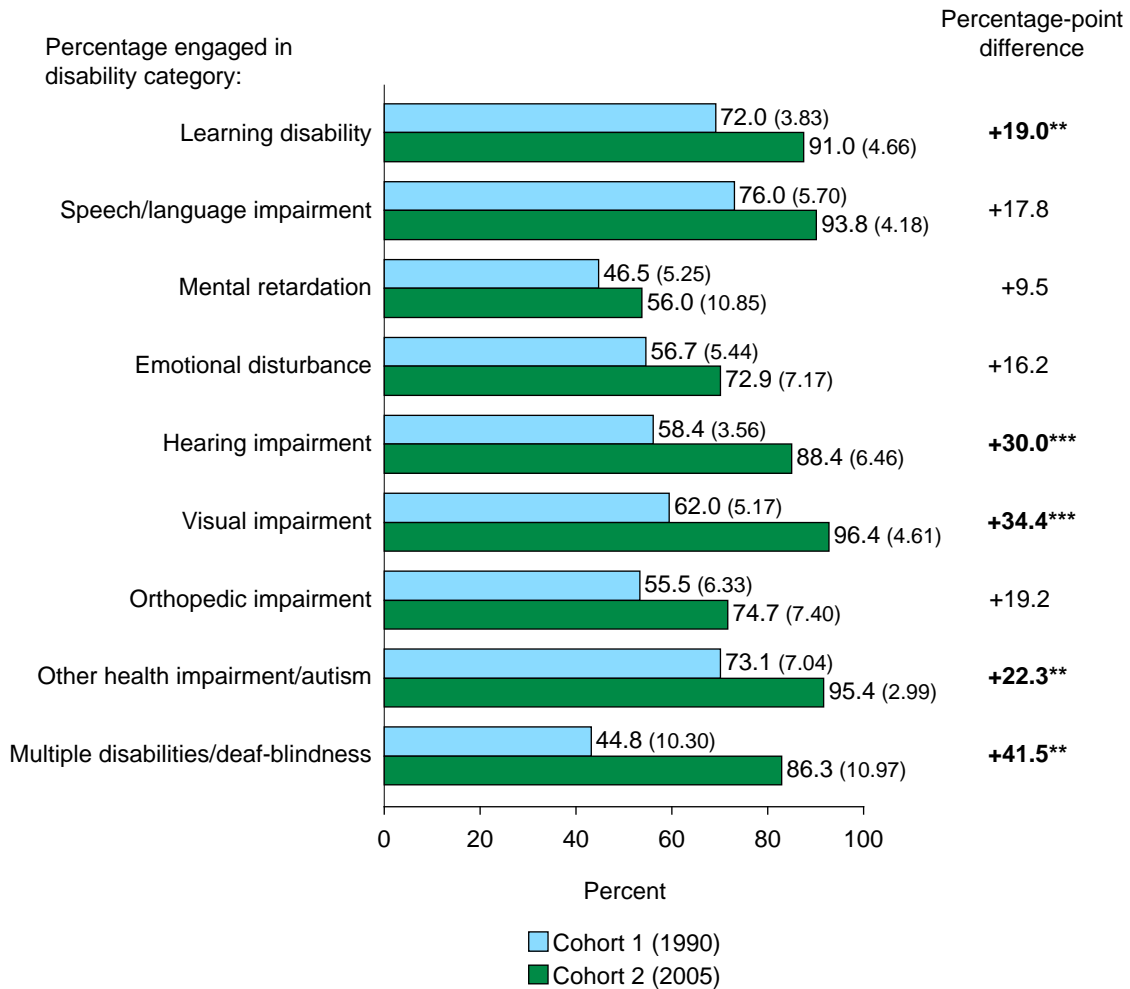
<sup>52</sup> NLTS respondents were asked, “[Are you/is *name of youth*] taking any classes from a [postsecondary school] now?” NLTS2 respondents were asked, “[Are you/is *name of youth*] going to a [postsecondary school] now?” NLTS respondents were asked, “[Do you/does *name of youth*] have a paid job now?” NLTS2 respondents were asked, “[Do you/does *name of youth*] have a paid job now, other than work around the house?”



**Comparisons Across Time of Engagement in Postsecondary Education or Employment by Disability Category**

Rates of engagement in 1990 ranged from 45 percent for youth with multiple disabilities or deaf/blindness to 76 percent for those with speech or language impairments, and in 2005 ranged from 56 percent for youth with mental retardation to 96 percent for those with visual impairments (figure 13). Youth in five of the nine disability categories experienced significantly higher engagement rates in 2005 than in 1990, specifically those with learning disabilities (91 percent vs. 72 percent,  $p < .01$ ), hearing (88 percent vs. 58 percent,  $p < .001$ ), visual (96 percent vs. 62 percent,  $p < .001$ ), or other health impairments (95 percent vs. 73 percent,  $p < .01$ ), and multiple disabilities (86 percent vs. 45 percent,  $p < .01$ ).

Figure 13. Difference between 1990 and 2005 in engagement in postsecondary education and/or employment at the time of the interview for youth with disabilities out of high school 1 to 4 years, by disability category



\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 1,740 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 1,050 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Rates of involvement at the time of the interview in the various modes of engagement did not significantly differ across disability categories between 1990 and 2005, with one exception; youth with hearing impairments were significantly more likely to be employed as well as enrolled in postsecondary education at the time of the 2005 interview as compared with the 1990 interview (48 percent vs. 8 percent), a 39 percentage-point difference ( $p < .001$ ; table 21).

Table 21. Difference between 1990 and 2005 in modes of engagement in postsecondary education and/or employment at the time of the interview for youth with disabilities out of high school 1 to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth who were:									
Employed only									
Cohort 1 (1990)	60.5 (4.17)	43.1 (6.61)	45.0 (5.24)	51.3 (5.49)	29.8 (3.31)	19.5 (4.22)	24.9 (5.51)	35.6 (7.60)	33.7 (9.79)
Cohort 2 (2005)	56.4 (8.07)	36.2 (8.34)	45.5 (10.88)	48.4 (8.06)	23.6 (8.56)	10.0 (7.42)	29.0 (7.73)	55.3 (7.10)	48.3 (15.95)
Percentage-point difference	-4.1	-6.9	+0.5	-2.9	-6.2	-9.5	+4.1	+19.7	+14.6
In postsecondary education only									
Cohort 1 (1990)	4.7 (1.80)	13.6 (4.57)	0.8 (0.94)	1.0 (1.09)	20.3 (2.91)	27.3 (4.74)	23.2 (5.38)	16.7 (5.92)	8.8 (5.87)
Cohort 2 (2005)	10.8 (5.05)	19.2 (6.83)	9.4 (6.38)	12.8 (5.39)	17.1 (7.59)	45.1 (12.31)	32.0 (7.94)	15.3 (5.14)	28.2 (14.36)
Percentage-point difference	+6.1	+5.6	+8.6	+11.8	-3.2	+17.8	+8.8	-1.4	+19.4
Employed and in postsecondary education									
Cohort 1 (1990)	6.7 (2.13)	19.2 (5.26)	0.7 (0.88)	4.4 (2.25)	8.3 (2.00)	15.3 (3.83)	7.4 (3.33)	20.8 (6.44)	2.3 (3.10)
Cohort 2 (2005)	23.7 (6.92)	38.3 (8.43)	1.1 (2.28)	11.8 (5.20)	47.7 (10.07)	41.3 (12.18)	13.7 (5.85)	24.8 (6.16)	9.8 (9.49)
Percentage-point difference	+17.0	+19.1	+0.4	+7.4	<b>+39.4***</b>	+26.0	+6.3	+4.0	+7.5
Not engaged									
Cohort 1 (1990)	28.0 (3.83)	24.0 (5.70)	53.5 (5.25)	43.3 (5.44)	41.6 (3.56)	38.0 (5.17)	44.5 (6.33)	26.9 (7.04)	55.2 (10.30)
Cohort 2 (2005)	9.0 (4.66)	6.2 (4.18)	44.0 (10.85)	27.1 (7.17)	11.6 (6.46)	3.6 (4.61)	25.3 (7.40)	4.6 (2.99)	13.7 (10.97)
Percentage-point difference	<b>-19.0**</b>	-17.8	-9.5	-16.2	<b>-30.0***</b>	<b>-34.4***</b>	-19.2	<b>-22.3**</b>	<b>-41.5**</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 1,740 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 1,050 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

***Comparisons Across Time of Engagement in Postsecondary Education or Employment by High School-Leaving Characteristics***

High school completers who had been out of high school from 1 to 4 years evidenced significantly higher rates of engagement in 2005 than in 1990 (table 22). Eighty-eight percent were engaged in postsecondary education and/or work at the time of the interview in 2005 compared with 75 percent in 1990; a 14 percentage-point difference,  $p < .01$ . In contrast, youth with disabilities who left high school without completing their program (e.g., dropouts) did not experience a significant difference in their engagement rates between the two time periods.

Youth with disabilities who had been out of high school longer, between 2 to 4 years, were more likely to have been reported to be engaged in postsecondary education and/or employment at the time of the interview in 2005 than in 1990; 90 percent vs. 64 percent, a 26 percentage-point difference ( $p < .01$ ). Rates of engagement did not differ significantly between cohorts for youth with disabilities who had been out of high school between 1 to 2 years.

Mode of engagement did not differ significantly by secondary-school-leaving status or years since leaving high school between 1990 and 2005, with the exception that high school completers were more likely to be both employed and in postsecondary school at the time of the 2005 interview than at the 1990 interview. Twenty-four percent were engaged in both activities at the time of the 2005 interview, compared with 9 percent in 1990, a 16 percentage-point difference ( $p < .01$ ).

Table 22. Difference between 1990 and 2005 in engagement in postsecondary education and/or employment at the time of the interview for youth with disabilities out of high school 1 to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth who were engaged					
Cohort 1 (1990)	74.6 (3.09)	48.5 (4.85)	‡	65.9 (3.92)	64.4 (3.79)
Cohort 2 (2005)	88.2 (3.79)	70.2 (11.89)	‡	80.6 (5.45)	90.3 (4.74)
Percentage-point difference	<b>+13.6**</b>	+21.7		+14.7	<b>+25.9***</b>
Modes of engagement					
Percentage who were:					
Employed only					
Cohort 1 (1990)	59.5 (3.48)	45.5 (4.83)	‡	54.8 (4.12)	53.9 (3.95)
Cohort 2 (2005)	49.8 (5.87)	70.1 (11.90)	‡	49.7 (6.89)	54.4 (7.97)
Percentage-point difference	-9.7	24.6		-5.1	+0.5
In postsecondary education only					
Cohort 1 (1990)	6.6 (1.76)	1.4 (1.14)	‡	5.6 (1.90)	3.9 (1.53)
Cohort 2 (2005)	14.2 (4.10)	#	‡	13.6 (4.72)	11.5 (5.11)
Percentage-point difference	+7.6	-1.4		+8.0	+7.6
Employed and in postsecondary education					
Cohort 1 (1990)	8.5 (1.98)	1.7 (1.25)	‡	5.4 (1.87)	6.6 (1.97)
Cohort 2 (2005)	24.2 (5.03)	0.1 (0.82)	‡	17.3 (5.21)	24.4 (6.87)
Percentage-point difference	<b>+15.7**</b>	-1.6		+11.9	+17.8
Not engaged					
Cohort 1 (1990)	25.4 (3.09)	51.5 (4.85)	‡	34.1 (3.92)	35.6 (3.79)
Cohort 2 (2005)	11.8 (3.79)	29.8 (11.89)	‡	19.4 (5.45)	9.7 (4.74)
Percentage-point difference	<b>-13.6**</b>	-21.7		-14.7	<b>-25.9***</b>

# Rounds to zero.

‡ Responses for items with fewer than 30 respondents are not reported. In this case only youth with disabilities out of school 1 to 4 years were included.

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 1,740 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 1,050 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparisons Across Time of Engagement in Postsecondary Education or Employment by Demographic Characteristics***

Rates of engagement in postsecondary education and/or employment at the time of the interview did not differ significantly between 1990 and 2005 for youth with disabilities in both the highest and lowest parent household income categories (table 23). In contrast, those from families in the middle income category were more likely to be engaged in 2005 than in 1990. More than 90 percent of youth with disabilities from the middle household income category were reported to be engaged in school or work at the time of the 2005 interview, compared with 69 percent in 1990, a 22 percentage-point difference ( $p < .01$ ). This higher engagement rate experienced by youth with disabilities in the middle income category in 2005 lessened the gap in engagement rates between those from households in the middle and highest income categories. In 1990, youth with disabilities from households in the middle income category were less likely to be engaged in school and/or work than were those in the highest income category (69 percent vs. 86 percent,  $p < .01$ ); in contrast, in 2005, engagement rates for both income categories were higher than 90 percent.

When examining differences in engagement by racial/ethnic variables, rates of engagement in postsecondary education and/or employment ranged in 1990 from 43 percent for African American youth with disabilities to 73 percent for White youth with disabilities, and in 2005, from 64 percent for African American youth with disabilities to 91 percent for Hispanic youth with disabilities. White youth with disabilities experienced a 17 percentage-point difference between cohorts 1 and 2 (73 percent vs. 90 percent,  $p < .001$ ), and African-American and Hispanic youth with disabilities, 21 and 35 percentage-point differences, respectively (43 percent vs. 64 percent, and 56 percent vs. 91 percent respectively, not significant differences, possibly due in part to the large standard errors for these two groups).

Both males and females experienced higher rates of engagement in 2005 than in 1990; males evidenced an 18 percentage-point difference (89 percent vs. 72 percent,  $p < .001$ ) and females a 27 percentage-point difference (79 percent vs. 52 percent,  $p < .01$ ). In 1990, males were more likely than females to be engaged in school and/or work (72 percent vs. 52 percent,  $p < .01$ ). In 2005, the gap in engagement rates between males and females had lessened, with 89 percent of males and 79 percent of females reported to be engaged in education or employment at the time of the interview (not a significant difference).

Mode of engagement did not differ significantly between 1990 and 2005 by household income, race/ethnicity, or gender, with two exceptions. White youth and males were more likely to be both working and attending school at the time of the interview in 2005 (23 percent and 22 percent, respectively) than in 1990 (6 percent for both demographic groups;  $p < .01$  for both comparisons across time).

4. Postsecondary Education or Employment

Table 23. Difference between 1990 and 2005 in engagement in postsecondary education and/or employment at the time of the interview for youth with disabilities out of high school 1 to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Medium	High	White	African American	Hispanic	Male	Female
Percentage of youth who were engaged								
Cohort 1 (1990)	57.2 (4.59)	68.6 (4.88)	86.1 (4.40)	73.3 (3.09)	43.2 (6.93)	56.2 (10.87)	71.7 (3.13)	51.7 (5.10)
Cohort 2 (2005)	77.7 (7.16)	90.3 (6.04)	98.9 (2.32)	90.4 (3.88)	64.0 (11.83)	91.4 (8.77)	88.9 (4.22)	78.7 (7.09)
Percentage-point difference	+20.5	<b>+21.7**</b>	+12.8	<b>+17.1***</b>	+20.8	+35.2	<b>+17.8***</b>	<b>+27.0**</b>
Modes of engagement								
Percentage of youth who were:								
Employed only								
Cohort 1 (1990)	50.9 (4.64)	57.9 (5.19)	60.1 (6.22)	61.3 (3.40)	35.8 (6.70)	51.2 (10.95)	60.5 (3.38)	40.6 (5.01)
Cohort 2 (2005)	62.1 (8.35)	60.8 (9.97)	30.8 (10.25)	54.1 (6.56)	36.3 (11.85)	63.6 (15.06)	55.4 (6.68)	44.6 (8.60)
Percentage-point difference	+11.2	+2.9	-29.3	-7.2	+0.5	+12.4	-5.1	+4.0
In postsecondary education only								
Cohort 1 (1990)	3.7 (1.75)	5.0 (2.29)	10.3 (3.86)	5.9 (1.65)	2.0 (1.96)	3.1 (3.80)	4.5 (1.43)	5.1 (2.25)
Cohort 2 (2005)	6.8 (4.33)	10.1 (6.15)	33.6 (10.49)	12.9 (4.42)	9.9 (7.36)	13.7 (10.76)	11.1 (4.22)	15.7 (6.30)
Percentage-point difference	+3.1	+5.1	+23.3	+7.0	+7.9	+10.6	+6.6	+10.6
Employed and in postsecondary education								
Cohort 1 (1990)	2.6 (1.48)	5.8 (2.46)	15.7 (4.62)	6.1 (1.67)	5.5 (3.19)	1.9 (2.99)	6.1 (1.65)	6.0 (2.42)
Cohort 2 (2005)	8.8 (4.87)	19.4 (8.07)	34.4 (10.55)	23.4 (5.58)	17.8 (9.42)	14.1 (10.89)	22.4 (5.60)	18.4 (6.71)
Percentage-point difference	+6.2	+13.6	+18.7	<b>+17.3**</b>	+12.3	+12.2	<b>+16.3**</b>	+12.4
Not engaged								
Cohort 1 (1990)	42.8 (4.59)	31.4 (4.88)	13.9 (4.40)	26.7 (3.09)	56.8 (6.93)	43.8 (10.87)	28.9 (3.13)	48.3 (5.10)
Cohort 2 (2005)	22.3 (7.16)	9.7 (6.04)	1.1 (2.32)	9.6 (3.88)	36.0 (11.83)	8.6 (8.77)	11.1 (4.22)	21.3 (7.09)
Percentage-point difference	-20.5	<b>-21.7**</b>	-12.8	<b>-17.1***</b>	-20.8	-35.2	<b>-17.8***</b>	<b>-27.0**</b>

\*\* $p < .01$ , \*\*\* $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school 1 to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 1,740 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on a sample of approximately 1,050 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Summary

This chapter has described differences between 1990 and 2005 in engagement in employment and/or postsecondary education at the time of the interview of youth with disabilities who had been out of secondary school from 1 to 4 years.

Youth with disabilities were more likely to have been reported to be employed and/or attending postsecondary school at the time of the 2005 interview, as compared with the 1990 interview (86 percent vs. 65 percent). Engagement rates for those involved solely in employment or postsecondary education did not significantly differ between 1990 and 2005. In contrast, youth with disabilities were 15 percentage-points more likely to be engaged in both activities—school and work—concurrently at the time of the interview in 2005 as compared with 1990 (21 percent vs. 6 percent)

Youth in five of the nine disability categories experienced significantly higher engagement rates in 2005 than in 1990, specifically those with learning disabilities (19 percentage-point difference); hearing (30 percentage-point difference), visual (34 percentage-point difference), or other health impairments (22 percentage-point difference); and multiple disabilities (42 percentage-point difference).

High school completers evidenced significantly higher rates of engagement in 2005 than in 1990 (88 percent vs. 75 percent, a 14 percentage-point difference). Engagement rates did not differ significantly between the two cohorts for youth with disabilities who had not completed high school. Youth with disabilities who had been out of high school between 2 and 4 years were more likely to have been reported to be engaged in postsecondary education and/or employment at the time of the interview in 2005 than in 1990; 90 percent vs. 64 percent, a 26 percentage-point difference.

Youth from families in the middle income category evidenced a significant difference in their rate of engagement in school and/or work between 1990 and 2005 (69 percent vs. 90 percent, a 22 percentage-point difference), lessening the gap between their rate of engagement and that of youth with disabilities from higher income households. In 1990, 69 percent of those in the middle category and 86 percent of those in the highest income category had been involved in school and/or work at the time of the interview, whereas in 2005, engagement rates for both income categories were higher than 90 percent.

Both males and females experienced higher rates of engagement in 2005 than in 1990; males evidenced an 18 percentage-point difference and females a 27 percentage-point difference. In 1990, males were more likely than females to be engaged in school and/or work (72 percent vs. 52 percent,  $p < .01$ ). In 2005, the gap in engagement rates between males and females had lessened, with 89 percent of males and 79 percent of females reported to be engaged in education or employment at the time of the interview.

The beginning chapters of this report have focused on differences in the postsecondary education and employment experiences of youth with disabilities. The following chapters shift the focus from these two post-high school outcomes to household circumstances and social and community involvement.





## 5. Comparisons Across Time of Household Circumstances of Youth With Disabilities

Previous chapters have focused on postsecondary education and employment, two important post-high school outcomes for youth with disabilities. However, a broader view of transition success should include a focus on other outcomes, such as residential independence and family formation (Chambers, Rabren, and Dunn 2009). The importance of considering a broader set of outcomes beyond postsecondary education and employment is reflected in the current federal policy ensuring services to students with disabilities, IDEA 2004. This law specifies that one of the primary purposes of special education is to prepare students “for ... independent living” [20 U.S.C. § 1400(33)(c)(1)]. In addition to residential independence, other important markers on the path to adult life typically have included financial independence and self-sufficiency, marriage, and parenting (Arnett 2000; Hogan and Astone 1986; Modell 1989; Rindfuss 1991; Settersten 2006).

This chapter examines the comparisons across time in several of these outcomes between 1990 and 2005 for youth with disabilities who have been out of high school up to 4 years, as measured in the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2).<sup>53</sup> Specifically, it explores youth with disabilities’ experiences with regard to

- residential independence;
- dimensions of family formation, including marital and parenting status; and
- indicators of financial independence, such as the use of savings and checking accounts and credit cards.

These findings from NLTS (cohort 1) and NLTS2 (cohort 2) are reported for youth with disabilities as a whole and for youth who differed in their primary disability classification, high school-leaving and demographic characteristics.

### Residential Independence

Figure 14 presents the rates at which youth with disabilities who had been out of high school up to 4 years were living independently (i.e., on their own or with a spouse, partner, or roommate) or semi-independently (i.e., in a college dormitory, military housing, or group home)—a transitional living arrangement between “leaving the parental home and establishing an independent residence” (Goldscheider and Davanzo 1986, p. 187)—at the time of the interview.<sup>54</sup>

Rates of residential independence did not differ significantly in 2005 compared with 1990. Twenty-four percent of youth with disabilities were reported to be living independently and

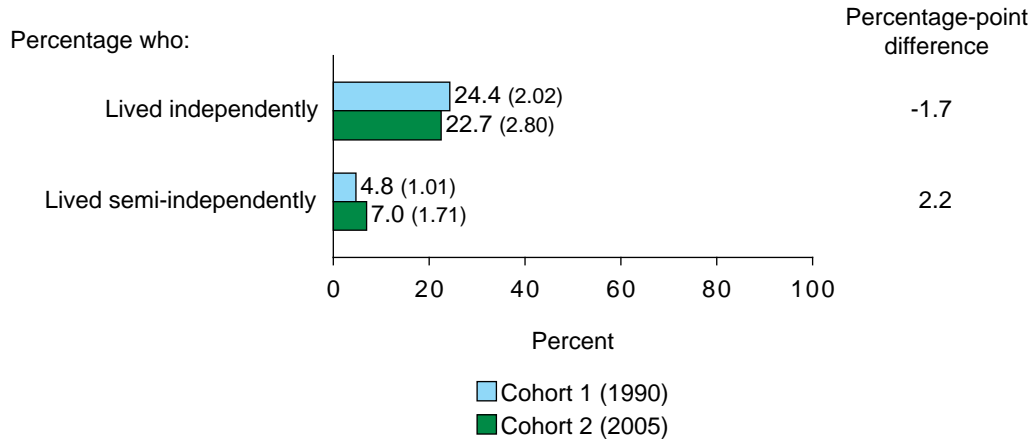
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<sup>53</sup> As described in chapter 1, differences exist between NLTS and NLTS2 that have required analytic adjustments to make comparisons between the studies valid. Readers primarily interested in 2005 household circumstances rates and experiences are referred to the report *The Post-High School Outcomes of Youth With Disabilities up to 4 Years After High School* (Newman et al. 2009), available on the NLTS2 website, [www.nlts2.org](http://www.nlts2.org).

<sup>54</sup> This section focuses on residential independence at the time of the interview, rather than since high school because the NLTS dataset did not include data on residential independence since leaving high school.

5 percent were reported to be living semi-independently at the time of the 1990 interview, compared with 23 percent and 7 percent in 2005 (figure 14).<sup>55</sup>

Figure 14. Comparisons between 1990 and 2005 of residential independence at the time of the interview of youth with disabilities out of high school up to 4 years



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,570 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,610 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

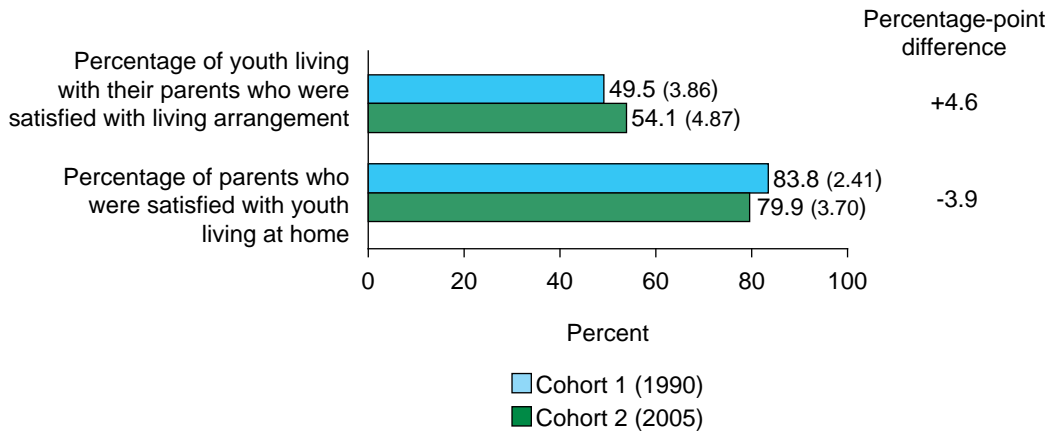
When youth with disabilities who were living with their parents at the time of the interview were asked about their satisfaction with their living arrangement, 50 percent in 1990 and 54 percent in 2005 reported being satisfied with their living situation (no significant difference; figure 15).<sup>56</sup> Parents of youth with disabilities who lived at home also were asked about their satisfaction with the living arrangement.<sup>57</sup> Eighty-four percent of parents in 1990 reported that they were satisfied with the living arrangement and wanted their son or daughter to be living with them, which was not significantly different than the 80 percent who indicated they were satisfied with the living arrangement in 2005. Parents at both points in time were more likely than the youth with disabilities to report being satisfied with the youth living at home (84 percent vs. 50 percent, and 80 percent vs. 54 percent,  $p < .001$  for both comparisons).

<sup>55</sup> Respondents in both studies were asked, “Where [do you/does *name of youth*] live now?”

<sup>56</sup> In both studies, youth who were age 18 years or older, no longer in high school, and living with their parents were asked, “Do you want to be living with your parent or guardian, or would you rather be living somewhere else?”

<sup>57</sup> In both studies, parents of youth who were living at home and were 18 years or older were asked, “Do you want [*name of youth*] to be living there now, or do you wish [he/she] would live somewhere else?”

Figure 15. Comparisons between 1990 and 2005 of satisfaction of youth and parents with current living arrangement of youth with disabilities out of high school up to 4 years who were living with their parents at the time of the interview



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that ranged from approximately 790 to 1,300 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that ranged from approximately 1,020 to 1,450 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparisons Across Time of Residential Independence by Disability Category***

Rates of residential independence at the time of the interview ranged from 9 percent for youth with orthopedic impairment to 27 percent of youth with learning disabilities or speech/language impairments in 1990 and from 7 percent of youth with multiple disabilities or deaf-blindness to 26 percent of youth with learning disabilities in 2005 (table 24). Living semi-independently ranged from 2 percent of youth with mental retardation to 19 percent of those with visual impairments in cohort 1 and from 1 percent of youth with mental retardation to 20 percent of youth with visual impairments in cohort 2. Residential independence rates did not differ significantly between 1990 and 2005 by disability category.

For youth with disabilities living at home at the time of the interview, rates of both youth and parental satisfaction with the living arrangement did not differ significantly across disability categories between 1990 and 2005. In 1990, satisfaction with living at home ranged between 43 percent of youth with hearing impairments and 60 percent of youth in the category of other health impairment and autism. In 2005, satisfaction with living at home ranged from 46 percent of youth with emotional disturbances to 84 percent of multiple disabilities/deaf-blindness.

Table 24. Comparisons between 1990 and 2005 of residential independence at the time of the interview of youth with disabilities out of high school up to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth who:									
Lived independently									
Cohort 1 (1990)	27.0 (3.09)	26.5 (4.82)	15.6 (3.16)	27.2 (4.11)	18.7 (2.29)	18.6 (3.22)	9.2 (2.94)	17.5 (4.63)	10.6 (4.52)
Cohort 2 (2005)	25.8 (4.39)	22.1 (4.37)	16.2 (4.22)	19.2 (4.02)	19.3 (4.96)	19.3 (6.69)	15.8 (4.07)	12.8 (3.20)	7.4 (4.23)
Percentage-point difference	-1.2	-4.4	+0.6	-8.0	+0.6	+0.7	+6.6	-4.7	-3.2
Lived semi-independently									
Cohort 1 (1990)	5.0 (1.52)	16.2 (4.02)	1.5 (1.06)	3.0 (1.57)	11.2 (1.86)	18.9 (3.24)	5.5 (2.32)	6.9 (3.09)	3.6 (2.74)
Cohort 2 (2005)	7.7 (2.68)	8.1 (2.87)	1.3 (1.30)	7.5 (2.69)	10.1 (3.79)	19.5 (6.72)	9.4 (3.26)	5.6 (2.20)	7.7 (4.31)
Percentage-point difference	+2.7	-8.1	-0.2	+4.5	-1.1	+0.6	+3.9	-1.3	+4.1
Percentage of youth living with their parents who were satisfied with living arrangement									
Cohort 1 (1990)	48.3 (5.35)	52.5 (8.61)	57.8 (7.89)	43.7 (7.54)	42.8 (7.23)	50.1 (7.12)	52.3 (7.22)	60.2 (9.11)	‡
Cohort 2 (2005)	54.6 (7.00)	54.5 (8.02)	57.0 (9.91)	46.1 (8.12)	50.4 (15.85)	61.4 (11.23)	65.0 (8.42)	51.6 (7.07)	83.7 (11.38)
Percentage-point difference	+6.3	+2.0	-0.8	+2.4	+7.6	+11.3	+12.7	-8.6	
Percentage of parents who were satisfied with youth living at home									
Cohort 1 (1990)	84.7 (3.52)	91.3 (4.74)	82.8 (4.38)	77.6 (5.45)	84.4 (3.03)	92.4 (3.35)	84.2 (4.60)	87.0 (5.35)	67.3 (8.57)
Cohort 2 (2005)	79.7 (5.91)	91.2 (4.30)	87.1 (4.65)	66.3 (6.59)	86.9 (6.01)	92.5 (6.67)	91.0 (4.07)	81.4 (4.83)	87.7 (6.70)
Percentage-point difference	-5.0	-0.1	+4.3	-11.3	+2.5	+0.1	+6.8	-5.6	+20.4

‡ Responses for items with fewer than 30 respondents are not reported.

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples of approximately 790 to 2,570 youth with disabilities. NLTS2 percentages are weighted population estimates based on samples of approximately 1,020 to 2,630 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Residential Independence by High School-Leaving Characteristics**

Residential independence rates did not differ significantly between 1990 and 2005 for youth with disabilities who varied in their high school-leaving status or the length of time they had been out of high school (table 25). Twenty-four percent and 22 percent of high school completers and 24 percent and 27 percent of noncompleters lived independently at the time of the interviews

in 1990 and 2005, respectively. Rates of living independently in 1990 ranged from 18 percent of those who had been out of high school less than 1 year, to 33 percent of youth with disabilities who had left high school from 2 up to 4 years earlier. Rates in 2005 ranged from 18 percent to 25 percent.

There were no significant differences between cohorts in the rates of either parents or youth with disabilities reporting satisfaction with the youth living at home.

Table 25. Comparisons between 1990 and 2005 of residential independence of youth with disabilities out of high school up to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth who:					
Lived independently					
Cohort 1 (1990)	24.4 (2.42)	24.4 (3.70)	17.9 (3.15)	23.9 (3.46)	33.0 (3.67)
Cohort 2 (2005)	22.0 (3.04)	26.6 (7.23)	18.4 (4.23)	25.7 (5.42)	24.9 (4.96)
Percentage-point difference	-2.4	+2.2	+0.5	+1.8	-8.1
Lived semi-independently					
Cohort 1 (1990)	6.9 (1.43)	0.2 (0.38)	3.1 (1.42)	6.9 (2.06)	5.2 (1.73)
Cohort 2 (2005)	8.1 (2.00)	0.8 (1.46)	4.1 (2.17)	6.0 (2.94)	10.6 (3.53)
Percentage-point difference	+1.2	+0.6	+1.0	-0.9	+5.4
Percentage of youth living with their parents who were satisfied with living arrangement					
Cohort 1 (1990)	52.8 (4.48)	38.7 (7.47)	51.0 (6.35)	44.5 (6.72)	52.0 (6.66)
Cohort 2 (2005)	54.9 (5.26)	49.5 (12.93)	53.1 (8.16)	49.3 (8.26)	59.1 (8.63)
Percentage-point difference	+2.1	+10.8	+2.1	+4.8	+7.1
Percentage of parents who were satisfied with youth living at home					
Cohort 1 (1990)	86.5 (2.62)	76.6 (5.37)	85.7 (3.67)	84.1 (4.24)	80.1 (4.56)
Cohort 2 (2005)	83.4 (3.73)	60.3 (11.69)	85.6 (5.27)	72.1 (7.53)	81.0 (6.27)
Percentage-point difference	-3.1	-16.3	-0.1	-12.0	+0.9

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples of approximately 790 to 2,570 youth with disabilities. NLTS2 percentages are weighted population estimates based on samples of approximately 1,020 to 2,630 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### Comparisons Across Time of Residential Independence by Demographic Characteristics

Rates of residential independence did not differ significantly between 1990 and 2005, by race/ethnicity, income, or gender (table 26).

Table 26. Comparisons between 1990 and 2005 of residential independence of youth with disabilities out of high school up to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth who:								
Lived independently								
Cohort 1 (1990)	24.3 (3.28)	25.7 (3.85)	29.6 (4.87)	27.6 (2.58)	15.5 (4.24)	14.4 (6.71)	21.3 (2.34)	31.5 (3.86)
Cohort 2 (2005)	22.8 (4.34)	29.2 (5.95)	15.3 (5.00)	26.2 (3.61)	21.6 (5.72)	4.5 (4.49)	20.0 (3.31)	28.6 (5.05)
Percentage-point difference	-1.5	+3.5	-14.3	-1.4	+6.1	-9.9	-1.3	-2.9
Lived semi-independently								
Cohort 1 (1990)	3.1 (1.32)	5.5 (2.01)	8.5 (2.97)	6.0 (1.37)	2.8 (1.93)	1.7 (2.47)	5.4 (1.29)	3.5 (1.53)
Cohort 2 (2005)	8.1 (2.82)	4.9 (2.83)	12.0 (4.52)	7.2 (2.12)	5.3 (3.11)	9.6 (6.38)	8.8 (2.35)	2.9 (1.88)
Percentage-point difference	+5.0	-0.6	+3.5	+1.2	+2.5	+7.9	+3.4	-0.6
Percentage of youth living with their parents who were satisfied with living arrangement								
Cohort 1 (1990)	50.7 (6.35)	43.5 (7.02)	44.2 (8.10)	48.9 (4.75)	48.3 (9.21)	55.1 (13.87)	48.5 (4.67)	51.5 (6.86)
Cohort 2 (2005)	57.0 (7.88)	46.7 (8.63)	55.6 (9.64)	55.7 (5.81)	47.5 (10.04)	53.6 (14.46)	50.2 (6.26)	62.4 (7.35)
Percentage-point difference	+6.3	+3.2	+11.4	+6.8	-0.8	-1.5	+1.7	+10.9
Percentage of parents who were satisfied with youth living at home								
Cohort 1 (1990)	82.0 (3.98)	81.4 (4.65)	84.5 (5.29)	85.7 (2.76)	78.2 (6.86)	89.0 (7.90)	84.8 (2.81)	81.1 (4.64)
Cohort 2 (2005)	81.4 (5.28)	72.0 (7.87)	83.8 (6.39)	78.0 (4.69)	74.4 (8.10)	90.2 (7.88)	79.4 (4.57)	80.9 (6.25)
Percentage-point difference	-0.6	-9.4	-0.7	-7.7	-3.8	+1.2	-5.4	-0.2

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples of approximately 790 to 2,570 youth with disabilities. NLTS2 percentages are weighted population estimates based on samples of approximately 1,020 to 2,630 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/ interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Across racial/ethnic categories, from 14 percent of Hispanic youth with disabilities to 28 percent of White youth with disabilities in 1990 were reported to be living independently at the time of the interview, and from 5 percent to 26 percent of these two groups were living independently in 2005.

In 1990, 21 percent and 32 percent of males and females, respectively, were living independently, compared with 20 percent and 29 percent in 2005.

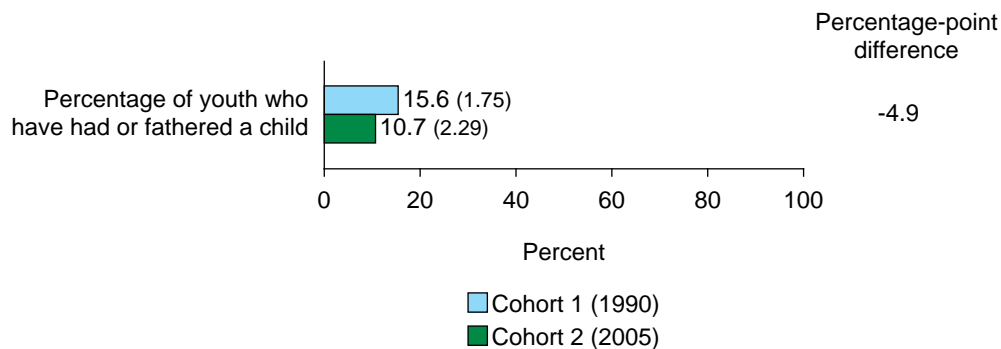
Across income groups, from 24 percent of cohort 1 youth with disabilities in the lowest income group to 30 percent of those in the highest income category lived independently; in cohort 2, 15 percent in the highest income group to 29 percent of those in the middle income category lived independently.

There were no significant differences between cohorts in the rates of either parents or youth with disabilities reporting satisfaction with the youth living at home.

## Parenting and Marriage

In 2005, 11 percent of youth with disabilities who had been out of high school up to 4 years were reported ever to have had or fathered a child, compared with 16 percent in 1990 (not a significant difference; figure 16).<sup>58</sup>

Figure 16. Comparisons between 1990 and 2005 of parenting status of youth with disabilities out of high school up to 4 years



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,490 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,170 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

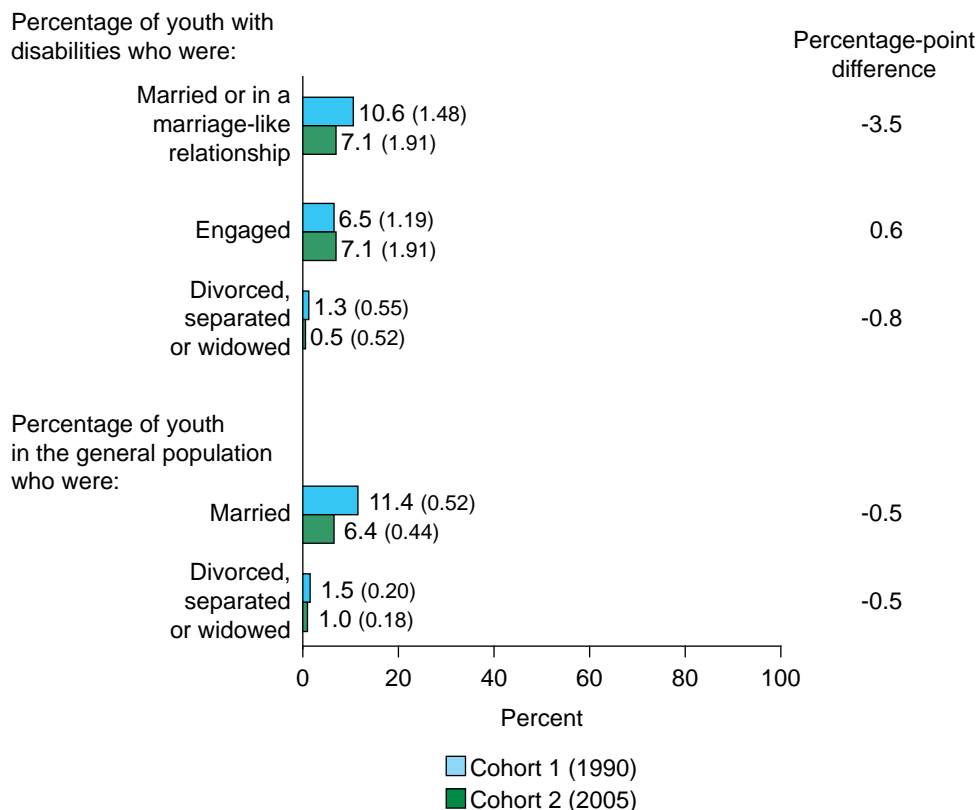
The marriage rate also did not differ significantly between cohorts. In 2005, 7 percent and in 1990, 11 percent of youth with disabilities were reported to be married or in a marriage-like relationship (figure 17).<sup>59</sup> Seven percent in both cohorts were reported to be engaged. Additionally, youth with disabilities did not differ significantly from youth in the general population for marriage rates in 1990 and 2005.<sup>60</sup>

<sup>58</sup> NLTS respondents were asked, “[Have you/has *youth name*] ever had or fathered any children?” NLTS2 respondents were asked, “[Do you/does *youth name*] have any children?”

<sup>59</sup> NLTS respondents were asked, “Is youth married, single, never married, married or living with, divorced or separated, or widowed?” NLTS2 respondents were asked, “Are you [Is youth] engaged, single, never married, married, in a marriage-like relationship, divorced, separated, or widowed?”

<sup>60</sup> Calculated for 18- through 21-year-old out-of-high school youth using data from the U.S. Census Bureau, Current Population Survey (CPS), 1990 and 2005.

Figure 17. Comparisons between 1990 and 2005 of marital status of youth with disabilities and youth in the general population out of high school up to 4 years



NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. No comparison data was available for youth in the general population for engaged. NLTS percentages are weighted population estimates based on a sample of approximately 2,490 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,230 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005; U.S. Census Bureau, Current Population Survey (CPS), 1990 and 2005 surveys, responses for 18- to 21-year-olds.

### ***Comparisons Across Time of Parenting and Marital Status by Disability Category***

Parenting and marriage rates between 1990 and 2005 by disability category did not differ significantly (table 27). In 1990, parenting rates ranged from 6 percent of youth with visual impairments to 18 percent of those with emotional disturbances and from 3 percent of youth with multiple disabilities/deaf-blindness to 15 percent of youth with mental retardation in 2005. Marriage rates ranged from 4 percent of youth with orthopedic impairments to 14 percent of youth with speech/language impairments in 1990 and from 2 percent of youth with visual impairments to 8 percent of youth with learning disabilities in 2005.



Table 27. Comparisons between 1990 and 2005 of parenting and marital status of youth with disabilities out of high school up to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage who:									
Ever had or fathered a child									
Cohort 1 (1990)	16.0 (2.62)	15.0 (3.96)	14.7 (3.15)	18.4 (3.66)	8.8 (1.67)	5.8 (1.95)	7.2 (2.67)	9.7 (3.70)	9.7 (4.40)
Cohort 2 (2005)	10.3 (3.36)	9.8 (3.50)	14.7 (4.38)	14.1 (3.90)	6.8 (3.80)	4.5 (3.63)	7.5 (3.12)	5.4 (2.36)	3.0 (3.13)
Percentage-point difference	-5.7	-5.2	0.0	-4.3	-2.0	-1.3	+0.3	-4.3	-6.7
Were married or in a marriage-like relationship									
Cohort 1 (1990)	11.9 (2.31)	13.5 (3.79)	8.1 (2.43)	8.2 (2.59)	6.6 (1.47)	5.7 (1.94)	3.7 (1.95)	8.1 (3.41)	7.2 (3.85)
Cohort 2 (2005)	7.9 (3.00)	4.2 (2.35)	7.1 (3.18)	5.9 (2.65)	2.4 (2.14)	1.8 (2.35)	2.6 (1.85)	5.1 (2.28)	2.4 (2.71)
Percentage-point difference	-4.0	-9.3	-1.0	-2.3	-4.2	-3.9	-1.1	-3.0	-4.8

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,490 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,170 to 2,230 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparisons Across Time of Parenting and Marital Status by High School-Leaving Characteristics***

Differences between cohorts in parenting and marriage rates were not apparent for youth with disabilities regarding high school completion status or years since leaving high school (table 28). In 1990, 11 percent of high school completers and 27 percent of noncompleters had had or fathered a child, and 9 percent and 15 percent, respectively, had married or were living in a marriage-like relationship. In 2005, the parenting rates were 9 percent and 23 percent, and marriage rates were 7 percent and 11 percent for high school completers and noncompleters, respectively.

Parenting rates ranged from 10 percent for those out of high school less than 1 year to 25 percent of youth with disabilities out from 2 to 4 years in 1990. In 2005, rates ranged from 6 percent to 14 percent for these two groups. In 1990, 7 percent of youth with disabilities who had been out of high school less than 1 year and 17 percent of those who had left school between 2 and 4 years earlier were reported to be married or in a marriage-like relationship. In 2005, marriage rates ranged from 7 percent to 9 percent.

Table 28. Comparisons between 1990 and 2005 of parenting and marital status of youth with disabilities out of high school up to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage who:					
Ever had or fathered a child					
Cohort 1 (1990)	10.6 (1.78)	27.3 (3.90)	10.1 (2.53)	12.7 (2.76)	25.0 (3.45)
Cohort 2 (2005)	8.6 (2.26)	23.3 (7.92)	5.7 (2.86)	13.6 (4.46)	13.7 (4.47)
Percentage-point difference	-2.0	-4.0	-4.4	+0.9	-11.3
Were married or in a marriage-like relationship					
Cohort 1 (1990)	9.0 (1.66)	14.5 (3.08)	6.7 (2.10)	9.0 (2.38)	16.9 (2.98)
Cohort 2 (2005)	6.5 (2.00)	10.5 (5.67)	6.7 (3.06)	4.7 (2.78)	9.4 (3.84)
Percentage-point difference	-2.5	-4.0	0.0	-4.3	-7.5

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,490 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,170 to 2,230 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparisons Across Time of Parenting and Marital Status by Demographic Characteristics***

No statistically significant differences between cohorts related to having had or fathered a child or being married or living in a marriage-like relationship were noted for youth with disabilities who differed in their household income level, gender, or racial/ethnic category, (table 29). Parenting rates in 1990 ranged from 8 percent of those in the highest income category to 19 percent of those in the lowest. For these two groups in 2005, parenting rates ranged from 2 percent to 16 percent, respectively. Marriage rates in 1990 ranged from 7 percent of those in the highest income category to 14 percent in the medium income category, and in 2005 ranged from 6 percent to 9 percent for these two income groups, respectively.

Parenting rates by racial/ethnic category ranged from 12 percent of White youth with disabilities to 22 percent of African American youth with disabilities in cohort 1 and from 9 percent of Hispanic youth with disabilities to 15 percent of African American youth with disabilities in cohort 2. In 1990, marriage rates ranged from 3 percent of African American youth with disabilities to 16 percent of Hispanic youth with disabilities, and from 1 percent of African American to 9 percent of White youth with disabilities in 2005.

Eleven percent and 27 percent in 1990 and 7 percent and 18 percent in 2005 of males and females, respectively, were reported to have had or fathered a child. In addition, 8 percent of

males and 16 percent of females were married or living in a marriage-like relationship in 1990. Marriage rates in 2005 were 5 percent for males and 12 percent for females.

Table 29. Comparisons between 1990 and 2005 of parenting and marital status of youth with disabilities out of high school up to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage who:								
Ever had or fathered a child								
Cohort 1 (1990)	18.8 (3.05)	15.7 (3.27)	8.3 (2.96)	11.5 (1.88)	21.9 (4.93)	18.6 (7.50)	10.5 (1.79)	26.9 (3.77)
Cohort 2 (2005)	16.1 (4.14)	11.3 (4.66)	1.6 (1.99)	10.2 (2.81)	15.3 (5.43)	9.2 (6.63)	7.1 (2.41)	18.0 (4.58)
Percentage-point difference	-2.7	-4.4	-6.7	-1.3	-6.6	-9.4	-3.4	-8.9
Were married or in a marriage-like relationship								
Cohort 1 (1990)	10.7 (2.42)	13.8 (3.10)	7.1 (2.77)	11.3 (1.87)	3.4 (2.16)	15.6 (6.97)	8.0 (1.59)	16.3 (3.15)
Cohort 2 (2005)	7.5 (2.97)	9.4 (4.32)	5.8 (3.67)	9.4 (2.70)	1.2 (1.66)	5.2 (5.11)	4.9 (2.02)	11.5 (3.83)
Percentage-point difference	-3.2	-4.4	-1.3	-1.9	-2.2	-10.4	-3.1	-4.8

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities who had been out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,490 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 2,170 to 2,230 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Financial Independence

Being able to manage one's bank account and credit cards are stepping-stones for youth to achieve financial security and responsibility (Bell et al. 2006). This section focuses on differences between 1990 and 2005 in youth with disabilities' ability to exercise financial independence and responsibility by obtaining bank accounts and credit cards.

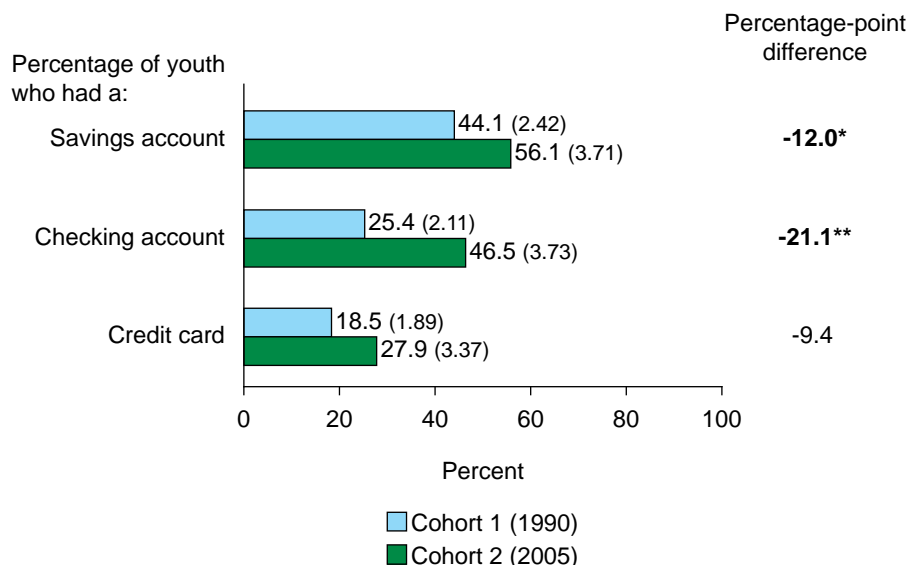
Significant differences were observed between 1990 and 2005 in rates of having a savings<sup>61</sup> or checking account.<sup>62</sup> Overall, 44 percent of cohort 1 youth with disabilities were reported to have a savings account, compared with 56 percent in cohort 2, a 12 percentage-point difference ( $p < .01$ , figure 18). In 2005, youth with disabilities also were more likely to have a checking account than in 1990 (47 percent vs. 25 percent,  $p < .001$ ). The rate of having a credit card<sup>63</sup> did not differ significantly between 1990 (19 percent) and 2005 (28 percent).

<sup>61</sup> Respondents in both studies were asked, "Do you [Does youth] have a savings account?"

<sup>62</sup> Respondents in both studies were asked, "Do you [Does youth] have a checking account where you write checks?"

<sup>63</sup> Respondents in both studies were asked, "Do you [Does youth] have a credit card or charge account in your own name?"

Figure 18. Comparisons between 1990 and 2005 of financial management tools used by youth with disabilities out of high school up to 4 years



\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,450 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,190 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Financial Independence by Disability Category**

Table 30 indicates several significant differences between cohorts in the use of financial management tools within disability categories. Youth in the hearing impairment (65 percent vs. 43 percent,  $p < .01$ ), other health impairment/autism (66 percent vs. 37 percent,  $p < .001$ ), and multiple disabilities/deaf-blindness categories (63 percent vs. 2 percent,  $p < .001$ ) experienced significantly higher rates of having a savings account in 2005 than in 1990, with differences of 22, 29, and 61 percentage points, respectively.

Youth in seven of the nine disability categories were more likely to have a checking account in 2005 than in 1990, specifically those with learning disabilities (50 percent vs. 29 percent,  $p < .01$ ), speech/language impairments (58 percent vs. 26 percent,  $p < .001$ ), hearing impairments (64 percent vs. 32 percent,  $p < .001$ ), visual impairments (72 percent vs. 35 percent,  $p < .001$ ), orthopedic impairments (56 percent vs. 25 percent,  $p < .001$ ), other health impairment/autism (59 percent vs. 25 percent,  $p < .001$ ), or multiple disabilities or deaf/blindness (34 percent vs. 1 percent,  $p < .001$ ).

Youth in several categories also were more likely to have a credit card in 2005 than in 1990; specifically, those with hearing (37 percent vs. 11 percent,  $p < .001$ ) or visual impairments (51 percent vs. 22 percent,  $p < .01$ ), or multiple disabilities or deaf/blindness (22 percent vs. 1 percent,  $p < .01$ ).

Table 30. Comparisons between 1990 and 2005 of financial independence of youth with disabilities out of high school up to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf-blindness
Percentage of youth who had a:									
Saving account									
Cohort 1 (1990)	49.5 (3.63)	48.0 (5.58)	28.4 (4.03)	39.7 (4.64)	43.4 (2.99)	45.9 (4.21)	52.2 (5.18)	37.0 (6.08)	2.2 (2.17)
Cohort 2 (2005)	58.4 (5.50)	60.9 (5.70)	40.9 (6.08)	48.0 (5.78)	65.2 (6.79)	61.2 (8.62)	59.1 (5.82)	66.3 (5.00)	63.2 (8.84)
Percentage-point difference	+8.9	+12.9	+12.5	+8.3	<b>+21.8**</b>	+15.3	+6.9	<b>+29.3***</b>	<b>+61.0***</b>
Checking account									
Cohort 1 (1990)	29.0 (3.27)	26.4 (4.93)	13.7 (3.08)	22.0 (3.93)	31.8 (2.78)	35.2 (4.01)	24.8 (4.49)	24.7 (5.42)	1.1 (1.54)
Cohort 2 (2005)	49.7 (5.58)	58.0 (5.75)	26.7 (5.46)	34.5 (5.51)	63.7 (6.76)	71.9 (7.95)	56.0 (5.76)	58.5 (5.23)	34.1 (8.71)
Percentage-point difference	<b>+20.7**</b>	<b>+31.6***</b>	+13.0	+12.5	<b>+31.9***</b>	<b>+36.7***</b>	<b>+31.2***</b>	<b>+33.8***</b>	<b>+33.0***</b>
Credit card									
Cohort 1 (1990)	22.1 (2.99)	23.1 (4.73)	8.4 (2.48)	14.3 (3.31)	11.4 (1.90)	21.7 (3.48)	16.4 (3.85)	23.0 (5.27)	0.7 (1.23)
Cohort 2 (2005)	30.8 (5.17)	34.7 (5.57)	9.2 (3.55)	22.4 (4.84)	37.4 (6.86)	51.4 (8.89)	22.5 (4.84)	35.0 (5.03)	21.6 (7.48)
Percentage-point difference	+8.7	+11.6	+0.8	+8.1	<b>+26***</b>	<b>+29.7**</b>	+6.1	+12.0	<b>+20.9**</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,450 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,190 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Financial Independence by High School-Leaving Characteristics**

Between cohorts, the use of financial tools such as savings and checking accounts, and credit cards did not differ significantly by secondary-school-leaving status, with one exception (table 31). High school completers were more likely to have a checking account in 2005 than in 1990 (52 percent vs. 32 percent,  $p < .001$ ).

Several differences between 1990 and 2005 in the use of savings and checking accounts were evidenced by length of time since leaving high school. Those who had been out of high school for less than 1 year were more likely to be reported to have savings (63 percent vs. 40 percent,  $p < .01$ ) and checking (46 percent vs. 22 percent,  $p < .001$ ) accounts in 2005 than in 1990. In addition, youth with disabilities who had been out of high school from 1 to 2 years were more likely to have a checking account in 2005 than in 1990 (46 percent vs. 26 percent,  $p < .01$ ).

Table 31. Comparisons between 1990 and 2005 of financial independence of youth with disabilities out of high school up to 4 years, by secondary-school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage of youth who had a:					
Saving account					
Cohort 1 (1990)	54.4 (2.91)	20.7 (3.59)	40.2 (4.15)	49.2 (4.20)	44.6 (4.00)
Cohort 2 (2005)	59.6 (4.00)	35.5 (8.93)	62.7 (5.88)	50.5 (6.50)	53.0 (6.80)
Percentage-point difference	+5.2	+14.8	<b>+22.5**</b>	+1.3	+8.4
Checking account					
Cohort 1 (1990)	32.2 (2.73)	9.7 (2.61)	21.6 (3.47)	26.0 (3.69)	29.6 (3.65)
Cohort 2 (2005)	52.2 (4.08)	12.8 (6.22)	45.9 (6.06)	45.5 (6.46)	48.2 (6.84)
Percentage-point difference	<b>+20.0***</b>	+3.1	<b>+24.3***</b>	<b>+19.5**</b>	+18.6
Credit card					
Cohort 1 (1990)	22.6 (2.44)	8.3 (2.43)	13.1 (2.85)	20.5 (3.39)	23.7 (3.41)
Cohort 2 (2005)	31.2 (3.80)	8.4 (5.18)	27.4 (5.43)	23.7 (5.61)	32.1 (6.37)
Percentage-point difference	+8.6	+0.1	+14.3	+3.2	+8.4

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,450 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,190 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Financial Independence by Demographic Characteristics**

Rates of having a savings account did not differ significantly between 1990 and 2005 by household income, race/ethnicity, or gender (table 32). Several differences were apparent between the two time periods, related to having a checking account. Youth with disabilities in the lowest and middle income categories were more likely to have a checking account in 2005 than in 1990 (33 percent vs. 15 percent and 57 percent vs. 34 percent, respectively,  $p < .01$  for both comparisons). Rates of having a checking account also were higher between 2005 and 1990 for youth with disabilities who were White (56 percent vs. 32 percent,  $p < .001$ ) and for those who were males (48 percent vs. 25 percent,  $p < .001$ ).

Rates of credit card ownership did not differ significantly between 1990 and 2005, with one exception. Youth with disabilities in the highest income category were more likely to have a credit card in 2005 than in 1990 (55 percent vs. 30 percent,  $p < .01$ ).

Table 32. Comparisons between 1990 and 2005 of financial independence of youth with disabilities out of high school up to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage of youth who had a:								
Savings account								
Cohort 1 (1990)	36.4 (3.79)	48.2 (4.51)	68.1 (5.08)	50.9 (2.96)	28.8 (5.55)	28.7 (8.75)	44.8 (2.94)	42.6 (4.25)
Cohort 2 (2005)	44.0 (5.56)	62.3 (7.20)	75.6 (6.80)	61.6 (4.55)	47.2 (7.61)	34.4 (11.07)	55.9 (4.71)	56.4 (5.93)
Percentage-point difference	+7.6	+14.1	+7.5	+10.7	+18.4	+5.7	+11.1	+13.8
Checking account								
Cohort 1 (1990)	14.7 (2.79)	34.4 (4.28)	52.1 (5.42)	31.5 (2.75)	12.4 (4.02)	7.5 (5.09)	25.0 (2.55)	26.3 (3.78)
Cohort 2 (2005)	33.1 (5.26)	57.1 (7.37)	71.8 (7.16)	56.3 (4.64)	24.2 (6.52)	29.7 (10.68)	47.6 (4.73)	44.3 (5.96)
Percentage-point difference	<b>+18.4**</b>	<b>+22.7**</b>	+19.7	<b>+24.8***</b>	+11.8	+22.2	<b>+22.6***</b>	+18.0
Credit card								
Cohort 1 (1990)	13.0 (2.65)	23.0 (3.79)	29.8 (4.97)	21.4 (2.42)	13.0 (4.10)	17.2 (7.28)	18.6 (2.29)	18.3 (3.32)
Cohort 2 (2005)	16.1 (4.16)	32.9 (6.99)	55.1 (7.89)	31.7 (4.38)	21.0 (6.20)	18.0 (9.04)	28.9 (4.32)	26.0 (5.29)
Percentage-point difference	+3.1	+9.9	<b>+25.3**</b>	+10.3	+8.0	+0.8	+10.3	+7.7

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,450 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,190 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Summary

This chapter presented findings related to differences in residential independence, parental and marital status, and financial independence of youth with disabilities who had been out of high school up to 4 years in 1990 and 2005.

Rates of residential independence did not differ significantly in 2005 compared with 1990 for youth with disabilities as a group, by disability category, or by high school-leaving and demographic characteristics. Twenty-four percent of youth with disabilities were reported to be living independently and 5 percent were reported to be living semi-independently at the time of the 1990 interview, compared with 23 percent and 7 percent in 2005. Residential independence rates ranged from 9 percent of youth with orthopedic impairment to 27 percent of youth with learning disabilities or speech/language impairments in 1990 and from 7 percent of youth with multiple disabilities or deaf-blindness to 26 percent of youth with learning disabilities in 2005.

Parenting and marriage rates also did not differ significantly between 1990 and 2005. In 2005, 11 percent of youth with disabilities who had been out of high school up to 4 years were reported ever to have had or fathered a child and 7 percent were reported to be married or in a marriage-like relationship, compared with 16 percent and 11 percent, respectively, in 1990. In 1990, parenting rates ranged from 6 percent of youth with visual impairments to 18 percent of those with emotional disturbances and from 3 percent of youth with multiple disabilities/deaf-blindness to 15 percent of youth with mental retardation in 2005. Marriage rates ranged from 4 percent of youth with orthopedic impairments to 14 percent of youth with speech/language impairments in 1990 and from 2 percent of youth with visual impairments to 8 percent of youth with learning disabilities in 2005.

In contrast, experiences related to financial independence differed significantly between 1990 and 2005. Youth with disabilities who had been out of high school from 1 to 4 years reported higher rates of having had a savings account or checking account in 2005 than 1990. Overall, 44 percent of youth with disabilities in 1990 were reported to have a savings account, compared with 56 percent in 2005, a 12 percentage-point difference. In 2005, youth with disabilities also were more likely to have a checking account than in 1990 (47 percent vs. 25 percent). The rate of having a credit card did not differ significantly between 1990 (19 percent) and 2005 (28 percent).

Youth in the hearing impairment (65 percent vs. 43 percent), other health impairment/autism (66 percent vs. 37 percent), and multiple disabilities/deaf-blindness categories (63 percent vs. 2 percent) experienced significantly higher rates of having had a savings account in 2005 than in 1990. Youth in seven of the nine disability categories also were more likely to have a checking account in 2005 than in 1990, specifically those with learning disabilities (50 percent vs. 29 percent), speech/language impairments (58 percent vs. 26 percent), hearing impairments (64 percent vs. 32 percent), visual impairments (72 percent vs. 35 percent), or orthopedic impairments (56 percent vs. 25 percent); other health impairment/autism (59 percent vs. 25 percent), or multiple disabilities or deaf/blindness (34 percent vs. 1 percent).

High school completers were more likely to have a checking account in 2005 than in 1990 (52 percent vs. 32 percent). Youth with disabilities who had been out of high school for less than 1 year were more likely to have savings (63 percent vs. 40 percent,  $p < .01$ ) and checking (46 percent vs. 22 percent,  $p < .001$ ) accounts in 2005 than in 1990. In addition, youth with disabilities who had been out of high school from 1 to 2 years were more likely to have a checking account in 2005 than in 1990 (46 percent vs. 26 percent).

Youth with disabilities in the lowest and middle income categories were more likely to have a checking account in 2005 than in 1990 (33 percent vs. 15 percent and 57 percent vs. 34 percent, respectively). Youth with disabilities in the highest income category were more likely to have a credit card in 2005 than in 1990 (55 percent vs. 30 percent). Rates of having a checking account also were higher between 2005 and 1990 for youth with disabilities who were White (56 percent vs. 32 percent) and for those who were males (48 percent vs. 25 percent).

This chapter has described comparisons across time between 1990 and 2005 in key aspects of independence for youth with disabilities in their first 4 years out of high school. In the following chapter the focus shifts to comparisons across time of social and community involvement.



## 6. Comparisons Across Time of the Community Integration of Out-of-High School Youth With Disabilities

Although participating in postsecondary education and/or employment are critical steps on the road to adult independence for youth with disabilities after high school, the broader notion of “social inclusion” is increasingly used to characterize transition success. Social inclusion “rests on the principle that democratic societies are enriched by the full inclusion of their citizens in the ebb and flow of community affairs” (Osgood et al. 2005; p. 12). Being involved in one’s community has long been a valued outcome for youth with disabilities (Halpern 1985; National Center on Educational Outcomes 1993) and has been the focus of reports from both NLTS and NLTS2 (e.g., Newman 1991, Wagner 2005). This chapter adds to an understanding of the social inclusion of youth with disabilities who had been out of high school up to 4 years by addressing two dimensions of their community integration:

- **Participation in the community.** Taking part in community activities can provide opportunities for youth to meet people with like interests, develop new skills, and experience the satisfaction of shared accomplishments and of making a contribution to the community. Research has demonstrated that life satisfaction among adolescents with disabilities is higher when youth are more active in their neighborhood and community (Bramston, Bruggerman, and Pretty 2002). The ability of youth to participate in community activities is enhanced if they are able to get to locations in their community where such activities occur. Although mass transportation is available in some communities, being able to drive can be an important source of community mobility. An additional way to participate in one’s community that is available to U.S. citizens age 18 or older is the right to vote. This chapter reports findings from NLTS and NLTS2 regarding youth’s membership in organized community or extracurricular groups,<sup>64</sup> their participation in volunteer or community service activities,<sup>65</sup> youth having earned driving privileges,<sup>66</sup> and their voter registration rates.<sup>67</sup>
- **Criminal justice system involvement.** The actions of some youth may violate the laws or norms of their communities to such a degree that they become involved with the

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<sup>64</sup> NLTS respondents were asked, “In the past 12 months [have you/has *name of youth*] belonged to any social or community groups, like a sports team or church group?” NLTS2 respondents were asked, “During the past 12 months [have you/has *name of youth*] taken part in any group activities, such as scouting, church or temple youth group, or nonschool team sports like soccer or softball?”

<sup>65</sup> NLTS respondents were asked, “In the past 12 months [have you/has *name of youth*] done any volunteer activity?” NLTS2 respondents were asked, “During the past 12 months [have you/has *name of youth*] done any volunteer or community service activities?”

<sup>66</sup> NLTS respondents were asked, “[Do you/does *name of youth*] have a driver’s license?” NLTS2 respondents were asked, “[Do you/does *name of youth*] have a driver’s license or learner’s permit?” All NLTS2 youth were age-eligible for a driver’s license by Wave 3 of data collection.

<sup>67</sup> In both studies, respondents were asked for youth at least 18 years old, “[Are you/is *name of youth*] registered to vote?”

criminal justice system through arrest. Findings are reported regarding whether youth were reported ever to have been arrested.<sup>68</sup>

These findings from NLTS and NLTS2 are reported for youth with disabilities as a whole and for youth who differed in their primary disability classification, school-leaving characteristics, and selected demographic characteristics.

### **Community Participation**

Figure 19 presents the rates at which youth with disabilities who had been out of high school from 1 to 4 years had participated in organized community groups, volunteer activities, or either of these forms of community participation. Because the survey items that generated these findings refer to activities in the preceding 12 months and because the focus of this report is activities of youth with disabilities after high school, findings for these aspects of community participation are reported only for youth who had been out of secondary school at least a year so as to avoid including secondary school experiences.

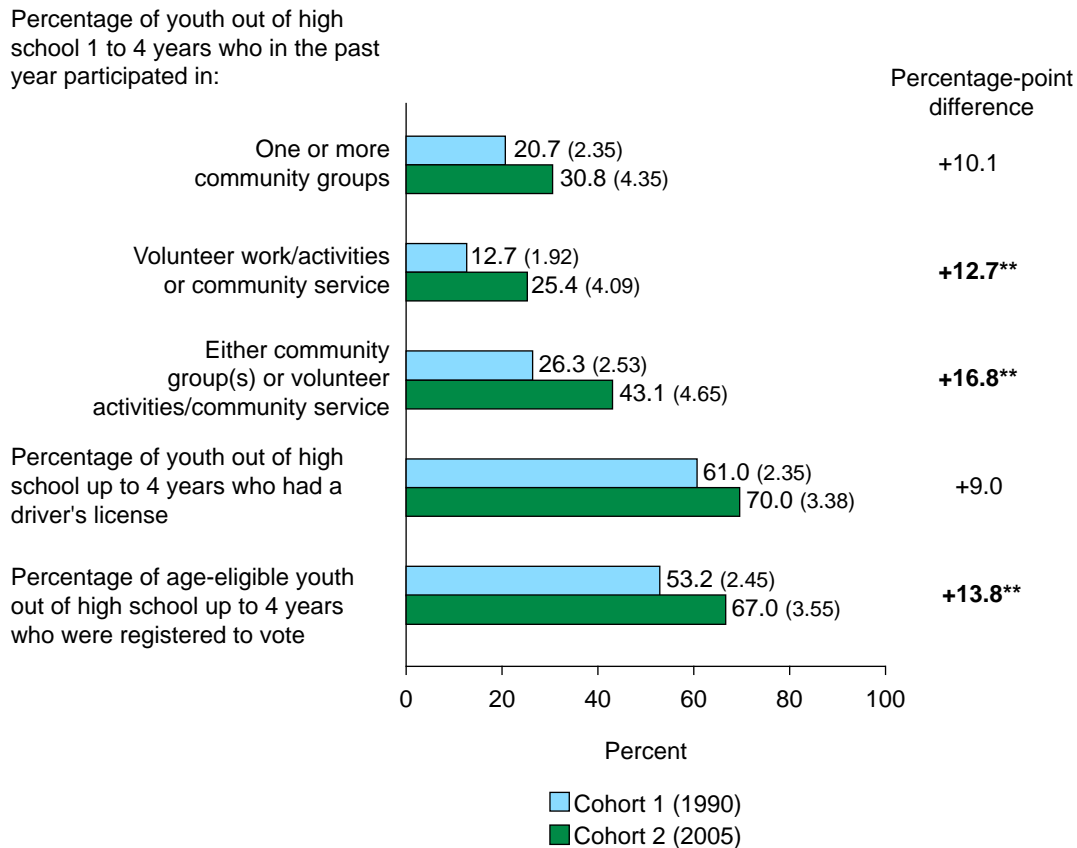
Rates of membership in organized community groups were not significantly different in 2005 than in 1990 (figure 19). Overall, 21 percent of cohort 1 youth who had been out of high school from 1 to 4 years were reported to have belonged to an organized group in the preceding year, compared with 31 percent of youth in cohort 2. However, the rate of volunteerism was 13 percentage points higher in 2005 than in 1990 (25 percent vs. 13 percent,  $p < .01$ ), and the likelihood of youth with disabilities taking part in either form of community activity also was higher in 2005, by 17 percentage points (43 percent vs. 26 percent,  $p < .01$ ).

The percentage of youth with disabilities who had been out of high school up to 4 years and had a driver's license did not differ significantly in 1990 compared with 2005. Overall, 61 percent of cohort 1 youth with disabilities were reported to have a driver's license, as were 70 percent of cohort 2 youth. There were however, significant differences in the percentage of students registered to vote. A total of 53 percent of youth with disabilities in 1990 were reported to be registered to vote, whereas 67 percent were reported to be registered to vote in 2005, a 14 percentage-point difference ( $p < .01$ ).

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<sup>68</sup> NLTS respondents were asked, “[Have you/has *name of youth*] ever been arrested?” For NLTS2, data that were collected in Wave 3 on arrests in the preceding 2 years were combined with reports of arrests in Waves 1 and 2 to construct variables measuring whether youth had ever been arrested.

Figure 19. Comparisons between 1990 and 2005 of the community participation of out-of-high school youth with disabilities



\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings regarding group and volunteer participation are reported for youth with disabilities out of high school from 1 to 4 years so as not to include high school experiences; findings regarding having a driver's license and being registered to vote are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,700 to 2,490 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,310 to 2,250 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Community Participation by Disability Category**

As was true of youth with disabilities as a whole, there were no significant differences in group membership rates between 1990 and 2005 for youth in any disability category (table 33). In contrast, youth in the speech/language and visual impairment categories had significantly higher rates of participation in volunteer or community service activities in 2005 than in 1990, with differences of 25 percentage points (35 percent vs. 10 percent,  $p < .01$ ) and 46 percentage points, (67 percent vs. 21 percent,  $p < .001$ ), respectively. Cohort 2 youth with visual impairments surpassed cohort 1 peers in the rate at which they participated in either organized groups or volunteer activities (76 percent vs. 35 percent,  $p < .001$ ).

Table 33. Comparisons between 1990 and 2005 of the community participation of out-of-high school youth, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impair-ment/autism	Multiple disabilities/deaf-blindness
In the past year, percentage of youth out of high school 1 to 4 years who:									
Belonged to a community group (e.g., sports team, hobby club, religious group)									
Cohort 1 (1990)	23.1 (3.64)	22.2 (5.65)	15.8 (3.90)	13.8 (3.88)	28.1 (3.29)	27.0 (4.72)	20.6 (5.15)	17.4 (6.02)	38.1 (10.02)
Cohort 2 (2005)	35.4 (6.92)	34.2 (7.41)	12.0 (5.80)	23.4 (5.90)	26.4 (8.04)	45.7 (11.22)	25.6 (6.80)	32.4 (6.10)	21.4 (11.58)
Percentage-point difference	+12.3	+12.0	-3.8	+9.6	-1.7	+18.7	+5.0	+15.0	-16.7
Participated in a volunteer or community service activity									
Cohort 1 (1990)	14.5 (3.02)	9.9 (4.04)	7.4 (2.78)	10.8 (3.45)	11.9 (2.39)	21.0 (4.36)	14.3 (4.48)	18.0 (6.10)	2.0 (2.86)
Cohort 2 (2005)	25.5 (6.27)	35.0 (7.50)	19.8 (7.12)	24.3 (5.94)	26.7 (8.05)	66.8 (10.68)	29.9 (7.13)	23.4 (5.55)	34.3 (13.40)
Percentage-point difference	+11.0	<b>+25.1**</b>	+12.4	+13.5	+14.8	<b>+45.8***</b>	+15.6	+5.4	+32.3
Participated in either of these									
Cohort 1 (1990)	28.7 (3.86)	27.2 (6.00)	21.8 (4.36)	19.0 (4.33)	30.4 (3.34)	35.1 (5.07)	27.4 (5.68)	23.7 (6.75)	37.6 (9.90)
Cohort 2 (2005)	46.8 (7.18)	50.9 (7.81)	26.5 (7.88)	35.2 (6.61)	42.5 (8.98)	75.7 (9.59)	42.5 (7.70)	41.6 (6.43)	45.2 (14.05)
Percentage-point difference	+18.1	+23.7	+4.7	+16.2	+12.1	<b>+40.6***</b>	+15.1	+17.9	+7.6
Percentage out of high school up to 4 years with a driver's license									
Cohort 1 (1990)	70.7 (3.25)	67.2 (5.21)	31.8 (4.15)	59.0 (4.67)	64.8 (2.82)	17.2 (3.15)	34.3 (4.92)	55.3 (6.22)	2.2 (2.17)
Cohort 2 (2005)	76.9 (4.65)	80.1 (4.64)	35.5 (5.90)	64.8 (5.40)	79.2 (5.65)	17.8 (6.75)	52.0 (5.79)	74.3 (4.55)	35.7 (8.55)
Percentage-point difference	+6.2	+12.9	+3.7	+5.8	+14.4	+0.6	+17.7	+19.0	<b>+33.5***</b>
Percentage of age-eligible youth out of high school up to 4 years who were registered to vote									
Cohort 1 (1990)	56.3 (3.60)	64.3 (5.40)	43.8 (4.52)	49.8 (4.89)	48.5 (3.05)	57.4 (4.21)	44.6 (5.20)	58.4 (6.28)	1.8 (1.96)
Cohort 2 (2005)	66.2 (5.31)	77.5 (4.93)	58.7 (6.22)	69.4 (5.47)	76.4 (6.12)	80.8 (7.08)	76.6 (5.00)	74.7 (4.60)	65.7 (8.69)
Percentage-point difference	+9.9	+13.2	+14.9	<b>+19.6**</b>	<b>+27.9***</b>	<b>+23.4**</b>	<b>+32.0***</b>	+16.3	<b>+63.9***</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings regarding group and volunteer participation are reported for youth with disabilities out of high school from 1 to 4 years so as not to include high school experiences; findings regarding having a driver's license and being registered to vote are reported for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,700 to 2,490 youth with disabilities across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,310 to 2,250 youth with disabilities across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

Rates of earning driving privileges did not differ significantly between 1990 and 2005 for 8 of the 9 disability categories. Only youth with multiple disabilities or deaf-blindness registered a significantly higher rate of having earned driving privileges in 2005 than in 1990 (36 percent vs. 2 percent,  $p < .001$ ).

In 2005, youth in the following categories had voter registration rates that were significantly higher than rates in 1990: emotional disturbance (69 percent vs. 50 percent,  $p < .01$ ), and hearing (76 percent vs. 49 percent,  $p < .001$ ), visual (81 percent vs. 57 percent,  $p < .01$ ), or orthopedic impairments (77 percent vs. 45 percent,  $p < .001$ ). The rate for youth with multiple disabilities or deaf-blindness in 2005 exceeded the rate in 1990 by 64 percentage points (66 percent vs. 2 percent,  $p < .001$ ), a difference that was significantly higher than the differences between cohorts for youth in all other disability categories ( $p < .01$  compared with youth with hearing or orthopedic impairments,  $p < .001$  for all other comparisons).

### ***Comparisons Across Time of Community Participation by School-Leaving Characteristics***

Group membership rates did not differ significantly between 1990 and 2005 by the school-leaving status or in the length of time youth with disabilities had been out of high school (table 34). In contrast, high school completers were significantly more likely in 2005 than in 1990 to have participated in volunteer or community service activities (29 percent vs. 14 percent,  $p < .01$ ) and either to have taken part in volunteer or community service activities or to have belonged to one or more organized community groups (48 percent vs. 31 percent,  $p < .01$ ). Only with regard to either belonging to a community group or participating in a volunteer/community service activity did cohorts 1 and 2 differ significantly on the basis of years out of high school. Cohort 2 youth with disabilities who had left high school from 2 to 4 years earlier had a 23 percentage-point higher rate of participation in one or both of these activities than cohort 1 (49 percent vs. 26 percent,  $p < .01$ ). No significant differences were noted in any form of community participation for youth with disabilities who had been out of high school up to 1 year or from 1 up to 2 years.

There were no significant differences between cohorts in their rates of having earned driving privileges for either high school completers or noncompleters (table 34). In both cohorts, completers were significantly more likely to have a driver's license or learner's permit than noncompleters ( $p < .001$  for both comparisons). There also were no significant differences between 1990 and 2005 in the rate at which youth with disabilities had a driver's license for youth who had been out of high school different lengths of time.

Only high school completers demonstrated a significant difference in voter registration rates between cohorts (table 34); 72 percent of high school completers in 2005 were reported to be registered to vote, a 15 percentage-point higher rate than the 57 percent of completers in 1990 ( $p < .01$ ). Rates for 1990 and 2005 were 43 percent and 38 percent, respectively, for noncompleters. No significant differences between cohorts in voter registration rates were apparent for youth with disabilities who differed in the number of years since leaving high school.

Table 34. Comparisons between 1990 and 2005 of the community participation of out-of-high school youth with disabilities, by school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
In the past year, percentage of youth out of high school 1 to 4 years who:					
Belonged to a community group (e.g., sports team, hobby club, religious group)					
Cohort 1 (1990)	24.0 (3.06)	14.8 (3.52)	†	21.3 (3.43)	20.3 (3.23)
Cohort 2 (2005)	34.4 (4.87)	11.8 (7.73)	†	25.6 (5.64)	35.4 (6.49)
Percentage-point difference	+10.4	-3.0		+4.3	+15.1
Participated in a volunteer or community service activity					
Cohort 1 (1990)	13.9 (2.48)	10.6 (3.02)	†	12.2 (2.73)	13.1 (2.70)
Cohort 2 (2005)	28.5 (4.63)	8.8 (6.67)	†	23.7 (5.50)	26.8 (5.97)
Percentage-point difference	<b>+14.6**</b>	-1.8		+11.5	+13.7
Participated in either of these					
Cohort 1 (1990)	30.5 (3.27)	18.9 (3.82)	†	26.8 (3.67)	25.9 (3.49)
Cohort 2 (2005)	47.6 (5.11)	19.2 (9.28)	†	36.8 (6.23)	48.5 (6.73)
Percentage-point difference	<b>+17.1**</b>	+0.3		+10.0	<b>+22.6**</b>
Percentage out of high school up to 4 years with a driver's license					
Cohort 1 (1990)	67.4 (2.71)	45.7 (4.39)	56.0 (4.17)	62.5 (4.04)	66.1 (3.77)
Cohort 2 (2005)	75.2 (3.48)	39.2 (8.96)	66.0 (5.75)	67.5 (6.05)	76.5 (5.60)
Percentage-point difference	+7.8	-6.5	+10.0	+5.0	+10.4
Percentage of age-eligible youth out of high school up to 4 years who were registered to vote					
Cohort 1 (1990)	57.4 (2.90)	42.8 (4.49)	45.4 (4.27)	58.7 (4.18)	58.1 (4.02)
Cohort 2 (2005)	71.9 (3.70)	38.4 (9.20)	60.0 (5.96)	72.8 (5.87)	69.9 (6.34)
Percentage-point difference	<b>+14.5**</b>	-4.4	+14.6	+14.1	+11.8

† Not applicable; only youth out of high school 1 to 4 years included in these analyses.

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings regarding group and volunteer participation are reported for youth out of high school from 1 to 4 years so as not to include high school experiences; findings regarding having a driver's license and being registered to vote are reported for youth out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,700 to 2,490 youth across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,310 to 2,250 youth across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### **Comparisons Across Time of Community Participation by Demographic Characteristics**

Similar to analyses reported thus far, there were no significant differences in group membership rates between 1990 and 2005 for youth with disabilities by race/ethnicity or gender (table 35). In contrast, there was a significant difference in the highest income group between the two cohorts in the likelihood of youth with disabilities belonging to a community group; 49 percent had been group members in 2005, a 32-percentage-point higher rate than the 17 percent in 1990 ( $p < .01$ ). No other significant differences by income level were found.

Rates of volunteerism did not differ significantly between 1990 and 2005 for any of the demographic groups of youth with disabilities. Rates of participating in volunteer activities in 1990 ranged from 10 percent of youth with disabilities in the lowest income group to 19 percent in the highest; in 2005 rates ranged from 21 percent of youth with disabilities in the middle income group to 47 percent in the highest. Considering youth's race/ethnicity, volunteerism rates ranged from 8 percent Hispanic youth with disabilities to 16 percent of White youth with disabilities in 1990; in 2005, rates ranged from 25 percent of White youth with disabilities to 31 percent of Hispanic youth with disabilities. Fifteen percent of males and 7 percent of females were reported to volunteer in 1990, compared with 27 percent and 21 percent, respectively, in 2005.

Youth with disabilities in the highest income group and those who were male both registered significantly higher rates of participating in either community groups or volunteer or community service activities in 2005 than in 1990. Differences between the cohorts were 36 percentage points for youth in the highest income group (65 percent vs. 29 percent,  $p < .01$ ) and 17 percentage points for male youth with disabilities (46 percent vs. 29 percent,  $p < .01$ ).

There were no significant differences between cohorts in rates of youth with disabilities having a driver's license by their household income or racial/ethnic background or for males and females. In both cohorts, youth with disabilities in the middle and highest income categories were significantly more likely to have a driver's license (70 percent and 80 percent in 1990, 80 percent and 88 percent in 2005) than youth with disabilities in the lowest income group (52 percent and 55 percent of the two cohorts, respectively;  $p < .001$  comparing lowest and highest income groups,  $p < .01$  comparing lowest and middle income groups).

Similarly, there were no significant differences between cohorts in the likelihood of youth with disabilities having a driver's license for youth from different racial/ethnic groups or by gender. However, the significant difference that existed between genders in 1990 (67 percent for males, 47 percent for females,  $p < .001$ ), no longer was apparent in 2005 (73 percent vs. 65 percent, n.s.).

Table 35. Comparisons between 1990 and 2005 of the participation in community activities of out-of-high school youth with disabilities, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
In the past year, percentage of youth out of high school 1 to 4 years who:								
Belonged to a community group (e.g., sports team, hobby club, religious group)								
Cohort 1 (1990)	14.9 (3.35)	30.5 (4.95)	17.2 (4.80)	21.5 (2.89)	19.5 (5.71)	18.1 (8.59)	22.3 (2.93)	17.4 (3.90)
Cohort 2 (2005)	23.2 (5.81)	28.5 (8.49)	49.4 (10.35)	33.5 (5.61)	25.5 (8.79)	30.2 (12.32)	34.5 (5.58)	23.3 (6.64)
Percentage-point difference	+8.3	-2.0	<b>+32.2**</b>	+12.0	+6.0	-12.1	+12.2	+5.9
Participated in a volunteer or community service activity								
Cohort 1 (1990)	10.3 (2.85)	15.8 (3.87)	18.9 (5.00)	15.9 (2.58)	3.6 (2.64)	7.6 (5.82)	15.3 (2.51)	6.8 (2.60)
Cohort 2 (2005)	23.9 (5.86)	21.4 (7.64)	46.5 (10.33)	24.8 (5.11)	25.7 (8.82)	30.8 (12.39)	27.3 (5.22)	21.3 (6.39)
Percentage-point difference	+13.6	+5.6	+27.6	+8.9	+22.1	+23.2	+12.0	+14.5
Participated in either of these								
Cohort 1 (1990)	19.2 (3.66)	36.4 (5.10)	29.1 (5.77)	28.5 (3.16)	19.2 (5.51)	23.2 (9.26)	28.6 (3.13)	21.0 (4.16)
Cohort 2 (2005)	36.8 (6.62)	41.2 (9.16)	64.8 (9.88)	44.0 (5.86)	38.0 (9.79)	52.1 (13.41)	46.0 (5.84)	37.0 (7.53)
Percentage-point difference	+17.6	+4.8	<b>+35.7**</b>	+15.5	+18.8	+28.9	<b>+17.4**</b>	+16.0
Percentage out of high school up to 4 years with a driver's license								
Cohort 1 (1990)	51.9 (3.92)	69.8 (4.11)	80.2 (4.27)	73.2 (2.61)	34.6 (5.69)	43.6 (9.56)	67.1 (2.75)	47.3 (4.24)
Cohort 2 (2005)	55.8 (5.55)	80.4 (5.80)	87.5 (5.19)	79.6 (3.71)	49.2 (7.57)	56.6 (11.43)	72.6 (4.18)	64.8 (5.63)
Percentage-point difference	+3.9	+10.6	+7.3	+6.4	+14.6	+13.0	+5.5	+17.5
Percentage of age-eligible youth out of high school up to 4 years who were registered to vote								
Cohort 1 (1990)	54.4 (3.96)	54.5 (4.58)	60.6 (5.39)	52.0 (3.01)	63.7 (5.89)	51.7 (9.69)	56.9 (2.97)	44.9 (4.27)
Cohort 2 (2005)	65.8 (5.46)	60.3 (7.20)	80.9 (6.27)	67.4 (4.40)	74.3 (6.84)	61.8 (11.45)	67.0 (4.51)	66.9 (5.66)
Percentage-point difference	+11.4	+5.8	+20.3	<b>+15.4**</b>	+10.6	+10.1	+10.1	<b>+22.0**</b>

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings regarding group and volunteer participation are reported for youth out of high school from 1 to 4 years so as not to include high school experiences; findings regarding having a driver's license and being registered to vote are reported for youth out of high school up to 4 years. NLTS percentages are weighted population estimates based on samples that range from approximately 1,700 to 2,490 youth across variables. NLTS2 percentages are weighted population estimates based on samples that range from approximately 1,310 to 2,250 youth across variables.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

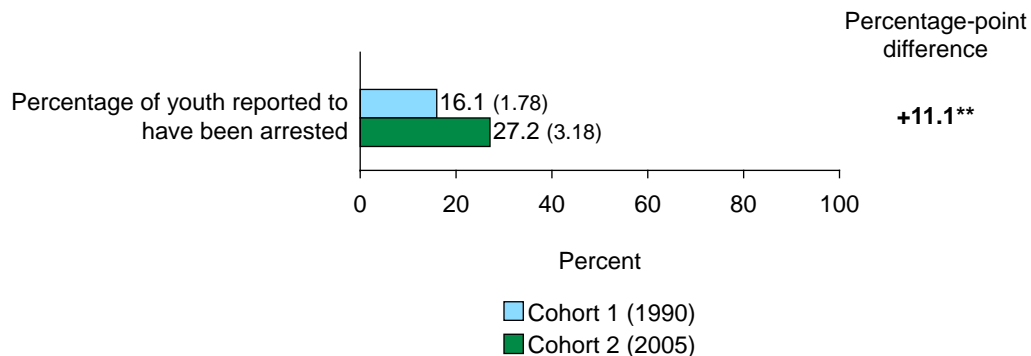


None of the three household income groups demonstrated significant differences between 1990 and 2005 in their voter registration rates (table 35). When examining race/ethnicity, only among White youth with disabilities was there a significant difference between 1990 and 2005 in their voter registration rates; 67 percent were reported to be registered in 2005, a rate 15 percentage points higher than the 52 percent who were reported to be registered in 1990 ( $p < .01$ ). Among youth with disabilities in 2005, both males and females had voter registration rates of 67 percent; this constituted a significantly higher rate than in 1990 for females (vs. 45 percent,  $p < .01$ ), a difference not observed for males.

### Criminal Justice System Involvement

Data regarding this negative form of community participation indicate that youth with disabilities in 2005 were more likely to report having been arrested than those in 1990. A total of 16 percent of youth with disabilities who had been out of high school up to 4 years in 1990 were reported to have been arrested at some time in the past (figure 20). The rate in 2005 was 11 percentage points higher (27 percent,  $p < .01$ ).

Figure 20. Comparisons between 1990 and 2005 of ever having been arrested among youth with disabilities out of high school up to 4 years



\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,340 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### Comparisons Across Time of Criminal Justice System Involvement by Disability Category

Across disability categories, the significantly higher arrest rate for youth with disabilities in 2005 compared with 1990 only was seen among youth with emotional disturbances (table 36). Cohort 2 youth in this category demonstrated a 25 percentage-point higher rate than their cohort 1 peers (61 percent vs. 36 percent,  $p < .001$ ). Differences between cohorts for all other disability categories ranged from 2 percentage points for youth with hearing impairments to 12 percentage points for youth in the category of other health impairment and autism. In both cohorts, youth with emotional disturbances had significantly higher rates of arrest than youth in all other disability categories ( $p < .001$  for all comparisons).

Table 36. Comparisons between 1990 and 2005 of the arrest rates of youth out of high school up to 4 years, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment	Multiple disabilities/deaf-blindness
Percentage ever arrested									
Cohort 1 (1990)	15.5 (2.59)	11.6 (3.57)	9.5 (2.62)	36.0 (4.54)	8.7 (1.67)	3.3 (1.50)	2.9 (1.74)	13.0 (4.22)	6.3 (3.63)
Cohort 2 (2005)	24.1 (4.61)	19.7 (4.60)	17.0 (4.56)	60.7 (5.24)	11.0 (4.34)	6.9 (4.42)	6.2 (2.77)	25.2 (4.35)	9.8 (5.14)
Percentage-point difference	+8.6	+8.1	+7.5	<b>+24.7***</b>	+2.3	+3.6	+3.3	+12.2	+3.5

\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,340 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparison Across Time of Criminal Justice System Involvement by High School-Leaving Characteristics***

Regarding school leaving characteristics, only among high school completers did the arrest rates between cohorts differ significantly (table 37). Among school completers in 2005, 23 percent had reportedly been arrested, compared with 10 percent in 1990 ( $p < .001$ ). Despite not demonstrating a significantly higher rate in 2005 than in 1990, high school noncompleters had a significantly higher arrest rate at both points in time (32 percent and 50 percent) than completers ( $p < .001$  for 1990,  $p < .01$  for 2005). Differences between cohorts were not apparent for youth with disabilities who were differentiated by the length of time they had been out of high school.

Table 37. Comparisons between 1990 and 2005 of the arrest rate of youth with disabilities out of high school up to 4 years, by school-leaving status and years since leaving high school

	Leaving status		Years since leaving high school		
	Completers	Non-completers	Less than 1 year	1 up to 2 years	2 up to 4 years
Percentage ever arrested					
Cohort 1 (1990)	9.6 (1.71)	31.7 (4.09)	14.2 (2.94)	17.5 (3.16)	17.5 (3.04)
Cohort 2 (2005)	22.7 (3.29)	50.4 (8.59)	21.0 (4.82)	27.1 (5.67)	33.8 (5.88)
Percentage-point difference	<b>+13.1***</b>	<b>+18.7</b>	6.8	9.6	+16.3

\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. Findings are for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,340 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

### ***Comparison Across Time of Criminal Justice System Involvement by Demographic Characteristics***

Significant differences between cohorts were not noted for youth with disabilities by their household income levels or their racial/ethnic backgrounds (table 38). However, gender differences were apparent, with males exhibiting a significantly higher arrest rate in 2005 than in 1990 (32 percent vs. 20 percent,  $p < .01$ ). At both points in time, these arrest rates for males were significantly higher than rates for females, among whom 9 percent and 17 percent had been arrested in 1990 ( $p < .001$ ) and 2005 ( $p < .01$ ), respectively.

Table 38. Comparisons between 1990 and 2005 of the arrest rate of youth with disabilities out of high school up to 4 years, by household income, race/ethnicity, and gender

	Household income			Race/ethnicity			Gender	
	Low	Middle	High	White	African American	Hispanic	Male	Female
Percentage ever arrested								
Cohort 1 (1990)	15.9 (2.86)	15.8 (3.29)	17.1 (4.07)	16.0 (2.16)	16.5 (4.44)	26.8 (8.59)	19.5 (2.32)	8.5 (2.39)
Cohort 2 (2005)	24.3 (4.68)	32.3 (6.55)	21.8 (6.25)	25.4 (3.88)	34.9 (6.84)	19.9 (9.08)	32.3 (4.20)	16.6 (4.34)
Percentage-point change	+8.4	+16.5	+4.7	+9.4	+18.4	-6.9	<b>+12.8**</b>	+8.1

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. Findings are for youth with disabilities out of high school up to 4 years. NLTS percentages are weighted population estimates based on a sample of approximately 2,470 youth with disabilities. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,340 youth with disabilities.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent interview and youth interview/survey, 2005.

## Summary

This chapter has presented findings related to comparisons of the community participation and criminal justice system involvement of youth with disabilities who had been out of high school up to 4 years in 1990 and in 2005. The participation of youth with disabilities in organized, extracurricular community groups did not differ between the two cohorts; 21 percent were reported to be group members in 1990, and 31 percent were group members in 2005. Neither were there significant differences between cohorts for youth who differed in their primary disability category or school-leaving or demographic characteristics.

In contrast, reported rates of youth with disabilities participating in volunteer or community service activities were higher in 2005 than in 1990 by 13 percentage points (25 percent vs. 13 percent). Reflecting this difference, the rates of youth with disabilities participating in either or both of these ways also was higher in 2005, by 17 percentage points (43 percent vs. 26 percent). Rates of volunteerism were significantly higher in 2005 than in 1990 for youth with speech/language or visual impairments (25 and 46 percentage points) and high school completers (15 percentage points). The likelihood of youth with disabilities either belonging to an extracurricular community group or volunteering was higher in 2005 than 1990 for youth with visual impairments (41 percentage points), high school completers (17 percentage points), youth with disabilities in the highest income group (36 percentage points), and males (17 percentage points).

The rates at which youth with disabilities were reported to have a driver's license were not different between the two cohorts overall (61 percent and 70 percent for 1990 and 2005, respectively), but a significantly higher rate was reported for youth with multiple disabilities or deaf-blindness (34 percentage points). Youth with disabilities as a group did register a higher reported rate of voter registration in 2005 than in 1990 (67 percent vs. 53 percent). Significantly higher voter registration rates in 2005 also were reported for youth with hearing, visual, or orthopedic impairments (28, 23, and 32 percentage points, respectively); emotional disturbances (20 percentage points); or multiple disabilities or deaf-blindness (64 percentage points). High school completers also demonstrated a higher voter registration rate in 2005 than in 1990 (15 percentage points), as did White and female youth with disabilities (15 and 22 percentage points, respectively).

The one negative form of community participation that can be compared between NLTS and NLTS2 is the rate at which youth with disabilities out of high school up to 4 years were reported to have been arrested at some time in their lives. This rate was 11 percentage points higher in 2005 than in 1990 (27 percent vs. 16 percent). The only disability category to mirror this higher 2005 rate was youth with emotional disturbances, who showed a 25-percentage-point higher rate in 2005 than in 1990. Higher arrest rates in 2005 also were reported for high school completers and males with disabilities (13 percentage points for both groups).

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## **Appendix A**

### **NLTS and NLTS2 Sampling, Data Collection, and Analysis Procedures**



## Appendix A. NLTS and NLTS2 Sampling, Data Collection, and Analysis Procedures

This appendix describes several aspects of the NLTS and NLTS2 methodology relevant to the data reported here, including

- sampling local education agencies (LEAs) and students;
- data sources and response rates;
- weighting the data;
- estimation and use of standard errors;
- unweighted and weighted sample sizes;
- analytical adjustments to increase comparability of study samples,
- calculating statistical significance; and
- measurement and reporting issues.

### NLTS and NLTS2 Sample Overview

The NLTS and NLTS2 samples were constructed in two stages. A stratified random sample of LEAs (630 in NLTS and 3,643 in NLTS2) were selected from the universe of approximately 14,000 LEAs in NLTS and 12,000 LEAs in NLTS2 that serve students receiving special education in at least one grade from 7th through 12th grades. These LEAs and state-supported special schools (80 in NLTS and 77 in NLTS2) that served primarily students with hearing and vision impairments and multiple disabilities were invited to participate in the study, with the intention of recruiting approximately 300 LEAs in NLTS and 497 LEAs in NLTS2, and as many special schools as possible from which to select the target samples of about 10,000 students in NLTS and 12,000 students in NLTS2. The target LEA sample was reached in both studies; 303 LEAs in NLTS and 501 LEAs in NLTS2, and 22 special schools in NLTS and 38 special schools in NLTS2 agreed to participate and provided rosters of students receiving special education in the designated age range, from which the student sample was selected.

The roster of all students in the studies' age ranges who were receiving special education from each LEA<sup>69</sup> and special school was stratified by disability category. Students then were selected randomly from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study years, findings would generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to the parent/youth interview. A total 10,370 were selected and eligible to participate in NLTS and 11,276 students were selected and eligible to participate in NLTS2.

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<sup>69</sup> LEAs were instructed to include on the roster any student for whom they were administratively responsible, even if the student was not educated within the LEA (e.g., attended school sponsored by an education cooperative or was sent by the LEA to a private school). Despite these instructions, some LEAs may have underreported students served outside the LEA.

Details of the LEA and student samples are provided below.

## **The LEA Samples**

### ***Defining the Universe of LEAs***

The NLTS and NLTS2 samples included only LEAs that had teachers, students, administrators, and operating schools—that is, “operating LEAs.” They excluded such units as supervisory unions; Bureau of Indian Affairs schools; public and private agencies (e.g., correctional facilities); LEAs from U.S. territories; and LEAs with 10 or fewer students in the NLTS and NLTS2 age ranges, which would be unlikely to have students with disabilities.

The public school universe data file maintained by Quality Education Data (Quality Education Data 1999) was used to construct the NLTS2 sampling frame because it had more recent information than the alternative list maintained by the National Center for Education Statistics. For NLTS, a combination of QED and NCES data was used for the 1983 and 1984 school years, respectively. Correcting for errors and duplications resulted in a master list of 13,180 (NLTS) and 12,435 (NLTS2) LEAs that met the selection criteria. These comprised the NLTS and NLTS2 LEA sampling frames.

### ***Stratification***

The NLTS and NLTS2 LEA samples were stratified to increase the precision of estimates, to ensure that low-frequency types of LEAs (e.g., large urban districts) were adequately represented in the samples, to improve comparisons with the findings of other research, and to make NLTS and NLTS2 responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, LEAs of different sizes). Three stratifying variables were used in both studies: region, size (student enrollment), and community wealth. The three variables generate a 64-cell grid into which the universe of LEAs was arrayed.

**Region.** This variable captures essential political differences, as well as subtle differences in the organization of schools, the economic conditions under which they operate, and the character of public concerns. The regional classification variable selected has been used by the Department of Commerce, the Bureau of Economic Analysis, and the National Assessment of Educational Progress (categories are Northeast, Southeast, Midwest, and West).

**Size (student enrollment).** LEAs vary considerably in size, the most useful available measure of which is student enrollment. A host of organizational and contextual variables are associated with size that exert considerable potential influence over the operations and effects of special education and related programs. In addition, total enrollment serves as an initial proxy for the number of students receiving special education served by an LEA. The QED database provides enrollment data from which LEAs were sorted into five categories in NLTS and four categories in NLTS2 serving approximately equal numbers of students:

### ***NLTS***

- huge (enrollment of 50,000 or more);
- very large (enrollment of 25,000 to 49,999);

- large (enrollment of 10,000 to 24,999);
- medium (enrollment of 2,500 to 9,999);
- small (enrollment of 500 to 2,499); and
- very small (enrollment less than 500).

### ***NLTS2***

- very large (estimated<sup>70</sup> enrollment greater than 14,931 in grades 7 through 12);
- large (estimated enrollment from 4,661 to 14,930 in grades 7 through 12);
- medium (estimated enrollment from 1,622 to 4,660 in grades 7 through 12); and
- small (estimated enrollment from 11 to 1,621 in grades 7 through 12).

**Community wealth.** As a measure of district wealth, the Orshansky index (the proportion of the student population living below the federal definition of poverty, Employment Policies Institute 2002) is a well-accepted measure. The distribution of Orshansky index scores was organized into four categories of LEA/community wealth, each containing approximately 25 percent of the student population in grades 7 through 12:

### ***NLTS***

- high (0 percent to 4 percent disadvantaged youth);
- medium (5 percent to 9 percent disadvantaged youth);
- low (10 percent to 19 percent disadvantaged youth);
- very low (20 percent or more disadvantaged youth).

### ***NLTS2***

- high (0 percent to 13 percent disadvantaged youth);
- medium (14 percent to 24 percent disadvantaged youth);
- low (25 percent to 43 percent disadvantaged youth);
- very low (43 percent or more disadvantaged youth).

The three variables generated 96- and 64-cell grids for the two studies, into which the universes of LEAs were arrayed.

### ***LEA Sample Size***

On the basis of an analysis of LEAs' estimated enrollment across LEA size and estimated sampling fractions for each disability category, 400 LEAs in NLTS and 497 LEAs in NLTS2 (and as many state-sponsored special schools as would participate) were considered sufficient to

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<sup>70</sup> Enrollment in grades 7 through 12 was estimated by dividing the total enrollment in all grade levels served by an LEA by the number of grade levels to estimate an enrollment per grade level. This was multiplied by 6 to estimate the enrollment in grades 7 through 12.

generate the student sample. Taking into account the rate at which LEAs were expected to refuse to participate (which experience in the intervening years suggested would be dramatically higher in 2000 than in 1985), samples of 628 LEAs in NLTS2 and 3,635 LEAs in NLTS2 were invited to participate, from which 300 and 497 participating LEAs (respectively) might be recruited. A total of 303 and 501 LEAs actually provided students for the sample, 101 percent of the target number needed in both studies and 48 percent and 14 percent of those invited. Analyses of the region, size, and wealth of the LEA sample, both weighted and unweighted, confirmed that the weighted LEA samples closely resembled the LEA universe with respect to those variables.

In addition to matching the LEA samples to the universe of LEAs on variables used in sampling, it was important to ascertain whether the stratified random sampling approach resulted in skewed distributions on relevant variables not included in the stratification scheme. Several analyses were conducted.

NLTS analyses involved comparing the 303 participating LEAs with a sample of 1,600 LEAs randomly selected from the universe of LEAs (approximately 11 percent of the secondary LEA population) and contacted in a brief survey. The survey revealed that 47 LEAs classified by NCES as offering secondary school instruction no longer did so. In addition, 4 LEAs had merged with other districts and were no longer district entities. Subtracting these 51 LEAs from the sample of 1,600 left a sample of 1,549 districts. Of these, 1,450 responded and 99 either refused to participate or were not reached, yielding a response rate for secondary-level LEAs of 94 percent. The only significant difference found between the NLTS sample and the larger survey sample was that NLTS underrepresented students in LEAs that served grades kindergarten through eighth grade. No variables, beyond those used to stratify the sample, were used in constructing weights at the LEA level.

NLTS2 analyses involved several stages. First, three variables from the QED database were chosen to compare the “fit” between the first-stage sample and the population: the LEA’s racial/ethnic distribution of students, the proportion who attended college, and the urban/rural status of the LEA. This analysis revealed that the sample of LEAs somewhat underrepresented African American students and college-bound students and overrepresented Hispanic students and LEAs in rural areas. Thus, in addition to accounting for stratification variables, LEA weights were calculated to achieve a distribution on the urbanicity and racial/ethnic distributions of students that matched the universe.

To determine whether the resulting weights, when applied to the participating NLTS2 LEAs, accurately represented the universe of LEAs serving the specified grade levels, data collected from the universe of LEAs by the U.S. Department of Education’s Office of Civil Rights (OCR) and additional items from QED were compared for the weighted NLTS2 LEA sample and the universe. Finally, the NLTS2 participating LEAs and a sample of 1,000 LEAs that represented the universe of LEAs were surveyed to assess a variety of policies and practices known to vary among LEAs and to be relevant to secondary-school-age youth with disabilities. Analyses of both the extant databases and the LEA survey data confirm that the weighted NLTS2 LEA sample accurately represents the universe of LEAs.



## The Student Samples

Determining the size of the NLTS and NLTS2 student sample took into account the duration of the study (5 and 10 years respectively), desired levels of precision, and assumptions regarding attrition and response rates.

The studies' sample designs called for findings to be generalizable to students receiving special education as a whole and for each of the special education disability categories in use at the time. Standard errors were to be no more than 3.2 percent in NLTS and 3.6 percent in NLTS2, except for the low-incidence categories. Assuming a 50 percent sampling efficiency (which is likely to be exceeded for most disability categories), analyses for the two studies determined that approximately 10,500 and 12,000 students would need to be sampled to ensure sufficient youth would have a parent/youth interview in the final wave of each study.

LEAs and special schools were contacted to obtain their agreement to participate in the study and request rosters of students receiving special education. NLTS sampled students ages 13 to 21, and NLTS2 sampled students ages 13 to 16 years old. In both studies, students had to have been in at least seventh grade.<sup>71</sup> Requests for rosters for both studies specified that they contain the names of students receiving special education under the jurisdiction of the LEA, the disability category of each student, and the students' birthdates or ages. NLTS also requested the name of students' schools. NLTS2 requested that student addresses and telephone numbers be included on rosters; this information was obtained in a second contact with LEAs for NLTS. Some LEAs in both studies would provide only identification numbers for students, along with the corresponding birthdates and disability categories. When students were sampled in these LEAs, identification numbers of selected students were provided to the LEA, along with materials to mail to their parents/guardians (without revealing their identity).

After estimating the number of students receiving special education in the NLTS and NLTS2 age ranges, the appropriate fraction of students in each category was selected randomly from each LEA and special school. In cases in which more than one child in a family was included on a roster, only one was eligible to be selected. LEAs and special schools were notified of the students selected, and contact information for their parents/guardians was requested if it had not been provided initially.

## Data Sources

Data are reported here for the subset of NLTS sample members (approximately 2,580) and NLTS2 sample members (approximately 2,620) who were out of high school and had participated in the NLTS Wave 2 parent/youth telephone interview and mail survey, conducted in 1990 or the NLTS3 Wave 3 parent/youth telephone interview and mail survey, conducted in 2005. In addition, constructed variables that describe youth's experiences since leaving high school incorporated data from the NLTS Wave 1 parent interview (conducted in 1987) and the NLTS2 Wave 2 parent/youth telephone interview and mail survey (conducted in 2003) for youth who were out of high school in 1987 or 2003. School district rosters in both studies and the NLTS2 Wave 1 parent interview or mail survey also provided a small amount of data used in this report. NLTS and NLTS2 data sources are described below.

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<sup>71</sup> Students who were designated as being in ungraded programs also were sampled if they met the age criteria.

## **NLTS Data Sources**

The NLTS instruments that provided information for this report included the following sources.

**Wave 1 parent/guardian interview.** The initial wave of NLTS data collection involved parent telephone interviews. Data for two demographic items (youth's gender and race/ethnicity) were drawn from these Wave 1 interviews for the subset of out-of-high school youth with disabilities, which are included in the basis of this report. In addition, approximately 310 youth were already out of high school in Wave 1. Four variables<sup>72</sup> that were created for this report indicate whether a youth had had a particular experience "since high school." Eighty-eight percent of out-of-high school respondents (approximately 2,270 youth) had left high school since the Wave 1 data collection; thus, Wave 2 data were all that were required to generate values for these variables for them. However, for those already out of high school in Wave 1, data from both Waves 1 and 2 were needed to generate values for variables measuring experiences "since high school." The Wave 1 parent telephone interview produced data for approximately 310 youth included in the sample that forms the basis of this report.

In the summer and fall of 1987 parents of youth with disabilities were interviewed by telephone using computer-assisted telephone interviewing (CATI). Ninety-five percent of the interviews were conducted in English and the remaining 5 percent were completed in Spanish. Parents rather than youth were selected as respondents for the first wave of data collection because of the need for family background information and because, with most youth still in secondary school and living at home, parents were believed to be accurate respondents for the issues addressed.

Prior to the telephone interviewing, letters were sent to parents/guardians of sample members to inform them they would be contacted for interviews. A postcard was included with each contact letter, for parents to use if there was a change to their current address or telephone number. Undeliverable letters were returned by the post office, with a forwarding address when available. Several efforts were undertaken to identify current contact information for youth no longer at the address or telephone number, including, using directory assistance, sending LEAs and schools the names of youth for whom addresses or telephone numbers were missing or inaccurate, sending parents postcards with a toll-free number to call for an interview, and providing parents with a one-page mail questionnaire that contained items related to key outcome variables and a space to indicate their current address and phone number.

**Wave 2 youth telephone interview.** All Wave 2 data collection began with an effort to contact parents of sample members by telephone. The field period of the Wave 2 interviews extended from November 1990 through February 1991. NLTS sample members eligible for a Wave 2 youth telephone interview included those (1) for whom working telephone numbers or addresses were available so that their parents could be reached by phone (a total of approximately 8,660 youth), (2) who were not in the disability categories of deafness, multiply handicapped, deaf/blind, autism, or moderately, severely, or profoundly mentally retarded, and (3) who were not institutionalized (these latter two categories of youth were not expected to be able to respond to a telephone interview independently). For youth who met the eligibility

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<sup>72</sup> The four variables that focused on youth's experiences "since high school" included postsecondary school enrollment status, postsecondary school completion status, parenting status, and arrests.

criteria, an initial telephone contact was made with parents of sample members, who completed items intended only for parent respondents. Then parents were asked whether the young adult son/daughter with disabilities was able to respond to questions about his/her experiences by telephone for him/herself, as noted above.<sup>73</sup> If parents responded affirmatively, interviewers asked to speak with the youth or asked for contact information to reach the youth in order to complete the youth portion of the interview. Telephone interviews were completed with approximately 2,150 out-of-high school youth.

**Wave 2 youth mail survey.** Two categories of youth were mailed questionnaires with a subset of items from the telephone interview: (1) youth whose parent indicated they would be able to respond to questions about their experiences themselves by telephone, but who could not be reached by phone, and (2) youth with hearing impairments. Overall, approximately 980 of the total of 2,580 youth whose parents were contacted were mailed questionnaires. Questionnaires were returned by approximately 350 youth (a 36 percent response rate), 30 of whom were out-of-high school youth; these are included in the sample that generated the findings reported in this document.

**Wave 2 parent/guardian interview.** In addition to sample members who completed a telephone interview or mail survey, parents completed a telephone interview for approximately 3,304 sample members who did not respond for themselves, either because they were considered unable to do so or because youth who were reported able to respond could not be reached or refused to respond. In the latter case, parents were contacted to complete a subset of interview items. A total of approximately 270 youth for whom parents were the sole respondents were out of secondary school and are included in the sample that forms the basis of this report.

**Wave 2 parent/guardian mail survey.** A questionnaire was mailed to parents for whom there were no valid telephone numbers on file or who, upon refusing to complete the telephone interview, stated they would complete a mail survey. The mail questionnaire included items related to key outcome variables, such as school enrollment status and residential information. Questionnaires were mailed to approximately 2,960 parents and were returned by approximately 540 parents, an 18 percent response rate. Approximately 130 mail questionnaire respondents were parents of out-of-high school youth; their responses of parents are included as part of the sample that generated the findings reported in this document.

**School and school district student rosters.** NLTS information about the primary disability category of sample members came from rosters of students in the NLTS age range receiving special education services in the 1985–86 school year under the auspices of participating school districts and state-supported special schools.

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<sup>73</sup> At the end of parent part 1 of the NLTS phone interview, parents were asked, “My next questions are about jobs (YOUTH NAME) may have had, schools (he/she) may have gone to, and about (his/her) feelings about (him/herself) and (his/her) life. The questions are similar to those I’ve been asking you, where (he/she) will be asked to answer using scales, like “very well,” “pretty well,” “not very well,” or “not at all well.” The interview would probably last about 20 to 30 minutes. Do you think that (YOUTH’S NAME) would be able to accurately answer these kinds of questions over the telephone?”

## **NLTS2 Data Sources**

The NLTS2 instruments<sup>74</sup> that provided information for this report include the following:

**Wave 1 parent interview/survey.** The NLTS2 conceptual framework suggests that a youth's nonschool experiences, such as extracurricular activities and friendships; historical information, such as age when disability was first identified; household characteristics, such as socioeconomic status; and a family's level and type of involvement in school-related areas are crucial to student outcomes. Parents/guardians are the most knowledgeable about these aspects of students' lives. They also are important sources of information on outcomes across domains. Thus, parents/guardians of NLTS2 sample members were interviewed by telephone or surveyed by mail in 2001, as part of Wave 1 data collection.

Matches of names, addresses, and telephone numbers of NLTS2 parents with existing national locator databases were conducted to maximize the completeness and accuracy of contact information and subsequent response rates. A student was required to have a working telephone number and an accurate address to be eligible for the parent interview sample.

Letters were sent to parents to notify them that their child had been selected for NLTS2 and that an interviewer would be attempting to contact them by telephone. The letter included a toll-free telephone number for parents to call to be interviewed if they did not have a telephone number where they could be reached reliably or if they wanted to make an appointment for the interview at a specific time.

Computer-assisted telephone interviewing (CATI) was used for parent interviews, which were conducted between mid-May and late September 2001. Ninety-five percent of interviews were conducted in English and 5 percent in Spanish.

All parents who could not be reached by telephone were mailed a self-administered questionnaire in a survey period that extended from September through December 2001. The questionnaire contained a subset of key items from the telephone interview. Overall, 91 percent of respondents reported that they were parents of sample members (biological, adoptive, or step), and 1 percent were foster parents. Six percent were relatives other than parents, 2 percent were nonrelative legal guardians, and less than 1 percent reported other relationships to sample members.

**Wave 2 parent/youth interviews.** NLTS2 sample members for whom working telephone numbers and addresses were available were eligible for the Wave 2 parent/youth telephone interview or youth mail survey in 2003. Database matching procedures were used to maximize the eligible sample, as in Wave 1. Contact procedures alerting parents of the interviews also were similar for the two waves. The major distinction between the data collection methods in Waves 1 and 2 is that interviews in Wave 2 were sought both with parents of NLTS2 sample members and with the youth themselves if they were able to respond to questions.

The first interview contact was made with parents of eligible sample members. Those who agreed to participate were interviewed with CATI. Items in this portion of the interview, referred to as Parent Part 1, focused on topics for which the parent was considered the most appropriate respondent (e.g., services received, family expectations, and support). At the end of Parent Part 1, the respondent was asked the following:

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<sup>74</sup> All NLTS2 instruments are available on the NLTS2 website, [www.nlts2.org](http://www.nlts2.org).

*My next questions are about jobs (YOUTH'S NAME) may have had, schools (he/she) may have gone to, and about (his/her) feelings about (him/herself) and (his/her) life. The questions are similar to those I've been asking you, where (he/she) will be asked to answer using scales, like "very well," "pretty well," "not very well," or "not at all well." The interview would probably last about 20 to 30 minutes. Do you think that (YOUTH'S NAME) would be able to accurately answer these kinds of questions over the telephone?*

If youth could answer questions by phone, they also were told:

*I also have some questions about (his/her) involvement in risk behaviors, like smoking, drinking, and sexual activity. Is it all right for me to ask (YOUTH'S NAME) questions like that?*

If parents consented, interviewers asked to speak with the youth or asked for contact information to reach the youth in order to complete the youth portion of the interview, referred to as Youth Part 2.

Parents who reported that youth could not answer questions by telephone were asked:

*Would (he/she) be able to accurately answer these kinds of questions using a written questionnaire?*

If parents indicated that youth could complete a written questionnaire, they were asked for the best address to which to send a questionnaire, and a questionnaire was sent. The questionnaire contained a subset of items from the telephone interview that were considered most important for understanding the experiences and perspectives of youth. Multiple follow-up phone or mail contacts were made to maximize the response rate for the mail survey. Data from the mail survey and Youth Part 2 of the telephone interview were merged for analysis purposes.

If parents reported that youth could not answer questions either by telephone or written questionnaire or declined to have youth asked questions related to risk behaviors, interviewers asked them to continue the interview, referred to as Parent Part 2. If youth were reported to be able to complete a telephone interview or a written questionnaire but did not do so after repeated attempts, parents were contacted again and asked to complete Parent Part 2 in lieu of Youth Part 2.

**Wave 3 parent/youth interviews.** As in early waves of data collection, NLTS2 sample members for whom working telephone numbers and addresses were available were eligible for the Wave 3 parent/youth telephone interview or youth mail survey (2005). Database matching procedures were used to maximize the eligible sample, as previously. Contact procedures alerting respondents of the interviews also were similar across waves. Wave 3 data collection was similar to Wave 2 in that both parents and youth were sought as respondents, and youth respondents who were reported to be able to respond for themselves but not by telephone were surveyed by mail. The major distinction between the data collection methods in Waves 2 and 3 is that for youth for whom Wave 2 data had been collected, interviews were sought with parents and with youth themselves simultaneously, rather than interviewing parents first, relying on parents' reports in Wave 2 regarding youth's ability to respond for themselves by telephone or mail. For sample members who were eligible for Wave 3 data collection but who could not be reached for data collection in Wave 2, a telephone interview was sought first with parents, and

the screening process for the youth interview survey that was described for Wave 2 was repeated when a parent was reached.

### **Response Rates**

Table A-1 reports the sample members for whom there are data from the NLTS Waves 1 and 2 and from the NLTS2 Waves 1 through 3.

Table A-1. Response rates for NLTS Waves 1 and 2, and NLTS2 Waves 1 through 3 parent/youth data collection

Respondents	NLTS		NLTS2	
	Number	Percent	Number	Percent
<b>Wave 1</b>				
Total eligible sample	10,369	100.0	11,276	100.0
Respondents				
Completed telephone interview	6,438	62.1	8,672	76.9
Completed partial telephone interview	220	2.1	300	2.7
Completed mail questionnaire	194	1.9	258	2.3
Total respondents	6,842	66.1	9,230	81.9
Total nonrespondents	3,517	33.9	2,046	18.1
<b>Wave 2</b>				
Total eligible sample	8,660	100.0	8,210	100.0
Respondents				
Completed Parent Part 1 telephone interview	5,890	68.0	6,859	83.5
Completed Parent Part 2 telephone interview	3,304	38.2	2,962	36.1
Completed Youth Part 2 telephone interview or mail questionnaire	2,586	29.9	3,360	41.9
Mail survey (NLTS only)	455	5.3		
Total respondents with Part 1 and either Parent or Youth Part 2 (or mail survey in NLTS)	6,345	73.3	6,322	77.0
Total nonrespondents (no parent or youth data)	2,315	26.7	1,352	16.5
<b>Wave 3</b>				
Total eligible sample			7,988	100.0
Respondents				
Completed Parent Part 1 telephone interview			5,188	65.0
Completed Parent Part 2 telephone interview			1,576	19.7
Completed Youth Part 2 telephone interview or mail questionnaire			3,287	41.1
Total respondents with Part 1 and either Parent or Youth Part 2			4,664	58.4
Total respondents with Parent Part 1 or Parent Part 2, or Youth Part 2			5,368	67.2
Total nonrespondents (no parent or youth data)			2,620	32.8

## Combining Parent and Youth Data

In both NLTS and NLTS2, if a youth interview/survey was completed, youth's responses to these items were used. If a youth interview/survey could not be completed for an eligible youth or if a youth was reported by parents not to be able to participate in an interview/ survey, parents' responses were used. For the subsample of out-of-high school youth included in this report, the youth interview/survey was the source of data for post-high school outcomes for 84 percent of youth in both studies, and the parent interview was the source for 16 percent of youth in both studies.

Combining data across respondents raises the question of whether parent and youth responses would concur—i.e., would the same findings result if parents' responses were reported instead of youth's responses. Table A-2 shows the level of congruence in NLTS and NLTS2 parents' and youth's responses to items related to key outcomes of interest.

**NLTS parent/youth comparison.** When both NLTS parents and youth were asked whether the youth lived independently, had a paid job, earned less than minimum wage, minimum wage to \$5.00 per hour, or more than \$5.00 per hour, attended a postsecondary vocational school, a 2-year college, or a 4-year college in the past year, or belonged to groups, their responses agreed from 70 percent to 96 percent of the time. The greatest congruence (96 percent) is noted regarding youth's attendance at a 4-year college in the preceding year. There was 91 percent congruence evident regarding living independently, and attending a 2-year college or postsecondary vocational school, an 88 percent congruence regarding employment and an 84 percent agreement regarding wages. Congruence on whether youth belonged to an organized group in the community on wages earned by youth at the current job had the lowest level of congruence (70 percent).

**NLTS2 parent/youth comparison.** When both NLTS2 parents and youth were asked whether the youth belonged to an organized community group, currently worked for pay, and worked for pay in the past 2 years, and whether currently employed youth earned less than \$5.15 per hour, \$5.15 to \$6.00 per hour, \$6.01 to \$7.00 per hour, or more than \$7.00 per hour, their responses agreed from 69 percent to 80 percent of the time. The greatest congruence (80 percent) is noted regarding youth's current employment status. There was 78 percent congruence evident regarding employment in the preceding 2 years and 74 percent agreement regarding whether youth belonged to an organized group in the community. Congruence on wages earned by youth at the current job had the lowest level of congruence (69 percent). Among incongruent cases, youth were about twice as likely as parents were to report the higher wage (21 percent vs. 10 percent).

Table A-2. Congruence of parent and youth responses to key items in NLTS and NLTS2

	Percentage with		
	Congruent responses	Parent answering yes (higher), youth no (lower)	Parent answering no (lower), youth yes (higher)
<b>NLTS items</b>			
Youth lived independently	90.6	2.1	6.6
Youth had a paid job	88.4	4.7	6.8
Wage category of employed youth	83.8	8.3	7.9
In the past year, youth went to:			
A postsecondary vocational school	90.9	3.2	5.8
A 2-year college	90.9	4.4	4.7
A 4-year college	95.8	3.2	1.0
Out-of-school youth belonged to groups	70.2	10.2	19.6
<b>NLTS2 items</b>			
Youth currently working for pay	79.5	8.9	11.6
Current hourly wage	68.9	10.2	20.9
Youth worked for pay in past 2 years	78.0	7.9	14.1
Youth belongs to an organized group in the community	74.4	7.0	18.4

NOTE: NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interview, 1987 and Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 1 parent interviews, 2001, Wave 3 parent and youth telephone interview/mail survey, 2005.

In both NLTS and NLTS2, it is impossible to determine the cause of discrepant responses. Complete congruence would not be expected, even with both respondents answering accurately, because the parent interview and youth interview/survey could have been completed several months apart during the 4-month interview period for NLTS and the 7-month interview period for NLTS2; the status of youth could have changed in the intervening period. In such cases, both responses would be accurate at the time given. However, discrepancies also could result from one response being inaccurate, either because a respondent gave a socially desirable response (e.g., reported a youth was employed when he or she was not) or because the respondent (usually the parent) had inaccurate information (e.g., a youth no longer living with a parent had not informed the parent regarding a community group he or she had joined, leading to a negative parent response regarding group membership when a positive response was accurate).



## Weighting the Data

The percentages and means reported in the data tables throughout this report are estimates of the true values for the population of youth with disabilities in the NLTS and NLTS2 age range. The response for each sample member is weighted to represent the number of youth in his or her disability category in the kind of LEA (i.e., region, size, and wealth) or special school from which he or she was selected. Responses also are weighted to represent the best estimate of the number of youth with disabilities by racial/ethnic category (non-Hispanic White, non-Hispanic Black, non-Hispanic other, and Hispanic).

Table A-3 illustrates the concept of sample weighting and its effect on percentages or means that are calculated for youth with disabilities as a group. In this example, 10 youth are included in a sample, 1 from each of 10 disability groups, and each has a hypothetical value regarding whether that youth participated in organized group activities in the community (1 for yes, 0 for no). Six youth participated in such activities. Summing the hypothetical values for the 10 youth results in an average of 60 percent for the full group. However, this would not accurately represent the national population of youth with disabilities because many more youth are classified as having a learning disability than as having orthopedic or other health impairments, for example. Therefore, in calculating a population estimate, weights in the example are applied that correspond to the proportion of youth in the population who are from each disability category (actual NLTS and NLTS2 weights account for disability category and several aspects of the districts from which youth were chosen). The sample weights for this example appear in column C. Using these weights, the weighted population estimate is 88 percent. The percentages in all NLTS and NLTS2 tables are similarly weighted population estimates, whereas the sample sizes are the actual numbers of cases on which the weighted estimates are based (similar to the 10 cases in column A in table A-3).

Table A-3. Example of weighted percentage calculation

Disability category	A Number in sample	B Participated in group activities	C Example weight for category	D Weighted value for category
<b>Total</b>	10	6	10.0	8.8
Learning disability	1	1	5.0	5.0
Speech/language impairment	1	1	1.9	1.9
Mental retardation	1	1	1.0	1.0
Emotional disturbance	1	0	.8	0
Hearing impairment	1	1	.2	.2
Visual impairment	1	1	.1	.1
Orthopedic impairment	1	0	.1	0
Other health impairment	1	1	.6	.6
Autism	1	0	.2	0
Multiple disabilities	1	0	.1	0
	Unweighted sample percentage = 60 percent (Column B total divided by Column A total)		Weighted population estimate = 88 percent (Column D total divided by Column C total)	

The youth in LEAs and state schools with data for each survey were weighted to represent the universe of students in LEAs and state schools at the two study time points. NLTS weighting procedures are detailed in (Javitz and Wagner 1990). NLTS2 used the following process:

- For each of the 64 LEA sampling cells, an LEA student sampling weight was computed. This weight is the ratio of the number of students in participating LEAs in that cell divided by the number of students in all LEAs in that cell in the universe of LEAs. The weight represents the number of students in the universe who are represented by each student in the participating LEAs. For example, if participating LEAs in a particular cell served 4,000 students and the universe of LEAs in the cell served 400,000 students, then the LEA student sampling weight would be 100.
- For each of the 64 LEA cells, the number of students in a disability category was estimated by multiplying the number of students with that disability on the rosters of participating LEAs in a cell by the adjusted LEA student sampling weight for that cell. For example, if 350 students with learning disabilities were served by LEAs in a cell and the LEA student sampling weight for that cell was 100 (that is, each student in the sample of participating LEAs in that cell represented 100 students in the universe), there would be an estimated 35,000 students with learning disabilities in that cell in the universe.
- For the state schools, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters by the inverse of the proportion of state schools that submitted rosters.
- Initial student weights were calculated for each cell by disability as the estimated number of students in that cell divided by the number of respondents in that cell.
- Weights were adjusted by disability category by using a raking algorithm so that the sum of the weights by geographic region, wealth, LEA size, and ethnicity was equal to the estimated national distribution for that disability. The adjustments were typically small and essentially served as a nonresponse adjustment. However, the adjustments could become substantial when there were relatively few interviewees (as occurred in the small and medium strata for the lowest-incidence disabilities) because in these cases, there might not be any interviewees in some cells, and it was necessary to adjust the weights of other interviewees to compensate. Two constraints were imposed on the adjustments: (1) within each size stratum, the cells' weights could not vary from the average weight by more than a factor of 2, and (2) the average weight within each size stratum could not be larger than 4 times the overall average weight. These constraints substantially increased the efficiency of the sample at the cost of introducing a small amount of weighting bias.
- In a final step, the weights were adjusted so that they summed to the number of students in each disability category, as reported to OSEP by the states for the 2000–01 school year (Office of Special Education Programs 2001).

## **Analytic Adjustments to Increase the Comparability of Study Samples**

The NLTS and NLTS2 samples are similar in many respects. Yet, they differ in important ways that make a comparison between youth in the full samples of the two studies inadvisable because misleading conclusions could be drawn from such comparisons.

### ***Age***

One important distinction is the age of youth in the two studies. NLTS includes youth who were ages 13 to 21 when selected and 18 through 26 when Wave 2 parent/youth interview/survey data were collected. NLTS2 in contrast, includes youth who were 13 through 16 when selected and 17 through 21 when Wave 3 parent/youth data were collected. Thus, the full sample of youth with NLTS Wave 2 parent data included youth who were older than any in NLTS2 (22-through 26 year olds) and NLTS2 included youth who were younger than any included in NLTS (17 year olds). Because age can be a powerful determinant of the experiences of adolescents, comparisons made in this report between the two studies include only youth in the age range that overlaps the two studies, 18 through 21 year olds. In addition, the two samples then were weighted to have the same distribution of these age groups: 15 percent who were 18 years old, 30 percent were 19, 38 percent were 20, and 17 percent were 21 years old.

### ***Disability Category***

Another difference between the study samples that has been accommodated through analytic adjustments to enhance comparability involves the system of disability classification in use at the time each of the studies were conducted. In both studies, information about the nature of students' disabilities came from rosters of all students in the age ranges included in the studies and receiving special education services in the 1985–86 or 2000–01 school years under the auspices of participating local education agencies (LEAs) and state-supported special schools. Each student was assigned to a disability category on the basis of the primary disability designated by the student's school or district. In 2001 the federal disability categories specified for students differed from those in 1986:

- There were categories in 2001 that were not in use in 1986, specifically the categories of autism and traumatic brain injury.
- The categories of deaf and hard of hearing in 1986 were included in the one disability category of hearing impairment in 2001.

Because the autism category was not in use in 1986, for this report, the NLTS2 youth with autism (approximately 180 youth) were included in the other health impairment category, where they likely would have been classified in 1986.

Youth in the 2001 traumatic brain injury category (approximately 110 youth) were assigned to a disability category compatible with the disability categories in effect in 1986, based on disability information provided by parents during the telephone interview. Traumatic brain injuries can affect varied areas, such as communication, physical, or learning abilities, depending upon the structures of the brain that had been damaged. Parents of youth with traumatic brain injuries usually described the functional disabilities experienced by their child, rather than, or in addition to using the term, "traumatic brain injury," when they were asked about their child's

disability during the parent interview. This parent data provided the basis for recoding the 2001 traumatic brain injury category into the 1986 disability categories. Most youth in the 2001 traumatic brain injury category were included in the orthopedic (approximately 50 youth), learning disability (approximately 25 youth), or other health impairment (approximately 20 youth) categories. They also were placed in the multiple disability (approximately 5 youth), visual impairment (approximately 5 youth), speech/language impairment (approximately 5 youth), hearing impairment (1 youth), or mental retardation (1 youth) categories.

In addition, the two NLTS categories of deaf (approximately 310 youth) and hard of hearing (approximately 320 youth) were combined to be comparable to the single NLTS2 category of hearing impairment. In both cohorts, students with deaf-blindness were included in the multiple impairments category because there were too few to report separately (approximately 10 youth in NLTS and 30 youth in NLTS2).

### ***Household Income***

Classifying the income of parents' households in NLTS and NLTS2 relied exclusively on information provided during the parent interview/surveys. NLTS income data were reported in six broad categories, e.g., "under \$12,000" or "\$25,000 to less than \$38,000." NLTS2 income data were reported in 16 categories, increasing in \$5,000 increments, e.g., "\$10,001 to \$15,000," or "30,001 to \$35,000." Because income was reported in categories instead of specific amounts, it was not possible to adjust NLTS income for inflation to make them equivalent to 2005 dollars, the preferred approach for comparing income groups over time. As an alternative, three income categories were created—lowest, middle, and highest—each of which encompassed similar proportions of the income distribution in the two studies. Thus, the comparisons reported indicate how various outcomes differed for the designated lowest income group in NLTS relative to the designated lowest income group in NLTS2. Ideally, the three groups each would contain approximately one-third of the income distribution in each study. However, the limited number of response categories used in NLTS and the fact that the distribution was heavily skewed to the few lowest income categories precluded forming groups that fairly evenly divided the full income distribution. The grouping strategy that created the most closely equivalent groups across the two studies assigned 52 percent of the NLTS sample to the lowest income category, 31 percent to the middle category, and 17 percent to the highest category. In NLTS2, the percentages are 48 percent, 34 percent, and 18 percent, respectively. Thus, the categories indicate income relative to other youth in each study, not a fixed income amount.

### **Estimating Standard Errors**

Each estimate reported in the data tables is accompanied by a standard error. A standard error acknowledges that any population estimate that is calculated from a sample will only approximate the true value for the population. The true population value will fall within the range demarcated by the estimate, plus or minus 1.96 times the standard error, 95 percent of the time. For example, if the estimate for youth' postsecondary enrollment in NLTS was 26.3 percent, with a standard error of 2.13 (as reported in chapter 2, figure 1), one can be 95 percent confident that the true current postsecondary enrollment rate for the population is between 22.1 percent and 30.5 percent.

Because the NLTS and NLTS2 samples are both stratified and clustered, calculating standard errors by formula is not straightforward. Standard errors for means and proportions can, however, be estimated by using pseudoreplication, a procedure that is widely used by the U.S. Census Bureau and other federal agencies involved in fielding complex surveys. To that end, a set of weights was developed for each of 32 balanced half-replicate subsamples. Each half-replicate involved selecting half of the total set of LEAs that provided contact information, using a partial factorial balanced design (resulting in about half of the LEAs being selected within each stratum) and then weighting that half to represent the entire universe. The half-replicates could be used to estimate the variance of a sample mean by (1) calculating the mean of the variable of interest on the full sample and each half-sample, using the appropriate weights; (2) calculating the squares of the deviations of the half-sample estimate from the full-sample estimate; and (3) adding the squared deviations and dividing by (n-1), where n is the number of half-replicates. Since there were 32 replicates, the variance estimates would have 31 degrees of freedom.

Because the method of using replicate weights is computationally intensive and not easily implemented in the Statistical Analysis System (SAS), we sought a simpler formula-based procedure. We selected a variety of categorical and continuous Wave 1 variables and calculated their standard errors using replicate weights. We compared those standard error estimates with those obtained using a formula appropriate for an independent and identically distributed sample with unequal weights. (Under the latter assumptions, the effective sample size can be approximated as

$$N_{eff} = N \left( \frac{E^2[W]}{E^2[W] + V[W]} \right)$$

where  $N_{eff}$  is the effective sample size,  $E^2[W]$  is the square of the arithmetic average of the weights, and  $V[W]$  is the variance of the weights. For a variable  $X$ , the standard error of estimate can typically be approximated by  $\sqrt{V[X]/N_{eff}}$ , where  $V[X]$  is the weighted variance of  $X$ .) As expected, due to the complex sampling design in NLTS2, the use of the formula given above was not fully adequate. However, we found that if we multiplied these formula-based standard errors by 1.25, this yielded estimates that slightly exceeded the variance estimates via pseudo-replication for approximately 90 percent of the categorical and 90 percent of the continuous variables that were examined. Therefore we modified our formula by including a design factor of 25, which accounts for the stratified and clustered nature of the sample.

All standard errors in this report were calculated using formula-based estimates rather than estimates based on the replicate weights. Since our formula based estimates tend to be slightly larger than the variances using pseudo-replicates, and the cutoff values for  $t$ -statistics based on infinite degrees of freedom rather than 31 degrees of freedom are similar, we calculated our  $p$ -values based on infinite degrees of freedom.

## Determining Statistical Significance

The following formula was used to determine the statistical significance of the differences between independent groups.

$$F = \frac{(P_1 - P_2)^2}{SE_1^2 + SE_2^2}$$

For example, this formula could be used to determine whether the difference in the percentages of students who report a particular view among students with learning disabilities and among those with hearing impairments is greater than would be expected to occur by chance. In this formula,  $P_1$  and  $SE_1$  are the first percentage and its standard error and  $P_2$  and  $SE_2$  are the second percentage and its standard error. The squared difference between the two percentages of interest is divided by the sum of the two squared standard errors.

If the product of a calculation is larger than 3.84 (i.e.,  $1.96^2$ ), the difference is significant at the .05 level—that is, it would occur by chance fewer than 5 times in 100. If the result of the calculation is at least 6.63, the significance level is .01; products of 10.8 or greater are significant at the .001 level (Owen 1962, pp. 12, 51).

Testing for the significance of differences in responses to two survey items for the same individuals involves identifying for each youth the pattern of response to the two items. Responses to items (e.g., the youth reported relying “a lot” on parents for support—yes or no—and reported relying on friends “a lot” for support—yes or no) are scored as 0 or 1, producing difference values for individual students of +1 (responded affirmatively to the first item but not the second), 0 (responded affirmatively to both items or neither item), or -1 (responded affirmatively to the second item but not the first). The test statistic is the square of a ratio, where the numerator of the ratio is the weighted mean change score and the denominator is an estimate of the standard error of that mean. Since the ratio approaches a normal distribution by the Central Limit Theorem, for samples of the sizes included in the analyses, this test statistic approximately follows a chi-square distribution with one degree of freedom—i.e., an  $F(1, \text{infinity})$  distribution.

Regardless of whether comparisons are for independent or dependent samples, a large number of statistical analyses were conducted and are presented in this report. Since no explicit adjustments were made for multiple comparisons, the likelihood of finding at least one statistically significant difference when no difference exists in the population is substantially larger than the type I error for each individual analysis. This may be particularly true when many of the variables on which the groups are being compared are measures of the same or similar constructs, as is the case in this report. To partially compensate for the number of analyses that were conducted, we used a relatively conservative  $p$  value of .01. The text mentions only differences that reach a level of significance of at least  $p < .01$ . If no level of significance is reported, the group differences described do not attain the  $p < .01$  level. Readers also are cautioned that the meaningfulness of differences reported here cannot be inferred from their statistical significance.

## Measurement and Reporting Issues

The chapters in this report provide information on specific variables included in analyses. However, several general points about NLTS and NLTS2 measures that are used repeatedly in analyses should be clear to readers as they consider the findings reported here.

**Categorizing students by primary disability.** Information about the nature of students’ disabilities came from rosters of all students in the NLTS and NLTS2 age ranges receiving special education services in the 1983-84 or 2000–01 school year (respectively) under the auspices of participating LEAs and state-supported special schools. In analyses in this report, each student is assigned to a disability category on the basis of the primary disability designated by the student’s school or district. Although there are federal guidelines in making category

assignments, criteria and methods for assigning students to categories vary from state to state and even between districts within states, with the potential for substantial variation in the nature and severity of disabilities included in the categories (see, for example, MacMillan and Siperstein 2002). Therefore, NLTS and NLTS2 data should not be interpreted as describing students who truly had a particular disability, but rather as describing students who were categorized as having that primary disability.

The exception to reliance on school or district category assignment involved students in the disability classifications that differed at the time each of the studies was conducted. The specific categories affected were the NLTS categories of deafness and hard of hearing and the NLTS2 categories of autism or traumatic brain injury. As described earlier in this Appendix (Analytic Adjustments section), modifications were made to these disability categories to enhance the comparability of the study samples. In addition, students with deaf-blindness were included in the multiple impairments category because there were too few to report separately.

**Reporting statistics.** Statistics are not reported for groups with fewer than 30 members. Statistics with a decimal of .5 are rounded to the next whole number in the text.

A number of interview items related to post-high school experiences were presented to respondents as open-ended questions, with no predefined response categories. For example, “What kind of work do you do for this job?” (asked of employed youth).

For each such question, interviewers had a set of response categories into which they coded responses when the match of the response to the categories was straightforward. For example, a response from a youth who reported he quit his most recent job because “it was September and I was going back to school” could readily be assigned to the precoded category of “went back to school.” When responses did not readily match precoded categories, interviewers were trained to record the verbatim response and leave the item uncoded. Approximately the first 100 verbatim responses for each question were then reviewed by the survey data team to identify responses that were frequent enough to develop additional precoded categories and responses that could be included in existing precoded categories by expanding the response category description (e.g., “went back to school” could be expanded to include “started school” without changing the intent of the category to identify youth who left employment to pursue their education). New categories or expanded category definitions were then incorporated.

## Appendix A References

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## **Appendix B**

### **Additional Analyses**



## Appendix B. Additional Analyses

### Characteristics of Out-of-High School Youth With Disabilities

NLTS and NLTS2 represent youth with disabilities nationally who were in secondary school and receiving special education services in grade 7 or above and ages 13 through 21 in the 1983-84 school year in NLTS and 13 through 16 in the 2000–01 school year in NLTS2. This report focuses on the subset of youth no longer in secondary school in 1990 in NLTS and in 2005 in NLTS2. Understanding the characteristics of out-of-high school youth with disabilities in both studies is important for interpreting differences in their after-high school experiences. Tables B-1 through B-3 describe these subsamples—youth with disabilities who were out of high school and for whom data were reported, either by youth themselves or by their parents, as part of the NLTS Wave 2 or NLTS2 Wave 3 parent and youth telephone interviews and youth mail survey.

As described in appendix A, differences exist between NLTS and NLTS2 that required analytic adjustments be made to disability category. Specifically, two 2001 disability categories, autism and traumatic brain injury, were not in use in 1986, and the categories of deaf and hard of hearing in 1986 were included in one disability category of hearing impairment in 2001. After adjustments had been made to the disability categories, differences remained between the NLTS and NLTS2 samples in the category of health impairment/autism. Consistent with the increasing number of students identified with autism (Volkmar et al. 2004), the NLTS2 sample included a significantly higher proportion of youth in the other health impairment/autism category than the NLTS sample (6 percent vs. 1 percent,  $p < .01$ ; table B-1). Other disability categories did not differ significantly between NLTS and NLTS2.

No significant differences in gender, years since leaving high school, household income category, or race/ethnicity were apparent between the two subsamples (table B-2). Differences were evident in high school leaving status; youth in NLTS2 were more likely to have completed high school than were those in NLTS (85 percent vs. 70 percent,  $p < .001$ ).

Table B-1. Primary disability category of out-of-high school youth, by study

Variable	NLTS	NLTS2
	Percent	
<b>Primary disability category+</b>		
Learning disability	61.8 (2.28)	64.0 (3.0)
Speech/language impairment	3.6 (0.88)	3.5 (1.23)
Mental retardation	17.3 (1.78)	10.6 (2.05)
Emotional disturbance	11.4 (1.49)	12.3 (2.19)
Hearing impairment	1.9 (0.64)	1.3 (0.76)
Visual impairment	0.8 (0.42)	0.5 (0.47)
Orthopedic impairment	1.2 (0.51)	1.2 (0.73)
Other health impairment/autism	1.4 (0.55)	5.6** (1.10)
Multiple disabilities/deaf-blindness	0.50 (0.33)	1.1 (0.70)

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interview, 1987 and Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 1 parent interviews, 2001, Wave 3 parent and youth telephone interview/mail survey, 2005.

Table B-2. Demographic characteristics of out-of-high school youth with disabilities, by study

Variable	NLTS	NLTS2
	Percent	
<b>Gender</b>		
Male	69.6 (2.16)	69.0 (3.09)
Female	30.4 (2.16)	31.0 (3.09)
<b>High school leaving status</b>		
High school completer	70.2 (2.15)	84.8*** (2.40)
High school non-completer	29.8 (2.15)	15.2*** (2.40)
<b>Years since leaving high school</b>		
Less than 1 year	39.9 (2.30)	37.4 (3.23)
1 to less than 2 years	28.2 (2.11)	26.0 (2.93)
2 to 4 years	31.8 (2.19)	36.6 (3.21)
<b>Household income</b>		
Low	52.3 (2.57)	48.4 (3.56)
Middle	30.9 (2.38)	34.2 (3.38)
High	16.8 (1.92)	17.5 (2.70)
<b>Race/ethnicity</b>		
White	70.4 (2.24)	64.6 (3.19)
African American	19.3 (1.94)	18.5 (2.59)
Hispanic	7.3 (1.28)	13.1 (2.25)

\*\*\*  $p < .001$ .

NOTE: Standard errors are in parentheses. NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interview, 1987 and Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 1 parent interviews, 2001, Wave 3 parent and youth telephone interview/mail survey, 2005.

NLTS and NLTS2 sample members did not differ significantly in their functional cognitive skills (e.g., reading and understanding common signs, telling time on a clock with hands, counting change, and looking up telephone numbers and using the telephone; table B-3). As presented in previous reports comparing the experiences of youth in NLTS with those in NLTS2 (Wagner, Cameto, and Newman 2003), the age at which high-school-age youth with disabilities in NLTS2 first were recognized as having a disability was significantly earlier than in NLTS. More than half (52 percent) of those in NLTS were older than 6 years when first identified as having a disability, compared with 39 percent of those in NLTS2 ( $p < .01$ ).

Table B-3. Functional characteristics and age at identification of out-of-high school youth with disabilities, by study

Variable	NLTS	NLTS2
	Percent	
Functional cognitive skills scale score		
High (13-16)	74.2 (2.16)	74.9 (3.02)
Medium (8-12)	23.1 (2.08)	23.2 (2.94)
Low (4-7)	2.7 (0.80)	2.0 (0.97)
Disability first identified at age:		
At birth	10.4 (1.65)	9.8 (2.15)
1-4 years	9.2 (1.56)	17.1 (2.73)
5-6 years	28.3 (2.43)	34.4 (3.44)
Older than 6 years	52.2 (2.69)	38.7 ** (3.53)

\*\*  $p < .01$ .

NOTE: Standard errors are in parentheses. NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interview, 1987 and Wave 2 parent/youth interview, 1990; U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 1 parent interviews, 2001, Wave 3 parent and youth telephone interview/mail survey, 2005.

## Distribution of Demographic Characteristics Across Disability Categories

Findings in this report are presented for youth with disabilities in each study as a group and then are reported separately for youth in each disability category. Findings also are reported for youth who differ in secondary school-leaving status, gender, race/ethnicity, and household income. These bivariate analyses should not be interpreted as implying that a factor on which subgroups are differentiated (e.g., disability category) has a causal relationship with the differences reported. Further, readers should be aware that demographic factors (e.g., race/ethnicity and household income) are correlated among youth with disabilities, as well as being distributed differently across disability categories. Tables B-4 and B-5 present demographic characteristics of out-of-high school youth with disabilities overall and within each disability category for NLTS and NLTS2 (respectively).<sup>75</sup>

### NLTS

This report represents youth who were out of high school up to 4 years. Forty percent of the NLTS sample had left high school in the year prior to the interview/survey, 28 percent had left between 1 and 2 years, and 32 percent had left between 2 and 4 years earlier (table B-4). Youth with different disability classifications did not differ significantly in their length of time since leaving high school when compared with youth with disabilities overall.

Overall, 70 percent of youth with disabilities had completed their high school program. Fewer youth with emotional disturbances (47 percent) than those with disabilities overall had completed high school ( $p < .001$ ). Youth with hearing, visual or orthopedic impairments were more likely to have completed high school than youth with disabilities as a group (89 percent, 88 percent, and 91 percent, respectively,  $p < .001$  for all comparisons).

More than two-thirds of out-of-high school youth with disabilities in NLTS (70 percent) were male. Youth in most disability categories were more likely to be male than female, with the exception of youth with orthopedic impairments, where they were about equally likely to be male (49 percent) as female (51 percent). Youth with orthopedic impairments were less likely to be male and more likely to be female than youth with disabilities as a group ( $p < .001$  for both comparisons).

As a group, 70 percent of NLTS youth with disabilities were White, 19 percent were African American, and 7 percent were Hispanic. Youth with hearing impairments were more likely to be African American than were youth with disabilities as a group (28 percent vs. 19 percent,  $p < .01$ ). Youth with speech/language impairments (21 percent), orthopedic impairments (19 percent), other health impairments (22 percent) were more likely to be Hispanic than were youth with disabilities overall (vs. 7 percent,  $p < .01$  for all comparisons).

Fifty-two percent of NLTS youth with disabilities who were out of high school were from families in the lowest income category, 31 percent were in the middle income and 17 percent were in the highest income category. Youth with mental retardation (67 percent) were more likely to come from families in the lowest income category than were youth with disabilities as a

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<sup>75</sup> See Wagner et al. (1991) and Wagner et al. (2003) for relationships of demographic factors and disability categories for the full NLTS and NLTS2 samples (respectively).

group (52 percent,  $p < .01$ ) and less likely to come from families in the highest income category (8 percent vs. 17 percent,  $p < .01$ ).

Table B-4. Demographic characteristics of NLTS out-of-high school youth with disabilities, by disability category

Characteristics	All disabilities	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf blindness
	Percent									
Years since leaving high school										
Less than 1 year	39.9 (2.30)	40.7 (3.42)	46.4 (5.43)	38.6 (4.24)	34.0 (4.34)	44.6 (2.92)	45.5 (4.11)	42.2 (5.02)	41.7 (6.01)	47.5 (7.34)
1 to less than 2 years	28.2 (2.11)	27.1 (3.09)	25.6 (4.75)	34.4 (4.14)	25.6 (4.00)	28.7 (2.66)	33.0 (3.89)	31.8 (4.73)	25.4 (5.30)	23.7 (6.25)
2 to 4 years	31.8 (2.19)	32.2 (3.25)	27.9 (4.88)	26.9 (3.86)	40.4 (4.50)	26.7 (2.60)	21.6 (3.40)	26.0 (4.46)	32.9 (5.72)	28.8 (6.66)
High school-leaving status										
Completed high school	70.2 (2.15)	72.5 (3.12)	80.2 (4.34)	70.0 (3.99)	47.4 (4.59)	89.0 (1.84)	87.9 (2.69)	91.3 (2.88)	72.0 (5.50)	78.1 (6.08)
Did not complete high school	29.8 (2.15)	27.5 (3.12)	19.8 (4.34)	30.0 (3.99)	52.6 (4.59)	11.0 (1.84)	12.1 (2.69)	8.7 (2.88)	28.0 (5.50)	21.9 (6.08)
Gender										
Male	69.6 (2.16)	73.5 (3.07)	64.2 (5.23)	58.9 (4.28)	74.5 (4.00)	55.3 (2.92)	58.6 (4.07)	49.3 (5.11)	53.2 (6.08)	62.6 (7.11)
Female	30.4 (2.16)	26.5 (3.07)	35.8 (5.23)	41.1 (4.28)	25.5 (4.00)	44.7 (2.92)	41.4 (4.07)	50.7 (5.11)	46.8 (6.08)	37.4 (7.11)
Race/ethnicity										
White	70.4 (2.24)	73.2 (3.20)	58.2 (5.62)	63.5 (4.44)	76.0 (4.10)	55.8 (3.09)	58.7 (4.23)	53.1 (5.25)	57.4 (6.27)	57.6 (7.52)
African American	19.3 (1.94)	16.6 (2.69)	18.2 (4.40)	28.1 (4.15)	18.5 (3.73)	28.1 (2.80)	27.1 (3.82)	25.3 (4.58)	19.3 (5.00)	25.7 (6.65)
Hispanic	7.3 (1.28)	6.6 (1.79)	21.0 (4.64)	5.8 (2.16)	4.3 (1.95)	13.4 (2.12)	10.5 (2.64)	18.7 (4.10)	22.3 (5.28)	14.9 (5.42)
Household income										
Low	52.3 (2.57)	47.5 (3.81)	49.6 (6.09)	66.7 (4.64)	55.0 (4.86)	58.9 (3.19)	55.5 (4.54)	54.5 (5.45)	52.5 (6.63)	68.8 (7.33)
Middle	30.9 (2.38)	33.3 (3.59)	30.4 (5.60)	25.4 (4.29)	29.8 (4.47)	25.7 (2.83)	28.4 (4.12)	18.9 (4.29)	25.2 (5.76)	18.1 (6.09)
High	16.8 (1.92)	19.2 (3.00)	19.9 (4.86)	7.9 (2.66)	15.2 (3.51)	15.4 (2.34)	16.1 (3.36)	26.6 (4.84)	22.3 (5.52)	13.1 (5.34)

NOTE: Standard errors are in parentheses. NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interviews, 1987, Wave 2 parent and youth interview/survey, 1990. U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent and youth telephone interview/mail survey, 2005.



## **NLTS2**

Thirty-seven percent of NLTS2 youth with disabilities had been out of high school for less than 1 year, 26 percent from 1 up to 2 years, and 37 percent from 2 to 4 years. Eighty-five percent had left high school by completing their high school program. Years since leaving high school and high school completion status did not differ significantly by disability category in comparison with NLTS2 youth with disabilities overall (table B-5).

NLTS2 youth with disabilities were more likely to be male (69 percent) than female (31 percent,  $p < .001$ ). Youth with visual impairments were more likely to be female than were youth with disabilities as a group (54 percent vs. 31 percent,  $p < .01$ ).

Sixty-five percent of NLTS2 youth with disabilities as a whole were White, 19 percent were African American, and 13 percent were Hispanic. Youth with mental retardation were disproportionately likely to be African American, relative to youth with disabilities as a group (39 percent vs. 19 percent,  $p < .01$ ).

Overall, 48 percent of NLTS2 out-of-high school youth with disabilities were from families in the lowest income category, 34 percent from the middle category, and 18 percent from the highest category. Youth with mental retardation were more likely to come from families in the lowest income category (71 percent) than were youth with disabilities as a group (48 percent,  $p < .001$ ). Those with speech impairments (33 percent) or other health impairments (34 percent) were more likely to have parents in the highest income category (18 percent,  $p < .01$  for both comparisons).

Table B-5. Demographic characteristics of NLTS2 out-of-high school youth with disabilities, by disability category

Characteristics	All disabilities	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment/autism	Multiple disabilities/deaf blindness
	Percent									
Years since leaving high school										
Less than 1 year	37.4 (3.23)	38.2 (4.87)	37.5 (5.10)	46.2 (5.71)	26.4 (4.50)	29.3 (5.70)	28.1 (7.61)	33.7 (5.25)	37.1 (4.62)	46.7 (8.02)
1 to less than 2 years	26.0 (2.93)	24.9 (4.33)	25.9 (4.61)	22.1 (4.76)	31.5 (4.74)	32.6 (5.87)	23.6 (7.19)	42.0 (5.48)	28.3 (4.31)	28.6 (7.27)
2 to 4 years	36.6 (3.21)	36.8 (4.83)	36.7 (5.07)	31.8 (5.34)	42.1 (5.04)	38.2 (6.09)	48.3 (8.46)	24.3 (4.76)	34.5 (4.55)	24.7 (6.93)
High school-leaving status										
Completed high school	84.8 (2.40)	86.0 (3.48)	85.4 (3.72)	82.6 (4.35)	78.1 (4.25)	92.8 (3.24)	94.5 (3.86)	90.2 (3.30)	85.3 (3.39)	91.6 (4.46)
Did not complete high school	15.2 (2.40)	14.0 (3.48)	14.6 (3.72)	17.4 (4.35)	21.9 (4.25)	7.2 (3.24)	5.5 (3.86)	9.8 (3.30)	14.7 (3.39)	18.4 (4.46)
Gender										
Male	69.0 (3.09)	69.8 (4.60)	58.3 (5.19)	57.8 (5.66)	79.6 (4.11)	51.4 (6.26)	46.1 (8.44)	58.8 (5.47)	73.6 (4.22)	62.9 (7.77)
Female	31.0 (2.09)	30.2 (4.60)	41.7 (5.19)	42.2 (5.66)	20.4 (4.11)	48.6 (6.26)	53.9 (8.44)	41.2 (5.47)	26.4 (4.22)	37.1 (7.77)
Race/ethnicity										
White	64.6 (3.19)	64.9 (4.78)	71.9 (4.73)	51.2 (5.73)	66.6 (4.81)	64.3 (6.00)	67.9 (7.91)	66.8 (5.23)	75.7 (4.10)	72.4 (7.19)
African American	18.5 (2.59)	15.5 (3.63)	12.6 (3.49)	38.7 (5.58)	22.5 (4.26)	15.1 (4.48)	15.6 (6.15)	14.6 (3.92)	11.5 (3.05)	15.2 (5.77)
Hispanic	13.1 (2.25)	15.3 (3.61)	11.5 (3.36)	8.0 (3.11)	9.1 (2.93)	14.9 (4.46)	11.1 (5.32)	14.6 (3.92)	8.4 (2.65)	8.2 (4.41)
Household income										
Low	48.4 (3.56)	46.3 (5.25)	36.2 (5.47)	70.9 (5.58)	52.8 (5.53)	33.1 (6.49)	43.5 (9.21)	45.3 (5.75)	34.9 (4.84)	38.9 (8.10)
Middle	34.2 (3.38)	37.0 (5.08)	30.8 (5.25)	21.0 (5.01)	33.6 (5.23)	33.2 (6.49)	30.6 (8.56)	24.5 (4.97)	30.9 (4.69)	34.3 (7.89)
High	17.5 (2.70)	16.7 (3.93)	32.9 (5.34)	8.1 (3.35)	13.6 (3.80)	33.6 (6.51)	25.9 (8.14)	30.2 (5.30)	34.2 (4.82)	26.8 (7.36)

NOTE: Standard errors are in parentheses. NLTS percentages are weighted population estimates based on a sample of approximately 2,580. NLTS2 percentages are weighted population estimates based on a sample of approximately 2,620.

SOURCE: U.S. Department of Education, Office of Special Education Programs, National Longitudinal Transition Study (NLTS), Wave 1 parent interviews, 1987, Wave 2 parent and youth interview/survey, 1990. U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), Wave 3 parent and youth telephone interview/mail survey, 2005.

## Appendix B Reference

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