April 2005

AFTER HIGH SCHOOL: A FIRST LOOK AT THE POSTSCHOOL EXPERIENCES OF YOUTH WITH DISABILITIES

A Report from the National Longitudinal Transition Study-2 (NLTS2)

Prepared for:

Office of Special Education Programs
U.S. Department of Education

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Prepared for:
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Prepared by:
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EXECUTIVE SUMMARY

Leaving high school is an exciting threshold for many youth in this country, both those with and those without disabilities. It can occasion many changes, which, taken together, can alter students' daily lives dramatically. A familiar schedule of early rising, classroom instruction until midafternoon, school-sponsored extracurricular activities after school, and homework in the evenings gives way to the often more flexible schedules of college for youth who pursue postsecondary education or the structure of a full- or part-time job for those who work. As youth no longer see their friends every day in and between classes or participate in school-sponsored extracurricular activities, the pattern of their social interactions also can change markedly when they leave high school. Perhaps the most dramatic changes following high school occur for youth whose plans entail leaving home, which can plunge them into environments that are fundamentally different from their earlier experiences. These changes can require youth quickly to "step up" to increased expectations for maturity and independence and, for college students, academic performance.

These transitions can be difficult for any youth, but they can be particularly difficult for youth with disabilities, who may encounter additional challenges to negotiating the transition to young adulthood, but are young people with disabilities able to overcome these challenges and succeed in their early transition years?

This question is being addressed through the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education, which is generating information on the experiences and achievements of youth with disabilities in multiple domains during their secondary school years and in the transition to young adulthood. NLTS2 involves a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and receiving special education services in grade 7 or above on December 1, 2000. NLTS2 findings generalize to youth with disabilities nationally and to youth in each of the 12 federal special education disability categories in use for students in the NLTS2 age range.

This report focuses on the 28% of youth with disabilities who were out of secondary school and ages 15 through 19 when telephone interviews were conducted with their parents and, whenever possible, with youth themselves in 2003 and for whom interviews also were conducted in 2001.[1] NLTS2 telephone interview findings presented in this document describe:

- The characteristics of out-of-school youth with disabilities.
- Their experiences in the postsecondary education, employment, independence, and social domains in their first 2 years out of high school.
- The individual and household characteristics and youth experiences that are associated with variations in the achievements of youth with disabilities in their early years after high school.

[1] These two data collection time points are referred to as Wave 1 (2001 interviews) and Wave 2 (2003 interviews) throughout this report.

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Characteristics of Out-of-School Youth with Disabilities

Several characteristics of the population of youth with disabilities who have been out of secondary school up to 2 years provide important background for interpreting their early postschool experiences.

- Although most out-of-school youth with disabilities completed high school, 28% left school without receiving a diploma. Dropout rates are particularly high for youth with emotional disturbances (44%).
- Large majorities of out-of-school youth are classified as having learning disabilities or emotional disturbances, are male, and are 18 or 19 years old.
- Very few youth with disabilities have any trouble with self-care tasks, and the majority are reported by parents to have high functional cognitive skills, communicate with no trouble, and have excellent or very good health. However, some youth in every disability category have low ratings on these skills, including relatively larger proportions of youth with autism, traumatic brain injuries, or multiple disabilities.
- Social skills are the most problematic for all categories of youth; about 6 in 10 youth with disabilities have moderate social skills scores, with about 1 in 6 having high skills and 1 in 5 having low skills. Low social skills ratings are particularly prevalent for youth with emotional disturbances.

Engagement in School, Work, or Preparation for Work

The early postschool activities of the large majority of out-of-school youth with disabilities affirm that their secondary school years have, indeed, prepared them for further education and employment. At some time since leaving high school, almost 8 in 10 out-of-school youth with disabilities have been engaged in postsecondary education, paid employment, or training to prepare them for employment. Employment is the sole mode of engagement in the community for about half of out-of-school youth with disabilities, 4% have attended postsecondary school without working or participating in job training, and about one-fifth have both gone to school and worked since leaving high school.

Postsecondary Education Participation

- About 3 in 10 out-of-school youth with disabilities have taken postsecondary education classes since leaving high school, with one in five currently attending a postsecondary school at the time of the Wave 2 interview. This current rate of attending postsecondary school is less than half that of their peers in the general population.
- More youth with disabilities are enrolled in 2-year or community colleges than in other types of postsecondary schools. One-fifth have done so at some time since high school, and 10% are attending such schools currently, a participation rate similar to that of youth in the general population.
- Since leaving high school, 9% of youth with disabilities have attended a 4-year college, with 6% doing so currently. Youth in the general population are more than four and

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one-half times as likely as youth with disabilities to be currently taking courses in 4-year colleges.

- About 5% of youth with disabilities attend postsecondary vocational, business, or technical schools.

Multivariate analyses indicate that several youth and household characteristics and experiences are associated with a higher probability of having enrolled in 2- or 4-year colleges, including having higher functional cognitive skills, being female, having a better educated head of household, progressing to the next grade level each year in school, and graduating from high school. Only having attention deficit disorder or attention-deficit/hyperactivity disorder (ADD/ADHD) is associated with the likelihood of enrolling in a postsecondary vocational, business, or technical school.

Regarding the experiences of postsecondary students with disabilities:

- Almost three-fourths of postsecondary students with disabilities go to school full-time, and about 8 in 10 are enrolled steadily, rather than a semester or quarter here and there.
- About two-thirds of postsecondary students with disabilities receive no accommodations from their schools, primarily because their schools are unaware of their disabilities. About half of postsecondary students with disabilities reported that they do not consider themselves to have a disability, and another 7% acknowledged a disability but have not informed their schools of it. Only 40% of postsecondary students with disabilities have informed their schools of their disabilities. Thus, the 35% who receive accommodations are 88% of those whose schools are aware of their disabilities.

Employment after High School

- About 7 in 10 out-of-school youth with disabilities have worked for pay at some time since leaving high school, and more than 4 in 10 were employed at the time of the Wave 2 interview. This rate is substantially below the 63% employment rate among same-age out-of-school youth in the general population.
- Reliance on typically low-paying personal-care jobs has decreased markedly over time among girls with disabilities; at the same time, there have been substantial increases in jobs in the trades among boys.
- Youth with disabilities have experienced an overall increase in the average number of hours they work per week and a nearly 20-percentage-point increase (to 40%) in those working full-time.
- Wages increased an average of $1.30 in 2 years, resulting from a significant drop in the percentage of youth with disabilities working for less than minimum wage and a 25-percentage-point increase (to 40%) in the number of youth earning more than $7.00 per hour. However, receiving benefits as part of a total compensation package is not common; about one-third of out-of-school youth with disabilities receive any benefits (i.e., paid vacation or sick leave, health insurance, or retirement benefits).

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- Only 4% of working youth with disabilities receive accommodations for their disabilities, largely because most youth have employers who are unaware of their disabilities. Among those whose employers are aware of their disabilities, 25% are receiving workplace accommodations for them.
- Most working youth with disabilities have positive feelings about their employment experiences. Four in 10 say they like their current job very much, three-fourths believe their job has put their education to good use and that they are well paid, and two-thirds believe they have opportunities for advancement. Among youth employed more than 6 months, about 60% reported having been promoted, taking on more responsibility, or receiving a pay increase.

Emerging Independence

- Up to 2 years after high school, about three-quarters of youth with disabilities still are living with their parents, a significant decline from 2 years earlier and a similar rate to that of the general population of youth.
- The likelihood that youth with disabilities live independently is enhanced by the sizable increase over time in the proportion of age-eligible youth who have driving privileges; two-thirds can drive, whereas fewer than half could do so 2 years earlier.
- About 12% of out-of-school youth are living with a spouse or roommate outside of their parents' home in Wave 2, and two-thirds of these youth are reported to have annual incomes of $5,000 or less.
- About 1 in 10 out-of-school youth with disabilities participated in government benefit programs during high school, and participation has changed little during the first 2 postschool years.
- Personal financial management tools also are being used by more youth with disabilities; about one-third have personal checking accounts, and almost one in five have a credit card or charge account in their own name, significantly more youth than 2 years earlier.
- Eight percent of out-of-school youth with disabilities are reported to have had or fathered a child by Wave 2, a rate of parenting similar to that for the general population.

Leisure Activities, Social Involvement, and Citizenship

- Passive uses of leisure time, such as watching television or videos and listening to music, have declined in the 2 years since youth with disabilities left high school, as have electronic forms of communication.
- Participation in organized community groups and in volunteer and community service activities also has declined. In Wave 2, about one-fourth of out-of-school youth with disabilities belong to organized community groups, and a similar share take part in volunteer activities, down from 45% pursuing each activity in Wave 1.

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- In contrast, out-of-school youth with disabilities are seeing friends much more often than they were 2 years earlier. Just over half of youth with disabilities reported seeing friends at least weekly outside of organized groups and any school they may attend, an increase from about one-third of youth 2 years earlier.
- Almost two-thirds of youth with disabilities who are 18 or older are registered to vote, a rate similar to that for the general population of youth.
- When they have been out of secondary school up to 2 years, about half of youth with disabilities have been stopped by police for other than a traffic violation, and 16% have spent a night in jail, both significant increases in a 2-year period. Almost 3 in 10 have been arrested at least once, and 1 in 5 are on probation or parole. These rates of arrest and being on probation or parole have not increased significantly since leaving high school, and the arrest rate is not significantly different from that of peers in the general population.

Results Associated with Dropping Out of School

Failure to complete high school is associated with a variety of negative consequences for youth with disabilities in their early postschool years.

- Dropouts are significantly less likely to be engaged in school, work, or preparation for work shortly after high school than are school completers; two-thirds of dropouts have been engaged in these activities, compared with almost seven in eight school completers.
- Not surprisingly, the forms of engagement of dropouts are unlikely to include postsecondary education. Controlling for other differences between dropouts and completers, including their functional cognitive abilities and previous academic achievement, dropouts with disabilities are 18 percentage points less likely to have enrolled in a 2- or 4-year college shortly after high school than are school completers. Eight percent of dropouts have attended vocational, business, or technical schools, and 1% have attended a 2-year college at some time since leaving high school.
- The rate of holding a paid job since high school among both dropouts and school completers is about 85%. However, dropouts with disabilities tend to work more hours per week (an average of 34 vs. 27 for school completers). Because dropouts and school completers earn quite similar hourly wages, the longer hours worked by dropouts result, in the short run, in their total earnings being higher on average than those of completers.
- Dropouts are more likely to support independent households and children than are school completers. More than one-fourth of dropouts with disabilities are living independently with a spouse or partner, and one-fifth are parenting, rates of independent living and parenting that are more than four times those of youth with disabilities who completed high school.
- Dropouts are less likely than school completers to have such supports for independence as a driver's license or a checking account, and they are much less likely to be registered to vote.

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- More than one-third of dropouts with disabilities have spent a night in jail, three times the rate of youth with disabilities who finished high school. Controlling for other differences between them, dropouts are 10 percentage points more likely to have been arrested than youth with disabilities who finished high school.

Disability Has Differential Effects across Outcome Domains

There are markedly different patterns of early postschool experience for youth who differ in their disability category, as noted below.

Youth with Learning Disabilities or Other Health Impairments

- About three-fourths of out-of-school youth with learning disabilities or other health impairments have completed high school, almost all of those with a regular diploma.
- More than three-fourths have been engaged in school, work, or preparation for work since leaving high school, and about 45% were currently employed at the time of the Wave 2 interview.
- About one-third were expected by their parents "definitely" to go on to postsecondary education after high school, and about that many have done so within 2 years of leaving high school. Two-year college is their typical pursuit.
- Youth with learning disabilities or other health impairments have experienced among the broadest changes in their leisure-time and friendship pursuits, with large reductions in passive leisure activities (e.g., watching television or using a computer) and large increases in seeing friends often.
- Although these youth are among the most likely to be registered to vote (about 70%), they also have experienced the largest declines in participation in prosocial organized groups and volunteer activities.
- Youth in these categories are second only to youth with emotional disturbances in the likelihood of being involved with the criminal justice system, and those with other health impairments show the only significant increase in arrest rates in the 2 years between Waves 1 and 2.

Youth with Emotional Disturbances

The early postschool experiences of youth with emotional disturbances are troubling in several respects.

- Youth with emotional disturbances are the most likely youth with disabilities to be out of secondary school, with 44% of those leaving school without finishing, the highest dropout rate of any disability category. School completers with emotional disturbances also are among the least likely to have graduated with a regular diploma.
- Thirty-five percent of youth with emotional disturbances no longer live with parents, the largest of any category of youth with disabilities, and they are the only group to show a significant increase in the likelihood of living in "other" arrangements, including in

criminal justice or mental health facilities, under legal guardianship, in foster care, or on the street.

- Youth in this category have experienced the largest increase in their rate of parenting; 11% of youth with emotional disturbances report having had or fathered a child, a 10-percentage-point increase from Wave 1.
- One-third of these youth have not found a way to become engaged in their community since leaving high school; for those who have, employment is the usual mode of engagement. Although more than 6 in 10 youth with emotional disturbances have been employed at some time since leaving high school, only about half as many are working currently, attesting to the difficulty many of these youth have in keeping a job.
- Only about one in five have been enrolled in any kind of postsecondary education since leaving high school, indicating that few youth in this category are getting the education that might help them find and hold better and more stable jobs.
- Although youth with emotional disturbances are by far the most likely to be rated by parents as having low social skills, they also are among the most likely to see friends often. However, they are among the least likely to take part in prosocial organized community groups or volunteer activities or to be registered to vote.
- More than three-fourths have been stopped by police other than for a traffic violation, 58% have been arrested at least once, and 43% have been on probation or parole. These rates are not significantly higher than rates for these youth 2 years earlier.

Youth with Mental Retardation or Multiple Disabilities

These are the categories of youth most likely to be reported to have low functional cognitive skills and to have difficulty communicating, functional limitations that can affect all aspects of life and set them apart from other youth with disabilities.

- They are among the least likely to be out of school, consistent with their tendency to remain in high school until they reach age 21. Those who have left high school are among the least likely to have completed high school, and among completers, they are among the least likely to have graduated with a regular diploma.
- Their rates of engagement in school, work, or preparation for work shortly after high school are the lowest of all disability categories, yet youth with mental retardation are among the most likely to be living on their own and to be parenting. Few have tools to support that independence, including driving privileges or checking accounts.
- Independent of other differences in functioning between them, youth with multiple disabilities are 17 percentage points less likely to see friends often than are youth with learning disabilities, and when more functional domains are affected by their disabilities, the likelihood of frequent friendship interactions falls even lower.
- Youth with mental retardation and those with multiple disabilities also are among the least likely to take part in organized community groups or volunteer activities up to 2 years after leaving high school.

Youth with Hearing or Visual Impairments

Youth with hearing or visual impairments are the most likely of all categories to experience academic success.

- Ninety percent or more finish high school, virtually all with a regular diploma.
- Youth with hearing or visual impairments are more than twice as likely as youth with disabilities as a whole to have enrolled in a postsecondary school; about two-thirds have done so up to 2 years after high school. Further, they are the most likely to attend a 4-year college or university; about 4 in 10 have enrolled in such schools, a rate four times that of youth with disabilities as a whole.
- Unlike youth with disabilities as a whole, youth with these sensory impairments show no significant decline over time in their participation in organized community groups or volunteer activities; almost twice as many of them volunteer, compared with youth with disabilities as a whole. They are as likely to be registered to vote as any other category of youth.
- The rates of criminal justice system involvement are low for these groups of youth, as are their parenting rates.

Despite these largely positive experiences being shared by youth with hearing and visual impairments, their experiences with friends and jobs differ.

- The communication challenges faced by youth with hearing impairments may help explain why they are significantly less likely than youth with disabilities as a whole to get together with friends frequently, a difference not observed for youth with visual impairments.
- In contrast, irrespective of other differences in disability, functioning, and demographics, youth with visual impairments are 21 percentage points less likely to be employed currently than youth with learning disabilities; there is no difference in the probability of employment between youth with learning disabilities and those with hearing impairments.
- Some of the difference between employment rates of youth with hearing and visual impairments may be attributable to the access to jobs that youth with hearing impairments have because they can drive; more than 80% of them who are age-eligible have driving privileges, compared with fewer than 20% of youth with visual impairments.

Demographic Differences Are Not Powerful

Youth with disabilities differ in many respects other than the nature of their disability, including such important characteristics as age, gender, household income, and race/ethnicity. However, these differences are not associated with strong or consistent differences across outcome domains, although there are some exceptions, as noted below.

Age

Youth in the narrow age range of 15- through 19-year-olds are similar in several respects. Age does not have an independent relationship with the likelihood that youth with disabilities see friends often or enroll in a vocational, business, or technical school, nor are there age differences in the likelihood that youth participate in volunteer or organized community group activities. Similarly, age is not associated with the likelihood of parenting or of being involved with the criminal justice system. However, some differences are evident.

- Age is strongly associated with a higher likelihood of employment and postsecondary education participation, independent of the influences of disability, functioning, and other demographic differences between youth.
- Nineteen-year-olds have experienced the largest drop over time in the proportion living with parents and the largest increase in having a checking account or personal credit card or charge account.
- The only significant increases in earning driving privileges have occurred among 18- and 19-year-olds, who are more likely than younger peers to have earned those privileges, potentially giving them greater access to employment, educational, and other community opportunities.

Gender

The experiences of boys and girls with disabilities differ in many, although not all, respects. Similarities across genders include their school-leaving status; the likelihood of being engaged in school, work, or preparation for work since leaving high school; current employment rates; and most aspects of independence, including residential arrangements, having driving privileges, using personal financial management tools, and having had or fathered a child.

Important differences are apparent in other experiences, however:

- Girls with disabilities are 6 percentage points more likely to have been enrolled in a 2- or 4-year college since high school than are boys, controlling for other differences between them.
- A large increase over time in seeing friends frequently has occurred only among girls with disabilities. This differential change has eliminated the difference between genders that existed in Wave 1.
- The significant increase in the likelihood of being stopped and questioned by police other than for a traffic violation and of spending a night in jail that is evident among youth with disabilities as a whole occurs solely among boys, resulting in boys being significantly more likely than girls to have stayed overnight in jail.
- Girls with disabilities are significantly less likely than boys to be single; about one-fourth are engaged, married, or in a marriage-like relationship. Girls who are living independently are significantly more likely than boys to be supporting themselves on less than $5,000 per year.

Household Income

Youth with disabilities who come from households with different income levels are similar in several aspects of their early postschool experiences. Their leisure-time use and social lives have not changed differentially, nor have many aspects of their independence, including their residential arrangements or parenting status. Income also is unrelated to the likelihood of currently being employed or ever having been arrested, irrespective of other differences between youth. Also, having a better-educated head of household, which tends to be more common among higher-income households, outweighs income itself in helping explain the variation in the likelihood that youth with disabilities will enroll in 2- or 4-year colleges up to 2 years after leaving high school.

However, youth with disabilities from wealthier households are more likely to be engaged in school, work, or preparation for work; whereas 93% of youth with disabilities from families with incomes of more than $50,000 a year are engaged in such activities after high school, 70% of youth from families with household incomes of $25,000 or less a year are thus engaged. Similarly, youth with disabilities from wealthier households are more likely than peers from low-income households to have earned driving privileges (perhaps because they are more likely to have access to a car) and to have a personal checking or charge account or credit card.

Race/Ethnicity

There are no differences across racial/ethnic groups in the likelihood of being engaged in school, work, or preparation for work shortly after high school; enrolling in college or a vocational, business, or technical school; living independently; having active friendships; having had or fathered a child; or ever having been arrested. However, independent of other differences between them, African-American youth with disabilities are at a 16-percentage-point disadvantage relative to white youth in their rate of current employment. Also, white youth with disabilities are more likely than others to have driving privileges and a personal checking account.

This summary of the postschool experiences of youth with disabilities reaffirms the great diversity in the experiences of youth with disabilities. Most have finished high school, become engaged in their communities, see friends regularly, and show signs of emerging independence; but on every dimension, it is evident that some youth are struggling because of their disability, poverty, the absence of a high school education, or other factors. Yet it is important to be cautious in assigning either success or failure to transition outcomes achieved during this very early period after high school. NLTS2 will continue to describe the experiences of youth with disabilities as they age and to investigate the programs and experiences during secondary school and the early transition years that are associated with positive results in young adulthood.

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1. THE EARLY POST-HIGH-SCHOOL YEARS FOR YOUTH WITH DISABILITIES

By Mary Wagner

Leaving high school is an exciting threshold for many youth in this country, both those with and those without disabilities. They and their families celebrate the accomplishments entailed in high school graduation, and many look forward to continuing their educations or to expanding their employment horizons when they leave high school. However, despite a gradual increase in graduation rates over time, in 2000, 3.8 million American youth ages 16 to 24 were not in high school and had not graduated (Kaufman, Alt, & Chapman, 2001), more than 1 in 10 youth in that age range.

Regardless of how youth leave high school, doing so can occasion many changes, which, taken together, can alter their daily lives dramatically. The end of high school brings the end of a familiar school-driven schedule that has most students up early in the morning, occupied in classroom instruction until midafternoon, often involved in school-sponsored extracurricular activities after school, and engaged in homework in the evenings. This structure is replaced by the often more flexible schedules of college for youth who pursue postsecondary education or the structure of a full- or part-time job for those who work. Youth who pursue neither of those activities after high school can find themselves searching for productive activities to fill their days.

The social lives of adolescent students also often revolve around school. They see their friends every day in and between classes, extracurricular activities provide opportunities to hone skills and engage in enjoyable pastimes with students who share similar interests, and activities such as prom and homecoming can be social highlights of the school year. Without these school-provided opportunities, the pattern of youth's social interactions can change markedly when they leave high school.

Perhaps the most dramatic changes following high school occur for youth whose plans entail leaving home. Entering college or the military can take youth away from their home communities, perhaps for the first time, and plunge them into environments that are fundamentally different from their earlier experiences on many dimensions. These changes can require youth quickly to "step up" to increased expectations for maturity and independence and, for college students, academic performance.

These transitions can be difficult for any youth; in fact, the early years after high school have been dubbed a "floundering period" (Halpern, 1992). They can be particularly difficult for youth with disabilities, who may encounter additional challenges to negotiating the transition to young adulthood successfully. For example, youth whose disabilities significantly affect social adjustment or interaction, such as emotional disturbances or autism, can find themselves left out of the kinds of interpersonal relationships that are common for most teens and that are a crucial foundation for successful employment, healthy friendships, and romantic relationships in young adulthood. With proper supports and accommodations, visual impairments often do not hamper the academic performance of youth during high school and into college, but those impairments can severely limit some kinds of employment options, even among college-educated youth.

Despite potential limitations associated with disability, research has demonstrated a wide range of achievements among youth with disabilities in the early years after high school (for example, Gill, 1999; Wagner, Newman, D'Amico, Jay, Butler-Nalin, et al., 1991). Although most become productively engaged in school or work within 2 years of leaving high school (78% according to Jay, 1991), many others struggle in the employment and education domains. Research has pointed to a variety of factors, including aspects of students' school programs, that are associated with more positive postschool outcomes for youth with disabilities (Benz, Yovanoff, & Doren, 1997; Wagner, Blackorby, Cameto, & Newman, 1993). Recognizing the key role that schools can play in supporting a successful transition, the recent reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004) affirms that the primary purpose of the free appropriate public education guaranteed to children and youth with disabilities is to "prepare them for further education, employment, and independent living" [IDEA 2004 Sec. 601(d)(1)(A)]. The 1997 amendments to IDEA (IDEA '97) added requirements to include transition planning in the individualized education programs (IEPs) of all secondary school students with disabilities in an effort to prepare them for the challenges of adulthood. IDEA 2004 goes on to describe transition services as:

> "designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including post-secondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation" [Sec. 602(34)(A)].

Given the results orientation of transition planning and its focus on the movement from school to postschool activities, it is fair to ask, "How do young people with disabilities fare in their early transition years in achieving the variety of positive forms of participation for which their education is intended to prepare them?"

Research Questions

The recent focus of the American education system on increased accountability for improved results for all students, embodied in both IDEA 2004 and the No Child Left Behind Act of 2001 (NCLB), points up the increasing importance of having accurate, nationwide data on student outcomes. This need for data includes information on the postschool experiences of youth with disabilities, for which IDEA 2004 holds the education system accountable. Yet not since 1993, when the National Longitudinal Transition Study of Special Education Students (NLTS) completed the reporting of its results, has there been an up-to-date national picture of the postschool experiences of youth with disabilities. This shortcoming is being addressed through the National Longitudinal Transition Study-2 (NLTS2), a 10-year study funded by the Office of Special Education Programs (OSEP) of the U.S. Department of Education, which is generating information on the experiences and achievements of youth with disabilities in multiple domains during their secondary school years and in the transition to young adulthood.

NLTS2 addresses questions about youth with disabilities in transition by providing information about a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and receiving special education services in grade 7 or above on December 1, 2000. NLTS2 findings generalize to youth with disabilities nationally and to youth in each of the

12 federal special education disability categories in use for students in the NLTS2 age range. (Details of the NLTS2 design, sample, and analysis procedures are presented in Appendix A.[1]) This report focuses on the subset of youth with disabilities who were out of secondary school and ages 15 through 19 when telephone interviews were conducted with their parents and, whenever possible, with youth themselves in 2003 and for whom interviews also were conducted in 2001.[2] NLTS2 findings reported in this document use information about these youth to address two questions that are central to the study:

- What are the experiences of youth with disabilities in the postsecondary education, employment, independence, and social domains in their first 2 years out of high school?
- Which youth do well and which struggle—i.e., what individual and household characteristics and youth experiences are associated with variations in the achievements of youth with disabilities in their early years after high school?

As noted previously, NLTS2 is the second longitudinal study of the transition of youth with disabilities that OSEP has funded. From the mid-1980s through 1993, NLTS provided the first national information on the crucial transition years ever available. A comparison of the early postschool outcomes of youth with disabilities represented in the two studies can begin to illuminate ways in which changes in special education policy and practice since NLTS have helped shape youth's transitions to early adulthood. However, important differences in the age groups in the two studies make a straightforward comparison of their findings misleading. Therefore, such comparisons are not included in this report. Instead, separate analyses that make the analytic adjustments necessary for valid comparisons will be conducted in early 2005 and reported in *Changes over Time in Early Postschool Results for Youth with Disabilities: A Report of Findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2).*

Analysis Methods

A two-part analysis approach has been used to address the research questions related to youth's early post-high-school experiences. The first step is to present descriptive findings for multiple indicators within the postsecondary education, employment, independence, and social arenas for youth with disabilities as a whole. For experiences that were measured in both Wave 1 (2001, when the large majority of youth represented in this report were still in high school) and Wave 2 (2003, when they were out of high school), findings are presented for both waves, and the change between them is calculated (e.g., on average, there has been a 19-percentage-point decrease in a 2-year period in youth with disabilities' taking part in organized group activities in their community). The report also describes a variety of experiences that were measured only in Wave 2 because they are appropriate only for out-of-school youth (e.g., participation in postsecondary education). When possible, findings for youth with disabilities are compared with those for the general population of youth. The descriptive analyses also examine differences in experiences among youth who differ in their primary disability classification and selected demographic characteristics, when significant.

[1] Additional information about NLTS2 is available at www.nlts2.org.

[2] These two data collection time points are referred to as Wave 1 (2001 interviews) and Wave 2 (2003 interviews) throughout this report.

In the second step, multivariate analyses address factors that are related to differences in key measures that are important outcomes for youth, with or without disabilities, in their early postschool years. These measures are: (1) having been enrolled in two specific kinds of postsecondary education institutions since high school—college (2- or 4-year) and/or a vocational, business, or technical school, (2) currently holding paid employment, and (3) having a social life that involves seeing friends outside of school or organized group activities at least weekly. In addition, one indicator that is a critical negative social outcome for youth is considered: (4) the likelihood that youth with disabilities ever have been arrested. Logistic regression analyses identify the independent relationships of various individual and household factors to these outcomes. Such analyses estimate the magnitude and direction of relationships for each factor, statistically holding constant the other factors in the analysis. The following factors are included in these multivariate analyses[3]:

- **Disability and functioning**—primary disability category; having ADHD; the number of functional domains affected by disability; and scores on scales measuring self-care, functional cognitive, and social skills.
- **Individual and household demographics**—age, gender, race/ethnicity, household income, and head of household's educational attainment.
- **Youth's attitudes, behaviors, and prior experiences**—high school completion, length of time since leaving high school, ever retained at grade level, paid employment during high school (in the analysis of postschool employment), ever suspended or expelled from school (in the analysis of arrests), postsecondary school enrollment (in analyses of employment and social outcomes), and current paid employment (in analyses of postsecondary education and social outcomes).

These factors are included in the analyses simultaneously, to identify the independent relationship each has to the postschool experiences of youth with disabilities, controlling for all others.

The multivariate analyses reported here intentionally do not explore the relationships between aspects of students' high school programs and their early postschool outcomes, for several reasons. First, only 28% of youth with disabilities represented in NLTS2 had left high school at the time the data reported here were collected. Further, their postschool experiences span from only a few days up to about 2 years after high school. Finally, NLTS2 has yet to complete collection of students' school transcripts, the source of information about important aspects of students' school programs, including their full programs of courses and their grades over their entire high school careers. Answers to the crucial question of how school programs and services affect later outcomes will be much more informative if they reflect the experiences of a greater proportion of youth, span a longer time period after high school, and include the most comprehensive data available in NLTS2 regarding students' school programs. Thus, the analyses reported here focus on a descriptive look at outcomes and on findings that associate variations in outcomes with students' disability and functioning; demographic characteristics; and attitudes, behaviors, and prior experiences. Analyses in subsequent years of NLTS2 will

[3] Details on the measurement of these factors and the rationale for including them in the analyses are presented in Appendix B.

expand these analyses to explore the relationships of school programs to postschool outcomes when more youth are out of high school.

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

- **Weighting of descriptive results.** All descriptive statistics presented in this report are weighted estimates of the national population of students receiving special education in the NLTS2 age group, as well as each disability category individually.
- **Standard errors.** For each mean and percentage in this report, a standard error is presented (usually in parentheses) that indicates the precision of the estimate. For example, a weighted estimated value of 50% and a standard error of 2 means that the value of the variable for the total population, if it had been measured, would, with 95% confidence, lie between 48% and 52% (i.e., within plus or minus 2 percentage points of 50%). Thus, smaller standard errors allow for greater confidence to be placed in the estimate, whereas larger ones require caution.
- **Small samples.** Although 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; Appendix C reports group sizes). Groups with very small samples have comparatively large standard errors. For example, because there are relatively few youth with deaf-blindness, estimates for that group have relatively large standard errors. Therefore, readers should be cautious in interpreting results for this group and others with small sample sizes.
- **Significant differences.** In discussions of the descriptive statistics, only differences among groups that reach a level of statistical significance of $p<.05$ are mentioned in the text, with significance levels generally noted. Appendix A outlines a method for using standard errors to calculate the significance of differences among groups of interest. Calculations of changes over time and multivariate analysis results indicate statistically significant results with the use of asterisks.

Organization of the Report

This report is organized to provide background information on out-of-school youth with disabilities and to address the key results of transition planning specified in IDEA 2004: postsecondary education, employment, independence, and community participation. Chapter 2 describes the youth with disabilities represented in this report—those who have been out of secondary school up to about 2 years—including when and how they left high school and key disability and demographic characteristics. This information provides a context for interpreting results regarding their early postschool experiences, presented in the remaining chapters. Chapter 3 provides a broad overview of those experiences by addressing the extent to which youth with disabilities are engaged in school, work, or preparation for work after they leave high school.

Chapters 4 and 5 consider two primary aspects of engagement outside the home—participation in postsecondary education and paid employment—including multivariate analyses identifying individual and household characteristics that distinguish youth with disabilities who are engaged in these activities from those who are not. Chapter 4 describes the extent to which youth with disabilities have enrolled in any postsecondary education and their participation in

2- and 4-year colleges and vocational or trade schools specifically. For youth with disabilities who have not finished high school, participation in General Educational Development (GED) or similar programs and receipt of a GED or high school diploma also are discussed. Chapter 5 considers the current employment status of out-of-school youth with disabilities and how their employment experiences have changed over a 2-year period.

The increasing independence of youth with disabilities is considered in Chapter 6, including the extent to which youth are living away from home, the prevalence of marriage and parenting, youth's household responsibilities, and aspects of their financial independence. Chapter 7 focuses on the social lives of youth with disabilities, including how their uses of leisure time, participation in organized group and volunteer activities, and social interactions have changed in a 2-year period. Factors associated with social involvement with friends and with having been arrested also are presented. The final chapter identifies key lessons learned about the experiences of out-of-school youth with disabilities and the factors that are associated with more positive outcomes in their early post-high-school years.

Appendix A provides details of the NLTS2 design, sample, measures, and analysis approaches. Appendix B presents factors that are hypothesized to relate to the outcomes of youth with disabilities and, therefore, that are included in multivariate analyses reported in Chapters 4, 5, and 7. Appendix C provides unweighted group sizes for the analyses reported in the descriptive data tables.

The following chapters provide the most recent national picture of multiple dimensions of the experiences of youth with disabilities who have been out of secondary school up to about 2 years and of factors that are associated with selected experiences. These findings will be augmented in the next few years of NLTS2 as more youth transition to early adulthood and have increasing exposure to opportunities for postsecondary education, employment, and independent living.

2. CHARACTERISTICS OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES

By Mary Wagner

NLTS2 represents youth with disabilities nationally who were ages 13 through 16, in secondary school, and receiving special education services in grade 7 or above in the 2000-01 school year. By mid-2003, 28% of these youth no longer were in secondary school, according to parents. Understanding the characteristics of out-of-school youth with disabilities is an important context for interpreting their experiences in their early years after high school. This chapter provides that context by describing out-of-school youth with disabilities in terms of their:

- School-leaving status and timing
- Disability and functioning
- Demographic characteristics.

Important relationships among some of these factors also are identified.[1]

School-Leaving Status

Of the 28% of youth with disabilities who were reported no longer to be in secondary school or receiving secondary school instruction at the Wave 2 interview, about equal portions left school some time during the 2001-02 and 2002-03 school years (45% and 44%, respectively). Thus, 90% of youth with disabilities represented in this report have been out of school from as little as a few days (e.g., a 2002-03 graduate interviewed in June 2003) to as much as 2 years (e.g., an October 2001 dropout interviewed in October 2003). The 10% of school leavers with disabilities who left school in the 2000-01 school year also have been out of school about 2 years. Therefore, the remainder of this report will refer to youth with disabilities who have been out of secondary school up to 2 years, even though 2001 graduates interviewed later in 2003 and dropouts who left school earlier in 2001 have been out of school somewhat longer.

According to parents, 72% of out-of-school school youth with disabilities finished high school by receiving either a regular diploma (68% of out-of-school youth and 94% of school completers) or a certificate of completion or similar document (4% of out-of-school youth, 6% of completers). About one-fourth of school leavers (26%) reportedly dropped out of secondary school without completing, and 1% were reported to have left school in other ways (e.g., permanent expulsion).[2]

The year in which youth with disabilities left secondary school is related to the way in which they left school (Exhibit 2-1). Few youth who left school in the 2000-01 school year were old enough to graduate; thus, more than three-fourths (79%) left without finishing and have been out of school somewhat more than 2 years. In contrast, dropouts are only about one-fourth of youth who left school in other years, when larger percentages of youth were old enough to graduate. Graduates are about equal proportions of school leavers in the 2001-02 and 2002-03 school years (74% and 77%, respectively; $p<.001$ compared with the 2000-01 school year).

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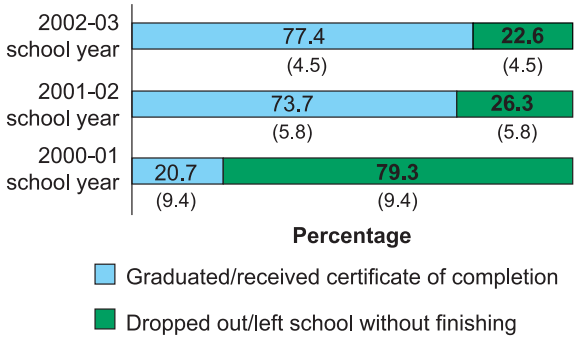
[1] The characteristics of out-of-school youth with disabilities represented in NLTS2 are not compared here with characteristics of youth represented in the original NLTS because age differences in the two samples make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the adjustments necessary for accurate comparisons between NLTS and NLTS2.

[2] These youth will be referred to as dropouts.

Exhibit 2-1
MODE OF SCHOOL LEAVING OF YOUTH WITH DISABILITIES, BY YEAR OF SCHOOL LEAVING



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

Given that graduates typically complete school in May or June, at the time of the Wave 2 interviews in summer and fall 2003, the large majority of graduates had been out of school from a few weeks to a little more than a year. Thus, on average, dropouts have been out of school somewhat longer than school completers; this difference may have implications for outcomes discussed in this report (e.g., being out of school longer may contribute to some dropouts' having a longer employment history than other youth).

Disability Characteristics

Youth in some disability categories are much more likely than others to be out of secondary school (Exhibit 2-2). Fewer than 20% of youth with speech or orthopedic impairments, mental retardation, autism, or multiple disabilities are out of school. In contrast, 31% or more of youth with learning disabilities, emotional disturbances, or traumatic brain injuries are no longer in secondary school ($p<.001$ comparing youth with emotional disturbances and those with speech impairments). A lower rate of school leaving among youth with speech impairments may be due in part to the fact that they are younger, on average, than other groups of youth (Marder, Levine, & Wagner, 2003). However, youth with mental retardation or multiple disabilities in the NLTS2 age range may have lower rates of school leaving because they are more likely than youth in other categories to continue to receive special education services in high school until age 21 (Wagner, 1991b). These differential rates of school leaving across disability categories produce an out-of-school population that is dominated by youth with learning disabilities (67%) and emotional disturbances (14%); therefore, the experiences of out-of-school youth as a group reflect heavily the behaviors of youth in these two categories.

How long youth have been out of school and the ways in which they leave school also vary across disability categories. For example, not only are larger proportions of youth with emotional disturbances than youth in other categories out of secondary school, more of them have been out of school longer and left school without finishing. One in five youth with emotional disturbances were reported to have left secondary school in the 2000-01 school year, a significantly higher rate of early school leaving than youth in most other categories. Further, a smaller percentage of out-of-school youth with emotional disturbances are school completers (56%) than youth in every other category ($p<.05$ compared with youth with learning disabilities). In contrast, youth with mental retardation, orthopedic impairments, autism, or traumatic brain injuries have larger proportions (60% to 68%) who left school in the 2002-03 school year, and youth with visual impairments are the most likely to have left school in the 2001-02 school year (60%; $p<.05$ comparing youth with mental retardation and visual impairments).

Exhibit 2-2
SCHOOL-LEAVING STATUS, TIMING, AND METHOD, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage no longer in secondary school	30.8 (2.7)	16.3 (2.2)	18.8 (2.3)	36.0 (2.9)	25.5 (2.9)	29.7 (3.7)	17.2 (2.4)	26.4 (2.4)	14.1 (2.1)	31.7 (5.1)	14.4 (2.2)
Percentage leaving secondary school in:											
2002-03	46.6 (5.7)	40.3 (7.6)	62.3 (7.5)	44.2 (5.5)	46.1 (6.9)	37.6 (9.2)	60.1 (8.0)	49.2 (5.6)	61.5 (9.5)	67.7 (10.3)	56.2 (9.4)
2001-02	44.4 (5.6)	49.8 (7.7)	32.7 (7.3)	36.2 (5.4)	51.9 (6.9)	60.4 (9.3)	37.1 (7.9)	43.8 (5.6)	32.8 (9.1)	28.8 (19.9)	29.1 (8.6)
2000-01	9.0 (3.3)	9.9 (4.6)	5.0 (3.4)	19.6 (4.4)	2.0 (2.0)	2.1 (2.7)	2.9 (2.7)	7.0 (2.9)	5.8 (2.9)	4.0 (4.0)	9.3 (6.0)
Percentage completing high school	74.8 (4.9)	79.1 (6.3)	72.2 (7.0)	56.1 (5.4)	90.3 (4.1)	95.1 (4.1)	87.9 (5.4)	77.1 (4.7)	86.1 (6.8)	78.5 (8.8)	64.9 (9.5)
Percentage of school completers whose parents reported they received a regular diploma	96.8 (2.3)	94.1 (4.3)	83.6 (7.1)	85.8 (5.2)	97.3 (2.4)	99.2 (1.8)	93.7 (4.3)	92.2 (3.5)	93.9 (5.2)	94.1 (6.0)	90.8 (7.7)

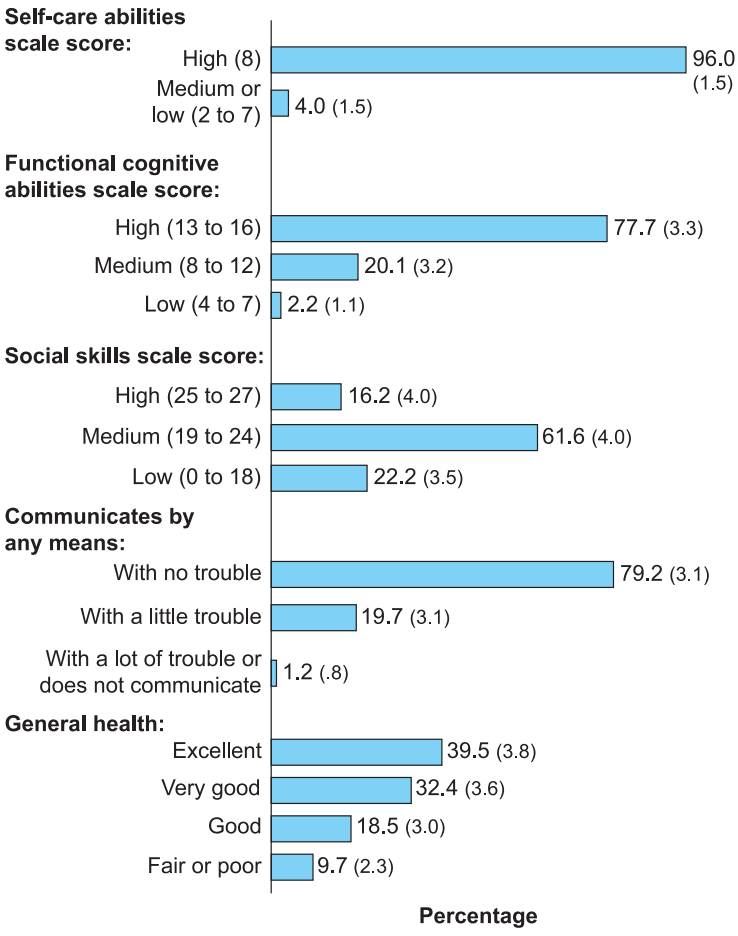
Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

School completion rates are quite high among youth with hearing or visual impairments (90% and 95%, respectively), as well as among those with orthopedic impairments (88%) or autism (86%). More than 90% of school completers in all categories except mental retardation and emotional disturbance were reported by parents to have received a regular high school diploma (91% of youth with multiple disabilities to 99% of those with visual impairments); 84% of youth with mental retardation and 86% of those with emotional disturbances were reported to have graduated with a regular diploma.

Although disability category is a key characteristic to consider when reviewing information about out-of-school youth with disabilities, it is the actual functional skills of youth that can have important implications for their experiences after high school. Five dimensions of functioning are addressed here, using parents' reports: self-care skills (how well youth dress and feed themselves independently), functional cognitive skills (how well youth perform common tasks that require literacy and numeracy, such as counting change and reading common signs), social skills (how often youth exhibit behaviors indicative of self-control, assertiveness, and cooperation), communication skills (how well youth communicate with others by any means), and general health (ranging from excellent to poor).[3] Higher functioning in these areas would be expected to promote more positive experiences in the early postschool years.

[3] Skills scales are described in greater detail in Appendix B.

Exhibit 2-3
FUNCTIONAL ABILITIES OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

The large majority of out-of-school youth with disabilities (96%) have no trouble with self-care tasks, and 78% are rated as having high functional cognitive skills (Exhibit 2-3). Nonetheless, 4% of youth with disabilities are challenged to perform the self-care tasks that are fundamental to independence. In addition, 20% have some trouble with functional cognitive tasks that require literacy or numeracy, and 2% do such tasks poorly, according to parents. Social skills are more problematic. Only 16% of youth with disabilities were reported by parents to have high social skills, and more than one in five (22%) have low social skills. Further, although 79% were reported to be able to communicate with no trouble, 20% have some trouble and 1% have major communication barriers. In addition, whereas the majority of youth with disabilities have excellent or very good health (40% and 32%, respectively), 10% have health that is described as fair or poor.

Understanding how basic abilities vary across disability categories helps to illuminate the differences in postschool experiences among youth. Notably, each disability category contains youth who demonstrate the full range of ability on each functional dimension (Exhibit 2-4). Further, for some categories of youth, high functioning on some dimensions is accompanied by much lower functioning on others. For example, almost all out-of-school youth with learning disabilities, speech or hearing impairments, or emotional disturbances dress and feed themselves with no trouble at all. The functional cognitive skills of these categories of youth also are rated highly (80% to 84% receive that rating, respectively). Youth with learning disabilities or emotional disturbances also are rated highly in their communication skills (83% and 80%, respectively, communicate with no trouble). However, communication presents challenges to those with speech or hearing impairments (39% and 59% of youth in these two categories,

Exhibit 2-4
FUNCTIONAL SKILLS OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabil-ities
Percentage rated by parents "high" on:											
Self-care skills	98.5 (1.3)	96.1 (3.0)	84.2 (5.7)	97.7 (1.6)	99.3 (1.2)	90.6 (5.6)	67.8 (7.1)	89.4 (3.4)	66.0 (9.1)	73.5 (9.2)	56.3 (9.5)
Functional cognitive skills	80.4 (4.5)	84.5 (5.7)	42.3 (7.8)	83.6 (4.2)	84.1 (5.2)	63.9 (9.3)	82.8 (6.3)	84.8 (4.0)	72.2 (8.8)	74.5 (9.3)	44.5 (9.6)
Percentage with social skills rated[a]:											
High	19.1 (4.7)	14.1 (5.8)	7.3 (4.3)	5.4 (2.6)	32.6 (7.0)	36.5 (9.5)	24.3 (7.2)	16.2 (4.2)	3.1 (3.8)	9.9 (6.6)	17.7 (8.5)
Low	17.4 (4.5)	16.5 (6.2)	26.0 (7.2)	45.8 (5.8)	9.7 (4.4)	10.6 (6.1)	17.1 (6.3)	22.5 (4.8)	28.1 (9.8)	30.0 (10.1)	25.9 (9.8)
Percentage communicating with no trouble	83.3 (4.1)	61.3 (7.5)	55.2 (7.7)	80.4 (4.3)	41.1 (6.8)	92.7 (4.9)	77.2 (6.8)	81.8 (4.2)	65.4 (9.2)	62.1 (10.2)	54.5 (9.6)
Percentage with health reported to be[b]:											
Excellent	41.2 (5.5)	50.7 (7.7)	30.4 (7.1)	36.0 (5.2)	40.8 (6.8)	50.7 (9.4)	28.1 (7.3)	40.5 (5.4)	47.0 (9.6)	21.1 (8.5)	27.3 (8.4)
Fair or poor	8.1 (3.0)	6.6 (3.8)	12.1 (5.0)	13.5 (3.7)	10.4 (4.2)	7.1 (4.9)	19.3 (6.4)	13.6 (3.8)	5.9 (4.5)	32.0 (9.7)	18.5 (7.4)

Source: NLTS2 Wave 2 parent/youth interviews.
[a] The category "medium" is omitted from the exhibit.
[b] The categories "very good" and "good" are omitted from the exhibit.
Standard errors are in parentheses.

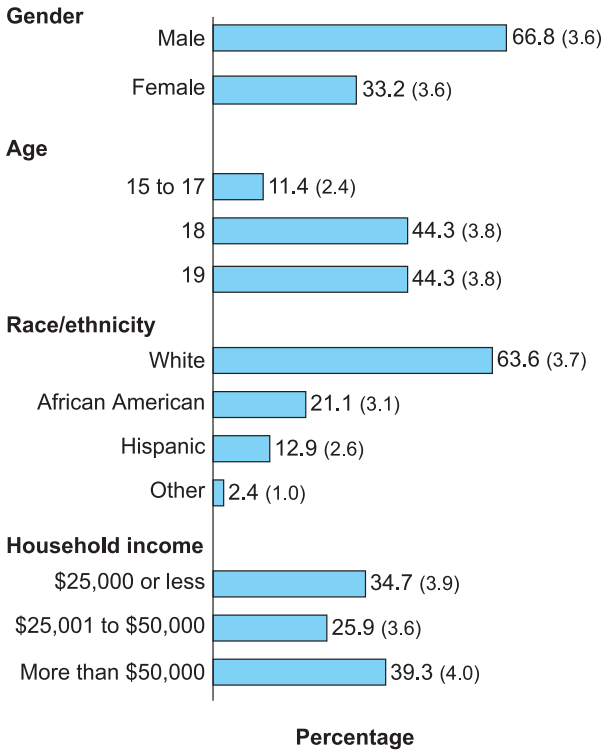
respectively, have at least some trouble communicating by any means). Youth with emotional disturbances are the most likely to be reported as having low social skills (46%, $p<.001$ compared with youth with learning disabilities).

In contrast to this uneven pattern of functioning across dimensions, youth with autism, traumatic brain injuries, or multiple disabilities tend to have a fairly consistent pattern of lower functioning across dimensions. They are among the lowest scorers on most measures, with the exception of social skills for youth with multiple disabilities and health for youth with autism.

Demographic Characteristics

Beyond the nature of their disability and its functional implications, several other characteristics of young people with disabilities can help shape their post-high-school experiences. Differences in age can be reflected in notable differences in both competence and independence as youth continue with the developmental tasks of adolescence. Gender is a defining human characteristic at any age that can influence the choices youth make in powerful ways. Race/ethnicity, too, can be associated with rich cultural traditions, patterns of

Exhibit 2-5
DEMOGRAPHIC CHARACTERISTICS OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

relationships within families, and strong group identification that can be reflected in the paths youth take after high school. Finally, the economic resources available to youth can limit or expand their horizons as they look to the future.

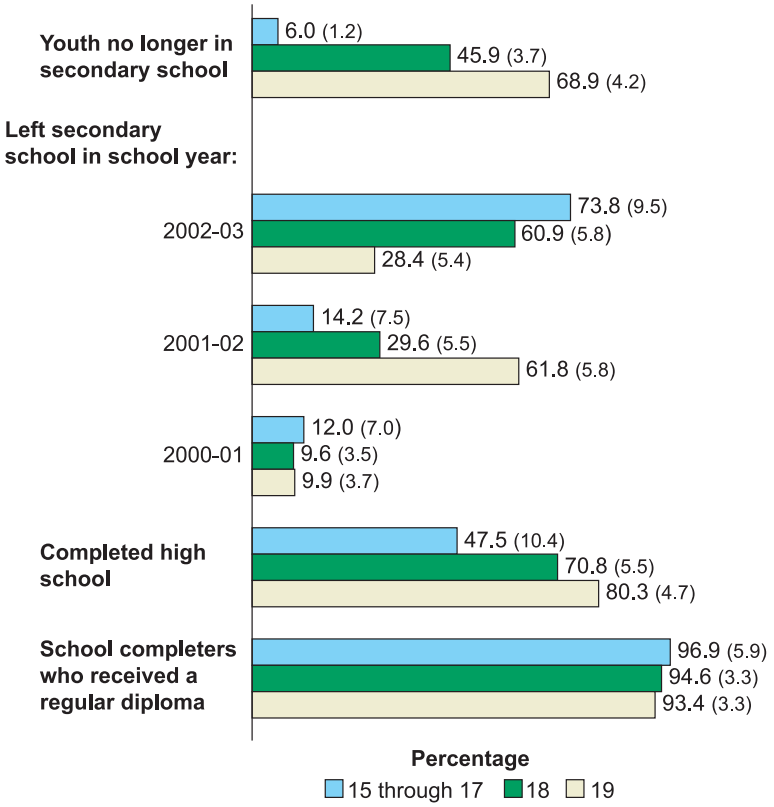
The large majority of youth with disabilities who have been out of school up to 2 years are 18 or 19 years old (89%, Exhibit 2-5). Two-thirds of out-of-school youth with disabilities are male, as is true of youth with disabilities as a whole, regardless of whether they are in or out of secondary school. A similar percentage (64%) are white, about one-fifth (21%) are African-American, and 13% are Hispanic. Approximately one-third (35%) of out-of-school youth with disabilities are from households with annual incomes of $25,000 or less, 26% are from households with incomes of $25,001 to $50,000, and 39% are from households with incomes of more than $50,000.

Not surprisingly, older youth with disabilities are more likely than younger peers to be out of secondary school (Exhibit 2-6). Whereas only 6% of those younger than 18 are out of school, 46% of 18-year-olds and 69% of 19-year-olds are out of secondary school. As would be expected, most (61%) of those who were 18 years old at the time of the 2003 interviews—the most common age for graduating from high school—left school in the 2002-03 school year; a similar percentage (62%) of 19-year-olds left school the previous year (when they were 18). The majority of the youngest age group (74%) left school in the 2002-03 school year. The youngest out-of-school youth are much less likely to have completed high school (48%) than 18-year-olds (71%, $p<.05$) or 19-year-olds (80%, $p<.01$).

There are no differences between boys and girls with disabilities in their school-leaving status, timing, or method. Similarly, there are no differences between youth with disabilities who differ in the income of their households or in their racial/ethnic background in the likelihood that they are out of school, the timing of their school leaving, or whether they received a regular diploma if they completed high school.

However, differences are apparent between groups in the likelihood that out-of-school youth completed high school. The completion rate is higher among youth with disabilities from wealthier households (i.e., with incomes of more than $50,000) than among low-income youth (82% vs. 64%, $p<.05$), an income-related difference that also is apparent in the general

Exhibit 2-6
SCHOOL-LEAVING STATUS, TIMING, AND METHOD OF YOUTH WITH DISABILITIES, BY AGE



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

population (Kaufman et al., 2001). Although Hispanic youth with disabilities have a lower rate of school completion than white or African-American students (60% vs. 74% and 78%), the small number of Hispanic out-of-school youth with disabilities prevents this difference from attaining statistical significance. However, a similar difference between Hispanic and white youth is apparent in the general population, among whom the dropout rate for Hispanics is almost three times the rate for white students (Kaufman et al., 2001).

Summary

This chapter highlights several characteristics of the population of youth with disabilities who have been out of secondary school up to 2 years to provide background for interpreting the early postschool experiences reported in the following chapters. Although most out-of-school youth with disabilities completed high school, 28% left school without receiving a diploma. Dropout rates are particularly high for youth with emotional disturbances (44%). Most out-of-school youth with disabilities have been out of secondary school from a few months to somewhat more than 1 year, with dropouts being more likely than graduates to have been out of school up to 2 years.

The large majority of youth are classified as having learning disabilities or emotional disturbances, are male, and are 18 or 19 years old. Both across the group as a whole and within disability categories, youth demonstrate a wide range of functional abilities, differences that would be expected to influence their options for postsecondary education, employment, social activities, and independence after high school. Across categories, almost all youth with disabilities have no trouble with self-care tasks, and the majority were reported by parents to have high functional cognitive skills, communicate with no trouble, and have excellent or very

good health. However, some youth in every disability category have low ratings on these skills, including larger proportions of youth with autism, traumatic brain injuries, or multiple disabilities than youth in most other categories. Social skills are the most problematic for all categories of youth; about 6 in 10 youth with disabilities have moderate social skills scores, with about 1 in 6 having high skills and 1 in 5 having low social skills. Low social skills ratings are particularly prevalent for youth with emotional disturbances.

The relationships between variations in these characteristics of out-of-school youth with disabilities and their early postschool experiences are explored in the following chapters.

3. ENGAGEMENT IN POSTSECONDARY EDUCATION, WORK, OR PREPARATION FOR WORK

By Nicolle M. Garza

Arguably, the main purpose of education for youth, both with and without disabilities, is to ensure that they are prepared to engage as adults within their communities. In the first few years after high school[1]—the period of time that is the focus of this report—young adults are just beginning the transition into adulthood and into ways of engaging in their communities that are typical of adulthood. A consensus has grown regarding the importance of having a broad notion of engagement and of successful transitions. For example, Halpern (1990) noted in his seminal review of follow-up and follow-along studies that "many people with disabilities value residential and personal/social adjustment more highly than vocational adjustment." Jay (1991) echoed the importance of looking at a wide range of outcomes for students, expanding what it means to be successful to include unpaid employment, sheltered work, volunteerism, and training. Levine and Nourse (1998) also pointed to the importance of looking at the many outcomes and influences that make youth successful.

Until the mid-1990s, few studies of youth with disabilities in transition examined postschool outcomes other than paid employment. Although the range of postschool outcomes has expanded, employment continues to be central in recent studies (Haywood & Schmidt-Davis, 2000; Benz et al., 1997). Even among students with disabilities represented in NLTS2, employment is the most commonly cited transition goal of students with disabilities while in secondary school (Cameto, Levine, & Wagner, 2004), and paid employment is more common in the early post-high-school years than postsecondary education (see Chapters 4 and 5).

However, we must recognize the increasing importance of postsecondary education and job training in the lives of many young adults in the United States. Enrollment in 2- or 4-year degree-granting institutions increased steadily over the decade of the 1990s, from 13.8 million to 15.3 million (Gerald & Hussar, 2002). College enrollment includes close to half a million students with disabilities (Lewis, Farris, & Greene, 1999), and concerted efforts are under way to increase the access of students with disabilities to postsecondary education (Getzel, Stodden, & Briel, 2001; NCRVE, 1999; Stodden, 2001).

This chapter sets the stage for in-depth analyses of postsecondary education and employment in subsequent chapters by including those outcomes within a broader concept of community engagement after high school.[2] In this conceptualization, youth with disabilities are considered engaged if they are participating or have participated in one or more of the following activities since leaving secondary school:

- **Employment**—working for pay, other than work around the house, including supported or sheltered employment.

[1] Youth with disabilities represented in this report have been out of secondary school from a few weeks to as much as 2 years.

[2] The engagement of out-of-school youth with disabilities represented in NLTS2 is not compared here with that of youth represented in the original NLTS because age differences in the two samples make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the adjustments necessary for accurate comparisons between NLTS and NLTS2.

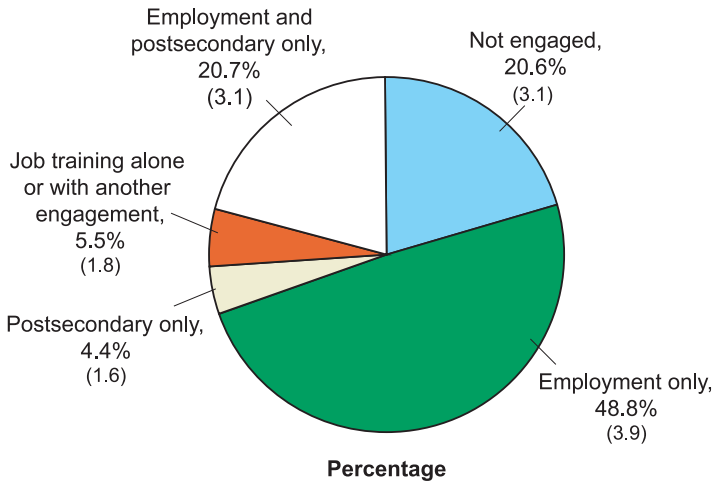
- **Postsecondary education**—(a) taking courses toward a GED or (b) attending a vocational, business, or technical school; a 2-year, junior, or community college; or a 4-year college or university.
- **Job training**—receiving training in specific job skills (e.g., car repair, Web page design, food service) from someone other than a family member, such as an agency or a government training program.

In examining the topic of engagement in school, work, or preparation for work, this chapter describes (1) the extent to which youth with disabilities participate in these activities within 2 years of leaving secondary school, (2) the most common activities comprising engagement, and (3) variations in rates and modes of engagement associated with differences in the disability category of youth and selected demographic characteristics.

Prevalence and Modes of Engagement

A large majority of out-of-school youth with disabilities (79%) have been engaged in employment, postsecondary education, job training, or a combination of those activities since leaving high school (Exhibit 3-1). Employment is the most common activity shortly after high school, with about 7 in 10 youth with disabilities having been employed, including 49% whose sole activity is paid employment. About 3 in 10 youth with disabilities have attended a postsecondary school, although only 4% engage in postsecondary activities exclusively. Multiple modes of engagement are not uncommon. For instance, 21% of youth with disabilities have both worked and gone to school. Six percent of youth have had job training, either alone or in combination with other activities.

Exhibit 3-1
MODES OF ENGAGEMENT OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



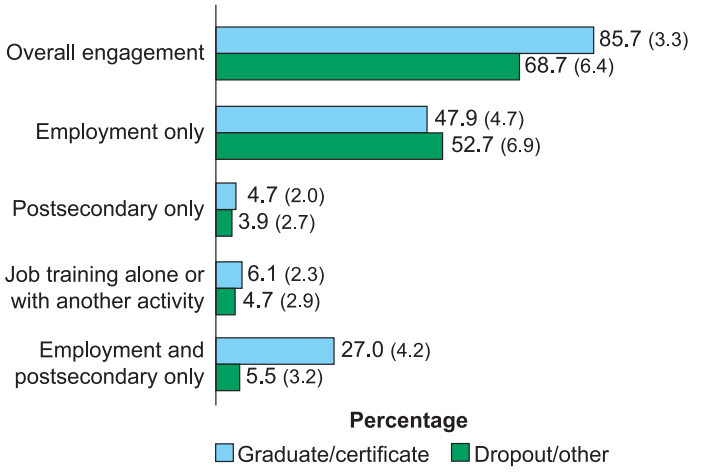
Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

School-Leaving Status Differences in Engagement

Given the frequency of postsecondary attendance among youth with disabilities, it is not surprising that those who graduated from high school[3] are more likely to be engaged than are dropouts (86% vs. 69%, $p<.05$; Exhibit 3-2). Further, school completers are more likely to devote time to both postsecondary education and employment (27% vs. 6%, $p<.001$). No other forms of engagement differ between the two groups.

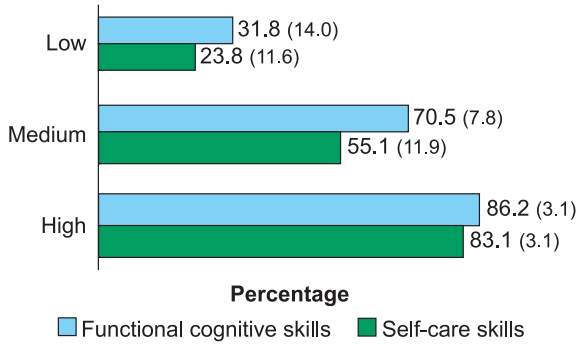
[3] Seventy-two percent of the out-of-school youth with disabilities represented in this report completed high school.

Exhibit 3-2
MODES OF ENGAGEMENT OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

Exhibit 3-3
ENGAGEMENT OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY FUNCTIONAL SKILLS



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

Disability and Functional Differences in Engagement

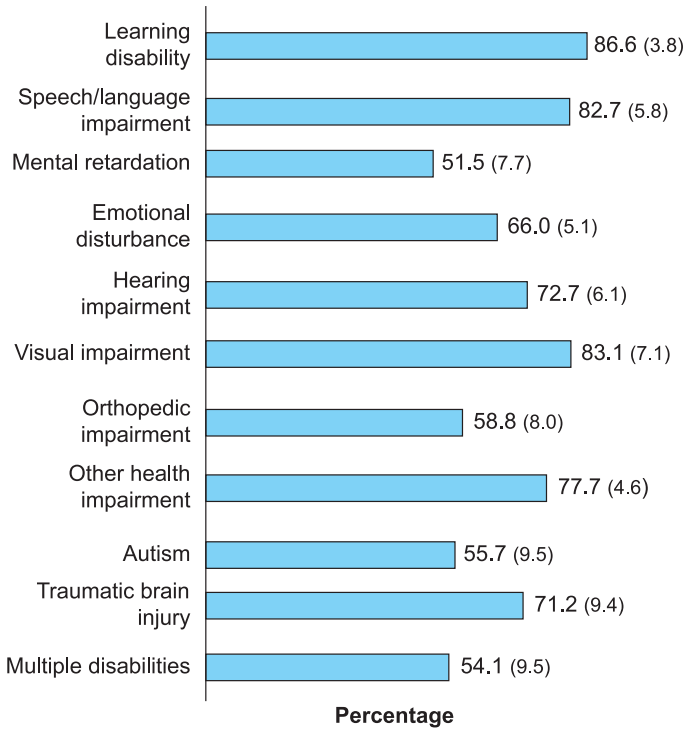
Chapter 2 pointed out important differences in the functioning of youth, both within and across primary disability categories. Although disability category is a key characteristic to understand about out-of-school youth with disabilities, it is the actual functional skills of youth that can have important implications for their experiences after high school. Both higher functional skills and primary disability category would be expected to differentiate youth in the extent to which they are engaged and the ways they are engaged shortly after high school.

For example, youth with disabilities with medium and high functional cognitive skills[4] are more likely to be engaged (70% and 86%, respectively) than youth with low functional cognitive skills (32%, $p<.05$ and $p<.001$; Exhibit 3-3). Youth with high self-care skills[5] are more likely to be engaged (83%) than youth with skills in the medium or low range (55% and 24%, $p<.05$ and $p<.001$). Nonetheless, sizable percentages of youth with the lowest functional cognitive and self-care skills are engaged (32% and 24%, respectively). Although low levels of these kinds of skills may somewhat constrain the types of postschool activities in which some youth engage, the majority of youth in all disability categories are engaged in school, work, or preparation for work; percentages range from 52% to 87% (Exhibit 3-4). Youth with mental retardation have the lowest rate of engagement (52%), followed by those with multiple disabilities (54%), autism (56%) and orthopedic impairments (59%). In contrast, 83% or more of youth with learning disabilities or speech or visual impairments, 78% of those with other health impairments, and 73% of those

[4] Functional cognitive skills are defined on a scale from 4 to 16 as follows: low (4-7), medium (8-12), high (13-16). The components of this scale are described in Appendix B.

[5] Self-care skills are measured on a scale from 2 to 8 as follows: low (2-4), medium (5-7), high (8). Components of the scale are described in Appendix B.

Exhibit 3-4
ENGAGEMENT OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY



Source: NLTS2 Wave 2 parent/youth interviews.

Standard errors are in parentheses.

with hearing impairments have engaged in school, work, or preparation for work ($p<.001$ comparing youth with learning disabilities and those with mental retardation). The engagement rate of youth with emotional disturbances is in the mid range of the distribution (66%, $p<.01$ and $p<.05$ compared with youth with learning disabilities and speech impairments, respectively).

Differences also exist across categories in the kinds of productive activities youth pursue after leaving high school (Exhibit 3-5). For example, although youth with learning disabilities or speech, hearing, visual, or other health impairments all are highly likely to be engaged, employment alone is the most common mode of engagement for youth with learning disabilities or other health impairments (54% and 41%, respectively), whereas many fewer youth with speech, hearing, or visual impairments are involved only in work (36%, 22%, and 16%, $p<.05$ and $p<.001$ compared with youth with learning disabilities); indeed, the latter are most likely to be both working and going to school (39%, 36%, and 34%, respectively). Although being engaged solely in postsecondary education is uncommon among youth in most categories, 14% of youth with visual or orthopedic impairments and 15% of youth with autism are engaged in that way.

Employment dominates the activities of youth with emotional disturbances, with 44% being involved solely in employment and 18% both working and going to school. Employment also is the most common activity among youth with mental retardation, traumatic brain injuries, or multiple disabilities, among whom 31%, 49%, and 40% are employed without engaging in other activities. Job training is common among nearly one-fifth of youth with visual impairments (18%) and among youth with mental retardation (12%), autism (13%), or traumatic brain injuries (12%).

Exhibit 3-5
MODES OF ENGAGEMENT OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage engaged in:											
Employment only	54.3 (5.5)	35.7 (7.4)	30.8 (7.1)	43.8 (5.3)	21.6 (5.7)	16.5 (7.0)	27.0 (7.2)	41.2 (5.4)	14.0 (6.7)	49.4 (10.4)	40.4 (9.3)
Postsecondary education only	5.1 (2.4)	1.9 (2.1)	2.9 (2.6)	.9 (1.0)	5.9 (3.3)	14.3 (6.6)	14.2 (5.7)	5.9 (2.6)	15.0 (6.9)	1.8 (2.8)	2.4 (2.9)
Employment and postsecondary education	22.3 (4.6)	38.6 (7.5)	5.3 (3.5)	17.9 (4.1)	35.9 (6.6)	34.5 (9.0)	15.1 (5.8)	24.0 (4.7)	13.6 (6.6)	8.0 (5.6)	9.4 (5.5)
Job training alone or with another activity	4.9 (2.4)	6.5 (3.8)	12.5 (5.1)	3.4 (2.0)	9.3 (4.0)	17.8 (7.2)	2.5 (2.5)	6.6 (2.7)	13.1 (6.5)	12.0 (6.8)	1.9 (2.6)

Source: NLTS2 Wave 2 parent/youth interviews.

Standard errors are in parentheses.

Demographic Differences in Engagement

Age. Although it might be reasonable to assume that older youth would be more likely to be engaged because they tend to have been out of school somewhat longer (see Chapter 2), research suggests that interpreting outcome differences across age groups can be complicated (Levine & Nourse, 1998). For instance, youth ages 15 through 18 who are out of school may not be engaged, but for very different reasons. Some may not have had the chance to attend a postsecondary institution because they only recently graduated. Others may not be engaged because dropping out of school at a young age hampers their ability to pursue both education and work. As one might expect, youth age 17 are less likely to be engaged than youth age 19 (58% vs. 84%, $p<.05$). In addition, youth ages 18 and 19 are more likely to be pursuing job training than youth age 16 (6% vs. 0%, $p<.05$), and youth age 19 are more likely to be engaged in both postsecondary education and employment than youth age 17 or 18 (29% vs. 5%, $p<.01$, and 15%, $p<.05$).

Gender. Research has demonstrated significant gender differences in the experiences of youth with disabilities since the mid-1990s. Many studies, including NLTS, found that female youth with disabilities had poorer outcomes than their male counterparts (Doren & Benz, 1998; Levine & Nourse, 1998; Fulton & Sabornie, 1994; Wagner, 1992). Female youth with disabilities were not as engaged, were less likely to be employed, made less money, and did not attend postsecondary school at the rates of their male counterparts, in part because many girls were bearing and raising children at a young age (Jay, 1991; Levine & Nourse, 1998; Wagner, 1992). However, among out-of-school youth represented in NLTS2, male and female youth are nearly equally likely to be engaged (79% and 81%, respectively), and there are no significant differences in the activities in which they are engaged.

Household income. NLTS2 findings suggest a link between income and engagement. Whereas almost all youth with disabilities (93%) from families with household incomes of more

than $50,000 a year are engaged, 70% of youth from families with household incomes of $25,000 or less a year are engaged ($p<.01$).

Race/ethnicity. There are no significant racial/ethnic differences in the level of engagement among youth with disabilities.

Summary

The out-of-school youth with disabilities who are the focus of this report have just entered the adult world. Many are just beginning to realize that they have a place and function in their community and have sought to engage actively in it by working, attending postsecondary school, or enrolling in job training programs. A large percentage of youth with disabilities (79%) are engaged in such activities, and 26% have been engaged in more than one activity since leaving high school. Employment is the most common activity, with about three-fourths working for pay since high school, including half (49%) for whom working is their sole activity. About one-fourth of youth with disabilities have enrolled in a postsecondary school at some time since leaving high school, with the large majority both working and going to school.

Although there are relatively large percentages of youth in every disability category who are engaged, the notable differences in the functional skills of youth in different disability categories pointed out in Chapter 2 probably influence levels and type of engagement. Youth with low functional cognitive and self-care skills are not as engaged as their more skilled counterparts. Consistent with this pattern, engagement is most common for youth with learning disabilities or speech, visual, or other health impairments; more than three-fourths of youth in these categories are engaged. In contrast, youth with mental retardation (52%), multiple disabilities (54%), autism (56%), and orthopedic impairments (59%) have the lowest rates of engagement.

Engagement for youth with disabilities has little to do with their demographic characteristics. Among the few significant findings is a higher likelihood of dual engagement (both employment and postsecondary education) for the oldest group of youth with disabilities. Also, youth from the wealthiest households are more likely to be engaged than youth from the poorest households.

Although rates of engagement are relatively high for out-of-school youth with disabilities as a whole and for most subgroups, it is troubling that approximately one in five (21%) of youth with disabilities have not engaged in their community in the early years after high school, although many are looking for work; few youth have formed families. Some in this group may be finding barriers to engagement or may not know how to advocate for the supports necessary to overcome them. As this group of youth with disabilities age, it will be important to examine whether and how their productive engagement changes with experience.

4. POSTSECONDARY EDUCATION PARTICIPATION OF YOUTH WITH DISABILITIES

By Lynn Newman

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). As the American economy becomes increasingly knowledge based, attaining a postsecondary education is more critical than ever (Carnevale & Desrochers, 2003). For example, only 20% of workers needed at least some college for their jobs in 1959; today, that number has increased to 56% (Carnevale & Fry, 2000).

Policies related to transition planning have been put in place to support students with disabilities in achieving postsecondary education and other post-high-school goals. Transition planning became a focus of federal policy for students with disabilities in the mid-1980s, when it was conceptualized as a "bridge" from school to young adulthood (Will, 1984). Language calling for transition planning was a new and important part of the Education of the Handicapped Act Amendments of 1990, and the subsequent 1997 amendments (IDEA '97) expanded those transition provisions. These provisions placed an emphasis on the student's voice in selecting transition goals, specifying that a "student's preferences and interests are considered" during transition planning [IDEA '97 Final Regulations, Section 300.344(b)(2)]. Indeed, NLTS2 has found that a postsecondary education is a primary post-high-school goal for more than four out of five secondary school students who have transition plans (Cameto et al., 2004). Perhaps reflecting this goal, youth with disabilities increasingly are taking rigorous academic courses in high school, including college-preparatory courses, such as a foreign language and science (Wagner, Newman, & Cameto, 2004).

However, even when their high school programs prepare them for postsecondary education, students with disabilities can encounter a variety of challenges in the transition from secondary to postsecondary school. Postsecondary schools are guided by a legal framework whose rights and responsibilities are different from those of secondary schools. When students leave high school, their education is no longer covered under the IDEA umbrella, but instead is under the auspices of two civil rights laws—Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (ADA) (Stodden, Jones, & Chang, 2002; Wolanin & Steele, 2004). Postsecondary students with disabilities are not entitled to a free appropriate public education, as in high school, nor is there a mandatory individualized education program (IEP) process to identify and provide for the supports they may need to succeed in school (Office for Civil Rights, 2004). In high school, "the burden is on the school to find and serve the student…in higher education the burden is on the student…to find the appropriate services and navigate through [their] education" (Wolanin & Steele, 2004, p. 27).

This understanding of the challenges posed by the postsecondary school environment for youth with disabilities raises the following questions:

- To what extent are youth with disabilities traversing the divide between secondary and postsecondary education and enrolling in postsecondary schools?

- How does their level of enrollment compare with that of their peers in the general population?
- What individual and family characteristics distinguish those who go on to postsecondary education from those who do not?
- To what extent do those who enroll receive supports and accommodations as part of their postsecondary education?

This chapter examines the postsecondary education experiences of youth with disabilities who have been out of secondary school up to 2 years. It focuses on participation in three types of institutions: postsecondary vocational, business, or technical schools; 2-year or community colleges; and 4-year colleges. As context for understanding the postsecondary education participation of youth with disabilities, the chapter begins by providing two perspectives: parents' expectations while youth were still in high school of their attending postsecondary school, and youth's transition goals for their early postschool years. The chapter then discusses youth's experiences with programs designed to help those who have dropped out of high school earn a high school diploma.[1] It continues with an examination of postsecondary education enrollment rates[2] and a presentation of multivariate analyses highlighting the relationships between individual and family characteristics[3] and postsecondary school enrollment. It concludes with findings regarding the experiences of postsecondary students with disabilities, including receipt of accommodations and modifications.

Parents' and Youth's Aspirations for Youth's Postsecondary Education

When NLTS2 out-of-school youth still were in secondary school, information was collected in telephone interviews about parents' expectations for the future postsecondary education of their adolescent children with disabilities. Youth's transition goals for their early postschool years were reported in a survey of school staff.

Parents' Expectations for Youth's Postsecondary Education

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.[4] Being aware of parents' postsecondary education expectations is important because they can help shape students' attitudes and behaviors toward their schooling as well as parents' own actions in support of students' learning. High educational expectations can encourage the educational attainments of youth (Catsambis, 2002; Patrikakou, 2004). In fact, parents' expectations for youth with disabilities have been shown to be

[1] Twenty-eight percent of the out-of-school youth with disabilities represented in this report left high school without a diploma or certificate of completion.

[2] Postsecondary education enrollment rates of youth with disabilities represented in NLTS2 are not compared with those reported for the original NLTS because age differences in the two samples make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the adjustments necessary for accurate comparisons between NLTS and NLTS2.

[3] Multivariate analyses do not include factors related to youth's school programs because complete data on those programs are not yet available.

[4] Possible responses were "definitely will," "probably will," "probably won't," and "definitely won't."

Exhibit 4-1
PARENTS' EXPECTATIONS FOR THE POSTSECONDARY EDUCATION OF YOUTH WITH DISABILITIES

	Percentage	Standard Error
Youth expected to:		
Attend school after high school		
Definitely will	25.8	3.5
Probably will	34.8	3.8
Probably or definitely won't	39.4	3.9
Complete a technical or trade school program		
Definitely will	13.9	2.8
Probably will	30.0	3.7
Probably or definitely won't	56.1	4.0
Graduate from a 2-year college		
Definitely will	10.4	2.4
Probably will	35.1	3.8
Probably or definitely won't	54.5	4.0
Graduate from a 4-year college		
Definitely will	7.5	2.1
Probably will	25.3	3.5
Probably or definitely won't	67.1	3.8

Source: NLTS2 Wave 1 parent interviews.

powerfully related to the youth's accomplishments in multiple domains, including postsecondary education (Wagner et al., 1993).

When they were in high school, three out of five youth with disabilities (61%) were expected by their parents to further their educations after high school, with 26% expected "definitely" and 35% "probably" to do so (Exhibit 4-1).[5] Parents were less confident that youth would complete postsecondary programs. About 44% of youth were expected "definitely" or "probably" to complete a technical or trade school program. Expectations regarding graduation from a 2-year college were similar. Fewer youth were expected to become 4-year-college graduates; about one-third were expected "definitely" or "probably" to graduate from a 4-year college.

Youth with disabilities were much less likely to be expected to attend school after high school than were their peers in the general population. Although parents of 61% of youth with disabilities had some expectation that youth would continue on to postsecondary education, almost 92% of their peers in the general population were expected to continue education after high school ($p<.001$).[6] Parents of youth with disabilities also were markedly less positive than other parents about youth's graduating from a 4-year college; 33% of those with disabilities were expected "definitely" or "probably" to complete a 4-year college program, whereas 88% of their peers in the general population were expected to receive a 4-year college degree ($p<.001$).

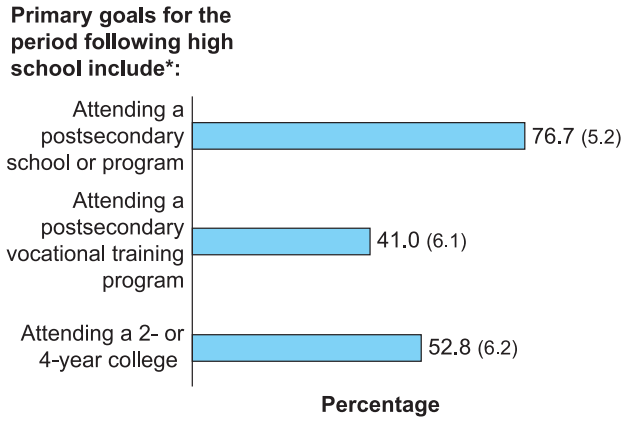
Youth's Goals for Postsecondary Education

There is a growing consensus that self-determination is important to positive outcomes for youth with disabilities (Karvonen, Test, Wood, Browder, & Algozzine, 2004). When students engage in self-determination behaviors, including decision-making, self-advocacy, and goal setting, they "have greater ability to take control of their lives and assume the role of successful adults" (Field, Martin, Miller, Ward, & Wehmeyer, 1998, p. 2). The postschool goals set by students, along with their families and the professionals who support them, are at the heart of

[5] Parents' expectations reported in this section are expectations for youth with disabilities who have left secondary school in the past 2 years. Please see Newman (2005) for parents' expectations for all youth with disabilities.

[6] Figures for the general population were calculated from the 1999 National Household Education Survey. Data are for 13- to 17-year-olds.

Exhibit 4-2
POSTSECONDARY EDUCATION GOALS OF YOUTH WITH DISABILITIES



Source: NLTS2 Wave 1 student's school program questionnaire.

* Respondent could indicate multiple goals; 17% specified goals related both to vocational training and 2- or 4-year college.

Standard errors are in parentheses.

effective transition planning and are a key result, as well as a demonstration, of self-determination skills. As part of the transition planning process, high school students with disabilities, in conjunction with their parents, teachers, and others, were asked to envision their futures and articulate their aspirations for the early period following high school. School staff most knowledgeable about students' school programs described these goals. More than three-quarters (77%) of students with disabilities were reported by school staff to have postsecondary education as a primary postschool goal (Exhibit 4-2).[7] Two out of five had a goal to attend a postsecondary vocational training program, and more than half (53%) had goals to attend a 2- or 4-year college.

Relationships between Parents' Expectations and Youth's Transition Plan Goals

A comparison of parents' expectations and youth's postsecondary education goals demonstrates that, overall, parents tend to hold somewhat lower expectations for their adolescent children's future postsecondary enrollment than the primary postschool goals indicated in youth's transition plans. Three out of five youth with disabilities (61%) were expected by their parents "definitely" or "probably" to continue on to postsecondary school, compared with more than three-quarters (77%, $p<.05$) of youth who had a goal of attending postsecondary school. A shared view of postsecondary education between parents and youth's transition goals is most common for those whose parents "definitely" expected them to attend postsecondary school. Almost 95% of high school students with disabilities who "definitely" were expected to continue their education at a postsecondary level also had postsecondary school goals. In contrast, 52% of those whose parents thought they "probably" or "definitely" would not attend postsecondary school indicated that postsecondary education was a primary goal for their early post-high-school years ($p<.001$).

[7] Postsecondary education goals reported in this section are for youth with disabilities who have been out of secondary school up to 2 years. Please see Cameto et al. (2004) for a description of transition goals for all youth with disabilities.

Exhibit 4-3
PARENTS' EXPECTATIONS AND YOUTH'S POSTSECONDARY EDUCATION TRANSITION PLAN GOALS, BY YOUTH'S SCHOOL-LEAVING STATUS

	School Completers	Dropouts
Percentage expected to:		
Attend school after high school		
Definitely will	32.4 (4.5)	6.9 (3.6)
Probably or definitely won't	29.0 (4.4)	66.4 (6.8)
Complete a technical or trade school		
Definitely will	16.6 (3.7)	5.5 (3.3)
Probably or definitely won't	51.3 (4.9)	68.7 (6.7)
Graduate from a 2-year college		
Definitely will	11.9 (3.1)	4.9 (3.2)
Probably or definitely won't	47.0 (4.8)	74.6 (6.4)
Graduate from a 4-year college		
Definitely will	9.3 (2.9)	2.7 (2.4)
Probably or definitely won't	62.3 (4.8)	80.6 (5.9)
Percentage with goal to:		
Attend a postsecondary school or program	79.7 (5.5)	59.8 (15.0)
Attend a postsecondary vocational training program	40.3 (6.7)	39.6 (14.9)
Attend a 2- or 4-year college	56.9 (6.8)	37.7 (14.8)

Sources: NLTS2 Wave 1 parent interviews and student's school program survey.

The category "probably will" is omitted from the exhibit.

Standard errors are in parentheses.

School-Leaving Status Differences in Parents' Expectations and Youth's Transition Plan Goals for Postsecondary Education

Parents' expectations are related to the way in which youth left high school (Exhibit 4-3). Parents of those who eventually dropped out of high school appeared to be aware that their children were struggling with school. When parents were asked about expectations for their children's future educational attainment, parents of those who 2 years later had left school by graduating or receiving a certificate of completion were more than four and one-half times as likely to expect that their adolescent children would definitely continue on to postsecondary school as were parents of those who left high school without finishing (32% vs. 7%, $p<.001$). Parents of youth who eventually dropped out of high school also were consistently less optimistic about their completing postsecondary school programs. More eventual dropouts than graduates were not expected to complete a technical or trade school program (69% vs. 51%, $p<.05$), a 2-year or community college (75% vs. 47%, $p<.001$), or a 4-year college (81% vs. 62%, $p<.05$). Youth's transition goals do not appear to be related to eventual school-leaving status, although this finding might be an artifact of fewer responses for youth who dropped out, resulting in large standard errors.

Disability Differences in Parents' Expectations and Youth's Goals for Postsecondary Education

Given the marked differences in the functional abilities of youth in different disability categories, reported in Chapter 2, it is not surprising that both youth in different disability categories and their parents had different aspirations for postsecondary education. Although some youth in all disability categories were expected to attend postsecondary school, students with orthopedic, speech, hearing, or visual impairments were among those most likely to be

expected to continue their education (Exhibit 4-4). Between about one-half and two-thirds of youth with orthopedic (49%), speech (57%), visual (64%), or hearing impairments (65%) were expected "definitely" to pursue postsecondary education. Youth with these impairments also were among those most frequently expected to graduate from a 2-year (26% to 32% "definitely will") or a 4-year college (26% to 36% "definitely will"). In contrast, only one-third of youth with other health impairments and 26% to 28% of those with learning disabilities, autism, or deaf-blindness were expected "definitely" to go on to postsecondary education ($p<.001$ comparing youth with learning disabilities and hearing or visual impairments). Youth with

Exhibit 4-4
PARENTS' EXPECTATIONS AND YOUTH'S POSTSECONDARY EDUCATION TRANSITION PLAN GOALS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage expected to:												
Get any postsecondary education												
Definitely will	27.1 (5.1)	57.0 (7.8)	8.3 (4.4)	17.7 (4.2)	65.4 (6.7)	64.0 (9.3)	48.8 (8.2)	32.9 (5.3)	28.5 (8.8)	19.6 (8.4)	12.2 (6.4)	26.2 (13.8)
Definitely or probably won't	37.1 (5.5)	18.1 (6.1)	66.9 (7.5)	43.3 (5.5)	12.3 (4.6)	5.7 (4.5)	20.8 (6.7)	33.0 (5.3)	35.8 (9.3)	27.9 (9.4)	58.3 (9.7)	42.3 (15.5)
Complete technical or trade school												
Definitely will	14.0 (4.0)	22.0 (6.6)	5.0 (3.5)	16.6 (4.2)	34.8 (6.8)	12.6 (6.6)	16.5 (6.2)	10.2 (3.5)	17.9 (7.5)	22.0 (8.9)	8.2 (5.5)	7.5 (8.8)
Definitely or probably won't	54.6 (5.7)	52.9 (8.0)	71.6 (7.3)	55.2 (5.7)	46.3 (7.1)	60.0 (9.7)	51.0 (8.3)	57.9 (5.7)	47.3 (9.8)	35.8 (10.2)	66.7 (9.4)	63.7 (16.1)
Complete 2-year college												
Definitely will	8.9 (3.3)	26.2 (7.0)	7.0 (4.1)	12.7 (3.8)	32.2 (6.6)	28.9 (8.8)	31.7 (7.7)	12.4 (3.8)	16.7 (7.3)	12.6 (7.2)	6.5 (4.9)	7.0 (8.3)
Definitely or probably won't	52.7 (5.8)	44.2 (7.9)	77.1 (6.8)	54.1 (5.6)	36.7 (6.9)	43.8 (9.6)	35.8 (7.9)	52.3 (5.7)	44.5 (9.7)	51.9 (10.8)	66.4 (9.4)	52.2 (16.2)
Complete 4-year college												
Definitely will	7.1 (3.0)	25.5 (7.1)	.8 (1.4)	5.3 (2.6)	26.8 (6.3)	35.6 (9.5)	28.7 (7.6)	12.8 (3.9)	9.3 (5.9)	5.8 (5.1)	4.6 (4.2)	22.6 (14.0)
Definitely or probably won't	65.2 (5.6)	43.6 (8.1)	82.8 (6.1)	75.5 (4.9)	40.7 (7.0)	18.0 (7.6)	43.3 (8.3)	63.5 (5.6)	72.5 (9.0)	69.8 (10.1)	88.3 (6.4)	69.9 (15.4)
Percentage with goal to:												
Attend a postsecondary school or program	82.4 (6.3)		26.9 (10.0)	79.7 (9.2)	87.6 (6.6)	99.6 (1.6)	85.9 (9.1)	78.1 (6.8)	66.6 (12.2)			
Attend a postsecondary vocational training program	44.6 (8.2)		22.7 (9.5)	43.0 (11.3)	27.4 (8.9)	10.4 (7.7)	16.9 (9.7)	36.6 (7.9)	15.2 (9.3)			
Attend a 2- or 4-year college	57.3 (8.2)		6.5 (5.6)	50.0 (11.4)	74.6 (8.7)	94.9 (5.5)	73.0 (11.5)	60.9 (8.0)	53.9 (12.9)			

Sources: NLTS2 Wave 1 parent interviews and student's school program survey.

Cells with 35 or fewer respondents are left blank.

The category "probably will" is omitted from the exhibit.

Standard errors are in parentheses.

mental retardation or multiple disabilities were among those least likely to be expected to attend postsecondary school; 67% and 58% of youth in these categories were not expected to pursue education after high school, and even higher percentages were thought unlikely to graduate from technical, 2-year, or 4-year postsecondary schools.

Mirroring their parents' higher expectations, youth with hearing, visual, or orthopedic impairments were more likely to have postsecondary education goals when they were in high school. For example, almost all of those with visual impairments had postsecondary education goals. Also similar to parents' expectations, many fewer youth with mental retardation (27%, $p<.001$) planned to attend postsecondary school.

Disability category differences also are apparent across types of postsecondary education programs. Students who were among the most likely to have goals for participation in one type of postsecondary institution frequently were among the least likely to have goals to enroll elsewhere. For example, students with visual or orthopedic impairments were among the most likely to have goals related to attending a 2-year or 4-year college (95% and 73%, respectively) but rarely planned to enroll in a postsecondary vocational program (10% and 17%, respectively).

Participation in High School Diploma/Certificate Programs

This section shifts the focus from expectations and goals for the period after high school to youth's actual post-high-school experiences. For the 28% of out-of-school youth with disabilities who left high school without finishing,[8] post-high-school education does not necessarily mean postsecondary-level education. Dropping out of secondary school is not an irrevocable decision; young people may still obtain a high school diploma by reentering a regular or alternative secondary school program or by taking an examination to obtain a General Educational Development (GED) credential. Whereas reviews of the research on GED holders have consistently found that they are less successful in the labor market than regular high school graduates, GED holders have been found to earn higher wages than uncredentialed dropouts (Boesel, Alsalam, & Smith, 1998; Tyler, 2003).

Since leaving high school, 29% of youth with disabilities who had dropped out of high school have taken one or more classes or tests to earn a high school diploma. Within 2 years of leaving secondary school, almost one-third (31%) of those participating in GED and other high school equivalency programs have received a high school diploma or certificate; those with a GED diploma or certificate constitute about 9% of out-of-school youth with disabilities who had dropped out of high school.[9]

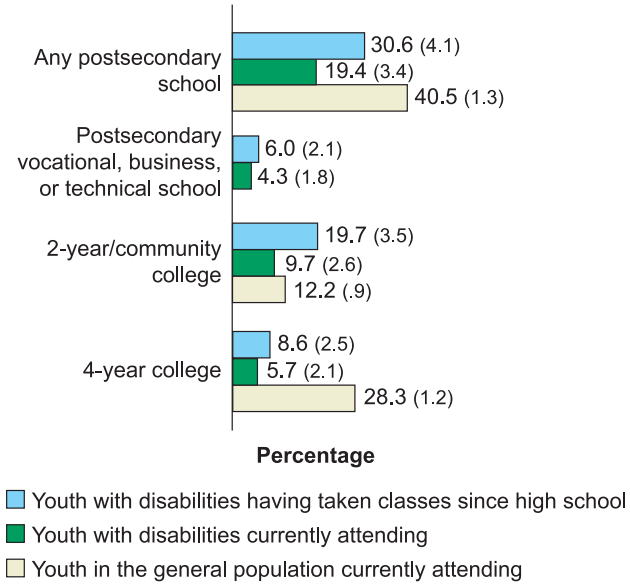
Postsecondary School Enrollment

Within 2 years of leaving high school, fewer youth with disabilities have continued on to postsecondary education than were expected to do so. Approximately one-third (31%) have taken postsecondary education classes since leaving high school (Exhibit 4-5), considerably fewer than the 77% who had postsecondary education goals when they were in high school and

[8] This includes 27% of youth who were reported to have dropped out and 1% who reportedly left school without finishing for other reasons (e.g., permanent expulsion). For convenience, the entire group will be referred to here as dropouts.

[9] There are too few dropouts in most disability categories to report findings separately by disability category.

Exhibit 4-5
POSTSECONDARY SCHOOL ENROLLMENT OF YOUTH WITH DISABILITIES AND YOUTH IN THE GENERAL POPULATION



Sources: NLTS2 Wave 2 parent/youth interviews and, for general population, NLSY 2000 data for 15- through 19-year-olds.

Standard errors are in parentheses.

the 61% whose parents expected them "definitely" or "probably" to further their education after high school ($p<.001$ for both comparisons). However, this is not to say that these expectations and goals will not be met in later years.

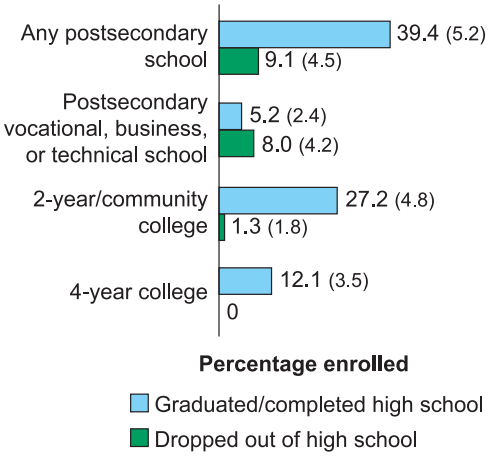
Although many who had postsecondary school aspirations while in high school have not yet attained those goals, youth who held postsecondary goals are more likely than others to be enrolled early on in a postsecondary school. Only 5% of those who did not envision attending postsecondary school have enrolled in 2-year colleges, compared with 36% ($p<.01$) of those with a goal of attending a 2- or 4-year college. Fewer than 1% of those who did not have postsecondary education goals have enrolled in 4-year colleges, compared with 23% ($p<.01$) of those who had this goal. The one exception to the relationship between goals and attendance relates to participating in postsecondary vocational training programs. There is no difference in enrollment rates in these types of programs between those who held this type of goal and those who did not.

Approximately one out of five out-of-secondary-school youth with disabilities (19%) currently are attending postsecondary school, a rate that is less than half that of their peers in the general population (40%, $p<.001$). More youth with disabilities have been enrolled in 2-year or community colleges since leaving high school than in other types of postsecondary schools. One out of five have taken classes from a 2-year or community college since leaving high school, compared with 6% who have participated in postsecondary vocational, business, or technical schools ($p<.001$) and 9% who have attended 4-year colleges ($p<.01$). The rate of current enrollment of youth with disabilities in 2-year/ community colleges is not significantly different from that of their peers in the general population (10% vs. 12%). This stands in sharp contrast to differences in enrollment rates at 4-year colleges. Similar-age youth in the general population are more than four and one-half times as likely as youth with disabilities to be currently taking courses at a 4-year college (28% vs. 6%, $p<.001$).

School-Leaving Status Differences in Postsecondary School Enrollment

Mirroring parents' expectations for postsecondary enrollment, secondary school graduates are markedly more likely to have enrolled in postsecondary school than are those who left high school by dropping out (Exhibit 4-6). High school completers are more than four times as likely as dropouts to continue on to postsecondary education, with 39% of graduates having attended

Exhibit 4-6
POSTSECONDARY SCHOOL ENROLLMENT SINCE LEAVING HIGH SCHOOL OF YOUTH WITH DISABILITIES, BY SECONDARY-SCHOOL-LEAVING STATUS



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

postsecondary school since leaving high school, compared with 9% of those who dropped out ($p<.001$). Rates of current enrollment mirror this sizable discrepancy, with 25% of high school graduates being currently enrolled in postsecondary classes, compared with 5% of dropouts ($p<.001$; not presented in exhibit).

Differences between high school completers and dropouts also are apparent for 2- and 4-year college enrollment. Graduates are clearly more likely than dropouts to have been enrolled at both types of schools since leaving high school (27% vs. 1%, $p<.001$; 12% vs. 0%, $p<.001$). The only exception is enrollment in postsecondary vocational, business, or technical schools, where dropouts are as likely as graduates to have taken classes.

Disability Differences in Postsecondary School Enrollment

Enrollment in postsecondary programs varies widely by disability category (Exhibit 4-7). Postsecondary attendance since high school ranges from 15% and 16% for those with mental retardation or multiple disabilities to 67% and 69% for those with hearing or visual impairments ($p<.001$). Variations in enrollment mirror the disability category differences described for youth's goals and parents' expectations for postsecondary education. Youth in disability categories that were the most likely to be expected "definitely" to pursue postsecondary education or to have a post-high-school goal of attending these types of schools—those with hearing, visual, speech, or orthopedic impairments—are consistently more likely to be attending postsecondary programs than youth in other categories. Youth with autism also are more likely to attend postsecondary school (46%) than are those in several other disability categories (e.g., 21% of youth with emotional disturbances, $p<.05$), although they are not among those most likely to be expected to attend. Youth with mental retardation are among those least likely to attend postsecondary school, as well among those least likely to be expected to do so.

Enrollment across disability categories varies more for some types of postsecondary school than others. Differences across categories are largest for enrollment in 4-year institutions. Youth with hearing or visual impairments are by far the most likely to attend these types of schools, with 37% and 42% attending, followed by those with speech and orthopedic impairments (21% and 18%, respectively). Few youth with autism (1%), multiple disabilities (1%), or emotional disturbances (4%), and no youth with mental retardation have taken classes at a 4-year college or university.

The variations noted for enrollment in 2-year colleges parallel those for 4-year colleges, although the differences between disability categories are not as marked. Youth with visual (42%), hearing (37%), or speech (28%) impairments still are among the most likely to have

Exhibit 4-7
POSTSECONDARY SCHOOL ENROLLMENT, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage who have enrolled since leaving high school in:											
Any postsecondary school	32.7 (5.9)	46.6 (8.6)	15.4 (6.6)	20.8 (4.7)	67.1 (7.7)	69.1 (9.2)	39.5 (8.6)	36.7 (5.8)	46.1 (11.5)	24.3 (10.7)	15.6 (8.1)
Postsecondary vocational, business, or technical school	5.0 (2.8)	1.4 (2.0)	11.0 (5.7)	7.4 (3.1)	13.3 (5.9)	8.0 (5.4)	11.6 (5.7)	6.3 (3.0)	20.8 (9.4)	5.3 (5.6)	7.1 (5.8)
2-year/community college	21.5 (5.2)	28.3 (7.8)	5.1 (4.0)	12.5 (3.9)	36.9 (8.3)	41.6 (9.9)	19.9 (7.2)	30.6 (5.6)	34.6 (11.3)	14.3 (8.9)	10.2 (5.8)
4-year college	9.7 (3.8)	20.8 (7.0)	.0	4.0 (2.3)	36.7 (8.3)	41.5 (9.9)	17.7 (6.7)	5.9 (2.9)	.9 (2.2)	6.5 (6.1)	1.0 (2.3)

Source: NLTS2 Wave 2 parent/youth interviews.

Note: Too few youth with deaf-blindness are attending postsecondary schools to report findings for them separately.

Standard errors are in parentheses.

attended, but many more youth in other categories have attended 2-year/community colleges as well. Rather than being among the least likely to have attended, as they are at 4-year colleges, youth with autism (35%) or other health impairments (31%) are among the most likely to have attended a 2-year school.

The variation across disability categories is somewhat different when examining attendance at a postsecondary vocational, business, or technical school. Youth with autism (21%), hearing impairments (13%), orthopedic impairments (12%), or mental retardation (11%) are among those most likely to have been enrolled in these types of schools.

Individual and Household Factors Related to Postsecondary School Enrollment

This chapter has described the postsecondary school enrollment of youth with disabilities as a group and separately among high school completers and dropouts and youth in each disability category. But such analyses do not provide information about the relationships between other factors and postsecondary enrollment or about variations by disability category when other factors are held constant. For example, there are more males among youth with emotional disturbances than among youth with visual impairments, so the extent to which the differences presented in Exhibit 4-7 are associated with differences in gender, not disability, is unclear.

To explore the independent associations between postsecondary school attendance and disability and other individual and household characteristics, two multivariate models of postsecondary school attendance were estimated. Dependent variables are:

- Enrollment in a 2- or 4-year college since leaving high school.
- Enrollment in a postsecondary vocational, business, or technical school since leaving high school.

Results from these analyses illuminate the association of each individual and household factor with the outcomes, controlling for all other factors in the analyses.[10]

Consistent with the bivariate analyses presented earlier, characteristics associated significantly with enrollment in a 2- or 4-year college differ from those associated with postsecondary vocational, business, or technical school enrollment (Exhibit 4-8). It is important to note that the factors related to enrollment in a 2- or 4-year college explain a statically significant portion of the variation in enrollment in that type of school (PI=.38[11]), whereas the same factors, and most others explored here, are not significant in explaining the variation in postsecondary vocational, business, or technical school enrollment (PI=.05), resulting in an inability to identify the factors related to enrollment in postsecondary vocational schools.

Disability and Functioning

When other factors in the analysis are held constant, relationships between disability and postsecondary enrollment are weaker for the most part than in bivariate analyses. Nevertheless, there still are important relationships. Consistent with the bivariate analyses presented earlier, multivariate analyses show that youth with visual impairments are the most likely to attend 2- or 4-year colleges. Holding constant other factors, they are 18 percentage points more likely than youth with learning disabilities to have enrolled in these types of postsecondary schools since leaving high school ($p<.05$). Independent of their primary disability category, youth with ADD/ADHD are more likely than youth without it to be enrolled in postsecondary vocational, business, or technical schools (6 percentage points, $p<.01$). The number of functional domains affected by disability[12] is unrelated to postsecondary enrollment, independent of other factors in the analyses.

As would be expected, youth with higher functional cognitive skills are more likely than those with lower abilities to be enrolled in 2- or 4-year colleges (13 percentage points, $p<.01$). However, multivariate analyses show no difference between the two groups in their probability of being enrolled in a vocational, business, or technical school. Neither do variations in self-care or social skills relate to postsecondary enrollment, independent of other factors.

Demographic Characteristics

Even when holding constant other factors, such as secondary-school-leaving status and length of time out of high school, age is related to enrollment in 2- or 4-year colleges. Not surprisingly, older youth are more likely than younger peers to have attended these types of schools; for example, 19-year-olds are 12 percentage points more likely than 17-year-olds to have attended a 2- or 4-year school, independent of other factors ($p<.05$). Males with disabilities are less likely than females to have attended 2- or 4-year colleges (6 percentage points, $p<.01$).

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[10] See Appendix A for definitions of the variables included in the analyses.

[11] Because logistic regression analyses do not produce the typical measure of explained variation (r^2), an alternative statistic was calculated for the postsecondary enrollment analyses, which indicates the "predictive improvement," or PI, that can be obtained by adding an independent variable to a logistic regression. Possible PI values range from 0 to 1 as do conventional r^2 statistics. See Appendix A for a more complete description of PI.

[12] The number of functional domains affected by disability indicates the breadth of potential impact of disability on the youth. Parents were asked to report whether youth experience limitations in health; vision; use of arms, hands, legs, and feet; speech production; understanding of speech; and participation in bidirectional communication.

Exhibit 4-8
DIFFERENCES IN POSTSECONDARY SCHOOL ENROLLMENT ASSOCIATED WITH INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS OF YOUTH WITH DISABILITIES

	Estimated Percentage-Point Difference in Probability of Having Attended a:		
	2- or 4-Year College	Postsecondary Vocational, Business, or Technical School	Comparison Categories
Disability and functioning			
Speech/language impairment	8.5	-4.4	vs. learning disability[a]
Mental retardation	-12.1	3.3	vs. learning disability
Emotional disturbance	-6.2	-1.7	vs. learning disability
Hearing impairment	6.5	-1.1	vs. learning disability
Visual impairment	**17.6***	-.1	vs. learning disability
Orthopedic impairment	-.3	2.4	vs. learning disability
Other health impairment	1.4	-1.6	vs. learning disability
Autism	14.2	2.7	vs. learning disability
Traumatic brain injury	-4.3	.0	vs. learning disability
Multiple disabilities/deaf-blindness	-1.2	6.5	vs. learning disability
ADD/ADHD	-1.0	**6.2****	Yes vs. no
Number of problem domains	-2.7	1.5	3 vs. 1 domain
Functional cognitive skills	**12.8****	-.8	High vs. low (15 vs. 7)
Self-care skills	4.3	2.7	High vs. low (8 vs. 4)
Social skills	.8	-1.5	High vs. low (27 vs. 17)
Demographics			
Age at Wave 2	**12.4***	2.2	19 vs. 17 years
Gender	**-5.8****	.0	Male vs. female
African-American	6.5	-1.9	vs. white
Hispanic	6.6	-3.0	vs. white
Household income	3.7	-.9	$55,000 to $59,999 vs. $20,000 to $24,999
Head of household education	**10.8***	-.7	BA or higher vs. less than high school
Youth experiences			
Secondary-school-leaving status	**18.4*****	1.6	Graduate vs. dropout
Year student left secondary school	**-21.4*****	-3.8	2002-03 school year vs. earlier
Youth ever held back a grade	**-15.5*****	-2.6	Yes vs. no
Youth has paid employment	1.8	.2	Yes vs. no

Exhibit reads: The probability of attending a 2- or 4-year college is 17.6 percentage points higher for youth with visual impairments than for youth with learning disabilities. The probability of attending a 2- or 4-year college is 12.8 percentage points higher for youth whose functional cognitive skills are high than for youth whose functional cognitive skills are low.

[a] Multivariate analyses require that for categorical variables, such as disability category, each category be compared with another specified category. Learning disability was chosen as the category against which to compare the relationships for other disability categories because it is the largest category and, therefore, most closely resembles the characteristics of youth with disabilities as a whole.

*p<.05; **p<.01; ***p<.001.

In this aspect they parallel their peers in the general population, among whom females have higher 2- or 4-year college enrollment rates than males.[13] Controlling for disability category and other youth differences, racial/ethnic background is not associated with differences in 2- or 4-year college enrollment for youth with disabilities. None of the demographic characteristics are related to the probability of having attended a postsecondary vocational, business, or technical school when other differences among youth are held constant.

Controlling for other factors, including head of household education, household income is not related to the likelihood of having enrolled in either type of postsecondary school. However, head of household education is related to enrollment in 2- or 4-year colleges, with higher levels of parental education associated with higher levels of youth's participation in postsecondary education. Youth who live in families in which the head of household has a bachelor's degree or higher are 11 percentage points more likely to continue on to a 2- or 4-year college than are their peers from families in which the head of household has not completed high school ($p<.05$). In this area, too, they are similar to their peers in the general population, among whom "a young person's likelihood of attending a four-year college increases with the level of their parents' education" (Choy, 2002, p. 5). This relationship may reflect the fact that parents' education often is related to other factors that can be advantageous to youth's postsecondary attainment, such as household income and parental knowledge about the academic preparation, course taking, and application procedures necessary for attending postsecondary schools (Horn & Nunez, 2000). For example, parents in the general population who have a bachelor's degree are more likely than less well-educated parents to accompany students on visits to prospective colleges, to seek financial aid information, and to attend programs on educational options (Choy, 2002).

Household income, head of household education, and family expectations for postsecondary school attendance (which were included in analyses not reported here) are not related to the probability of enrolling in a postsecondary vocational, business, or technical school.

Youth's Experiences

Prior school-related experiences have strong associations with enrollment in 2- or 4-year colleges. Students who had earlier difficulties with school, reflected either in their dropping out or in their ever having been held back a grade, are much less likely to choose to continue their education after they leave secondary school or to be admitted if enrollment in postsecondary education is pursued. Consistent with bivariate analyses presented earlier, high school graduation is associated with a higher likelihood of having attended 2- or 4-year colleges. Secondary school graduates are 18 percentage points more likely than dropouts to have attended a 2- or 4-year postsecondary school, independent of other differences between them ($p<.001$). Youth who have been held back a grade are 16 percentage points less likely than those who have never repeated a grade to have continued their education at a 2- or 4-year college ($p<.001$).

Not surprisingly, youth who have just recently left school are less likely than those who have been out of school longer to have enrolled in a 2- or 4-year college. Those who are out of secondary school for less than a few months have had much less time to pursue a postsecondary education than those who have been out of high school for a year or more, especially because

[13] Calculated for out-of-school 15- through 19-year-olds from the National Longitudinal Survey of Youth, 2000.

most sample youth were interviewed in the spring and summer, and many 2- and 4-year college programs do not begin until the fall. Students who left high school in the interview year—the 2002-03 school year—are 21 percentage points less likely than those who left earlier to have enrolled in a 2- or 4-year college ($p<.001$).

None of the school-related experiences included in the analyses—school-leaving status, length of time out of high school, and ever having been held back a grade—are associated with the likelihood of enrollment in postsecondary vocational, business, or technical programs. This finding mirrors bivariate findings in that youth who graduated from high school are no more likely than dropouts to have attended these types of schools.

Although it might be expected to compete with going to school, currently having a paid job is not related to differences in the probability of attending either a 2- or 4-year college or postsecondary vocational, business, or technical schools.

Postsecondary School Experiences

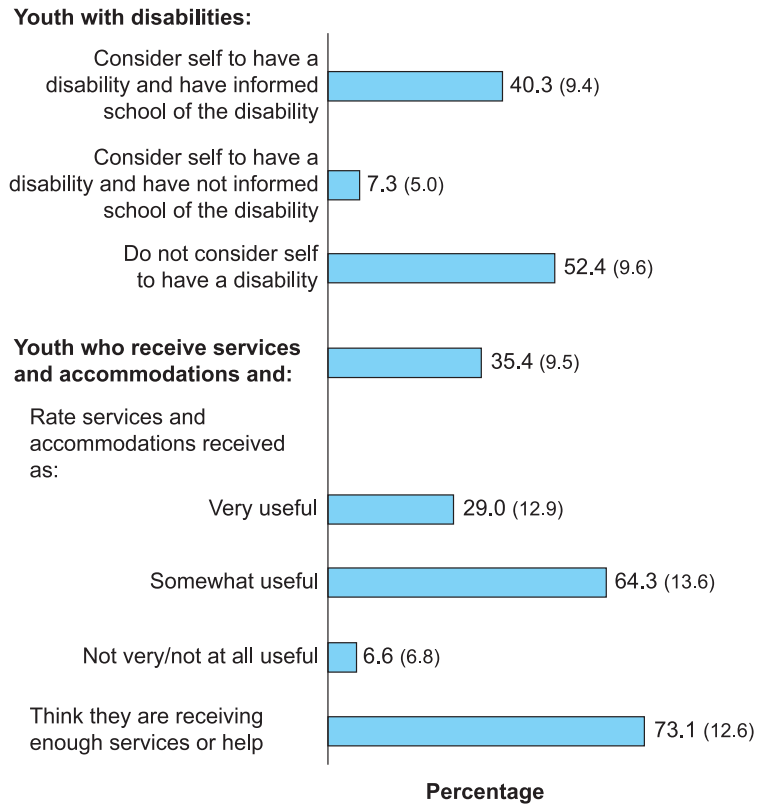
Although youth with disabilities who attend postsecondary schools share the experience of furthering their educations, the findings reported above indicate that they differ in the kinds of schools they attend. They also differ in other important aspects of their schooling. For example, postsecondary school is a full-time commitment for many youth with disabilities. Almost three-quarters (72%) of postsecondary students with disabilities attend school full-time, whereas more than one-fourth are part-time students. Similarly, 82% are enrolled in programs on a consistent basis, whereas 18% take classes some semesters or quarters but not others.

Receiving appropriate supports and accommodations can be critical to the postsecondary school success and retention of those who are enrolled in postsecondary school programs (Mull, Sitlington, & Alper, 2001; Pierangelo & Crane, 1997; Stodden & Dowrick, 2000; Stodden et al., 2002). Although a college is required to provide "appropriate academic adjustments as necessary to ensure that it does not discriminate on the basis of disability" (Office for Civil Rights, 2004, p. 2), accommodations that are a fundamental alteration of a program or that would impose an undue financial or administrative burden are not mandatory (Wolanin & Steele, 2004). Because schools interpret these guidelines differently, the types and extent of supports and accommodations available to students with disabilities vary widely (National Center for Education Statistics, 1999; Stodden et al., 2002).

As noted earlier, when students leave secondary school and enter postsecondary institutions, the responsibility for arranging for accommodations and supports shifts from the school to the students. At the postsecondary level, students with disabilities are expected to advocate for themselves (Stodden et al., 2002). "To receive accommodations, students with disabilities must disclose their disabilities and take the initiative in requesting accommodations" (Wolanin & Steele, 2004, p. ix). However, disclosure of a disability is voluntary. NLTS2 findings show that more than half (52%) of youth who received special education services while in secondary school and have gone on to postsecondary education do not consider themselves to have a disability by the time they have transitioned to postsecondary school (Exhibit 4-9). An additional 7% consider themselves to have a disability but choose not to disclose it to their postsecondary schools. Thus, 40% of postsecondary students with disabilities identify themselves as having a disability and have informed their postsecondary schools of that disability.

When students with disabilities are in high school, more than 90% of those in general education academic classes receive some type of accommodation, support, or other learning aid (Newman, Marder, & Wagner, 2003). With fewer than half identifying themselves as a person with a disability or choosing to disclose a disability, it is not surprising that receipt of services and accommodations is dramatically less common when youth with disabilities reach postsecondary school. Only slightly more than one-third (35%) of youth with disabilities in postsecondary school receive services, accommodations, or other learning aids from their schools, or 88% of those who have asked for assistance.

Exhibit 4-9
POSTSECONDARY ACCOMMODATIONS AND SERVICES OF YOUTH WITH DISABILITIES AND YOUTH'S PERCEPTIONS OF THEM



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

When those who were receiving services or accommodations were asked to rate how useful those supports were in helping them stay in school and do their best, 64% reported that the supports were "somewhat useful," and 29% rated them as being "very useful" (Exhibit 4-9).[14] Only 7% thought they were "not very" or "not at all useful." Students who received supports and accommodations were asked whether they thought they were receiving enough support. Although approximately three-quarters of the 35% of youth with disabilities who received supports and accommodations thought they were receiving enough support, 27% reported that they needed more help. The 65% of youth with disabilities who were attending postsecondary school and not receiving services or accommodations were not asked whether they needed additional support.

[14] Students who received services, accommodations, or other help from the school or obtained services on their own to help them in school were asked, "How useful have all the services and accommodations been in helping you stay in school and do your best there? Would you say…very useful, somewhat useful, not very useful, or not at all useful?"

Summary

This chapter focuses on the postsecondary education expectations and experiences of youth with disabilities who have been out of secondary school up to 2 years. When out-of-school youth still were in secondary school, three out of five were expected by their parents to further their educations after high school, but students' transition plan goals were even more optimistic. More than three-quarters had transition plans with postsecondary school attendance as a primary postschool goal. Disability category differences were fairly consistent between parents' expectations and transition plan goals. When they were still in high school, those with visual, hearing, or orthopedic impairments were more likely to plan to attend postsecondary school and to be expected by parents "definitely" to pursue postsecondary education. In contrast, those with mental retardation were among those least likely to be expected to attend postsecondary school, as well as those least likely to have postsecondary education transition plan goals.

Within 2 years of leaving high school, fewer youth with disabilities have continued on to postsecondary education than were expected to do so. Approximately one-third have taken postsecondary education classes since leaving high school, with one in five currently attending a postsecondary school. More youth with disabilities are enrolled in 2-year/community colleges than other types of postsecondary schools.

Although their current rate of attending postsecondary school is less than half that of their peers in the general population, their rate of current enrollment in 2-year/community colleges is not significantly different. Differences in enrollment between youth with disabilities and those in the general population are most apparent at 4-year colleges, where youth in the general population are more than four and one-half times as likely as youth with disabilities to be currently taking courses.

Not surprisingly, postsecondary school enrollment varies markedly by school-leaving status. High school completers are more than four times as likely as dropouts to continue on to postsecondary education. This difference is apparent for 2- and 4-year colleges but not for vocational, business, or technical schools, where dropouts are as likely as graduates to enroll.

Variations by disability category in 2- or 4-year college enrollment mirror variations in youth's postschool goals and parents' expectations. Those with hearing, visual, speech, or orthopedic impairments are more likely to attend these types of postsecondary schools than youth in several other disability categories. Youth with mental retardation are among those least likely to enroll in 2- or 4-year colleges. The variations across disability categories are somewhat different when examining attendance at postsecondary vocational, business, or technical schools. Youth with autism, hearing impairments, orthopedic impairments, or mental retardation are among those most likely to be enrolled in these types of schools.

Multivariate analyses indicate that several youth and household characteristics and experiences are associated with a higher probability of having enrolled in 2- or 4- year colleges. As would be expected, youth with higher functional cognitive skills are more likely than those with lower abilities to have enrolled in these types of schools, controlling for other factors. Young women with disabilities are more likely than young men to have continued their education at a 2- or 4-year college, and youth whose parents have a bachelor's degree or higher are more likely to have attended college than those from families in which the head of household

has not finished high school. Students who had earlier difficulties with school, reflected either in their dropping out or in ever have been held back a grade, are much less likely to have continued their education at a 2- or 4-year college. Only having ADD/ADHD was found to be associated with the likelihood of enrolling in a postsecondary vocational, business, or technical school, with a higher likelihood of enrollment being apparent for those with the disorder.

To receive accommodations at postsecondary schools, students must voluntarily disclose their disabilities. More than half of postsecondary school students who received special education services while in secondary school do not consider themselves to have a disability by the time they have transitioned to a postsecondary school. Not surprisingly, then, receipt of accommodations and supports is dramatically less common in postsecondary settings than in high school. Approximately one-third of youth with disabilities in postsecondary schools receive support, accommodations, or other learning aids from their schools.

More than a decade ago, NLTS found that many youth with disabilities delayed entry into postsecondary school for several years. Almost as many began their postsecondary studies 3 to 5 years out of school as began immediately after secondary school (Blackorby & Wagner, 1996). Future NLTS2 reports will ascertain whether this pattern continues to hold for youth with disabilities in the early 21st century.

5. EMPLOYMENT OF YOUTH WITH DISABILITIES AFTER HIGH SCHOOL

By Renée Cameto

Employment is the norm in American society, and it often begins at an early age. Approximately half of 12- and 13-year-olds in the general population report that they work (Rothstein & Herz, 2000), and by age 17, 86% of high school students do (Bureau of Labor Statistics, 2004a). The opportunity to hold a job while in high school can provide all youth with important experiences that help prepare them for taking on one of the most important adult roles—that of a productive adult worker. Employment experiences may be particularly important for youth with disabilities because they can provide a new outlet for demonstrating skills and competencies and for formulating friendships. An analysis of the employment experiences of youth with disabilities during high school (Marder, Cardoso, & Wagner, 2003) concluded that they are employed about as frequently as youth in the general population, and they demonstrate the same variations by gender, age, and other demographic factors that are common in the general population. For example, girls are more likely than boys to work in personal care jobs, including babysitting, whereas boys are more likely than girls to work in maintenance jobs (many of which are lawn mowing or gardening). While in high school, youth's jobs are typically part-time, and about half of working youth with disabilities earn the minimum wage or more.

Exiting high school can present increased opportunities and expectations for employment, and working can begin to resemble more closely adult roles for both youth with disabilities and youth in the general population. Although some youth go on to postsecondary education or training and do not work, and others both work and go to school, for many this is the time to take on the challenge of adulthood and begin to engage in employment as a means of support. Data for the general population demonstrate that 55% of 2003 high school graduates were employed by the following fall, including 42% of those who were going to college and 78% of those who were not (Bureau of Labor Statistics, 2004b). How do youth with disabilities compare?

This chapter examines changes in the employment experiences of youth with disabilities who have been out of high school up to 2 years. It begins by providing two perspectives on the employment of out-of-school youth with disabilities as context for understanding their experiences: their parents' expectations regarding their future employment prospects and their own transition goals related to employment. It continues with a discussion of changes in the current employment status of youth who had been out of school up to 2 years between the time of the Wave 1 interview, when the large majority of these youth were in secondary school, and the Wave 2 interview, when all these youth had left high school.[1] Results of multivariate analyses are reported, which indicate characteristics of youth with disabilities that are associated with a higher likelihood of employment.[2] The chapter then examines changes in youth's employment experiences, including:

[1] Employment rates of youth with disabilities represented in NLTS2 are not compared with those reported for the original NLTS because age differences in the two samples make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the adjustments necessary for accurate comparisons between NLTS and NLTS2.

[2] Multivariate analyses do not include factors related to youth's school programs because complete data on those programs are not yet available.

- Types of jobs held
- Number of hours worked
- Wages and benefits received.

Additional findings are reported for youth's current or most recent job in Wave 2 regarding:

- Duration of employment
- Accommodations received
- Job satisfaction.

Job search activities for unemployed youth also are described. Findings are reported for youth with disabilities as a whole for whom data are available for both Waves 1 (2001) and 2 (2003) of NLTS2 and for those who differ in their school-leaving status, primary disability classification while in secondary school, and selected demographic characteristics when differences are significant.

Parents' and Youth's Aspirations for Youth's Employment

Both parents' expectations for the future of their adolescent children with disabilities and youth's own preferences and goals can help shape their trajectory into the early postschool years. To document the perspectives of parents and youth with disabilities, information was collected when these out-of-school youth were still in secondary school about parents' expectations for youth's future employment and about their postschool employment goals. Parents reported their expectations in a telephone interview, and school staff provided information about youth's employment goals in a survey about transition planning.

Parents' Expectations for Youth's Employment

As is the case for postsecondary school participation, parents' expectations can be a powerful influence on the employment options, experiences, and outcomes of youth as they become young adults. When youth with disabilities were in high school, parents of those who were not currently working were asked "How likely do you think it is that [youth] eventually will get a paid job?" Parents reported that they thought their son or daughter "definitely" or "probably" would or "definitely" or "probably" would not get a paid job.[3] Because they had already achieved paid employment, youth who had a paid job at the time of the interview were included among youth who "definitely" were expected to have paid employment in the future.

At Wave 1, it was quite rare that parents did not expect their son or daughter to work for pay in the future; only 2% had parents who thought that their son or daughter "probably" or "definitely" would not get a paid job. In contrast, 90% of youth had parents who thought they "definitely" would get a paid job, and 8% had parents who thought they "probably" would. However, parents' expectations differed with the disability category of youth (Exhibit 5-1). Parents were less positive about the employment prospects of their sons or daughters with mental retardation, orthopedic impairments, autism, or multiple disabilities than those of youth with other kinds of disabilities. Compared with youth with learning disabilities, for example, a

[3] Employment did not require earning enough for the youth to support themselves, and it could include supported or sheltered employment.

Exhibit 5-1
PARENTS' EXPECTATIONS FOR YOUTH'S FUTURE PAID EMPLOYMENT, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage whose parents have the following expec-tations for youth's having future paid employment:											
Definitely will	93.1 (2.8)	91.2 (4.5)	76.0 (6.8)	87.0 (3.7)	93.5 (3.5)	86.5 (6.5)	75.8 (7.1)	92.7 (2.9)	75.2 (8.4)	84.3 (7.6)	65.8 (9.3)
Probably will	6.9 (2.8)	6.0 (3.7)	15.5 (5.8)	8.3 (3.0)	6.5 (3.5)	9.5 (5.6)	22.2 (6.9)	5.9 (2.6)	17.5 (7.4)	13.5 (7.1)	19.1 (7.7)
Definitely/probably won't	.0	2.8 (2.6)	8.6 (4.5)	4.7 (2.3)	.0	4.0 (3.8)	2.0 (2.3)	1.4 (1.3)	7.3 (5.0)	2.2 (3.1)	15.2 (7.0)

Source: NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

significantly smaller percentage of these youth had parents who expected them "definitely" to get a job (93% vs. 66% to 76%, $p<.05$ or $p<.01$). Youth with multiple disabilities were the most likely to have parents think they "probably" or "definitely" would not get paid employment (15%, $p<.05$ compared with youth with learning disabilities).

Youth's Post-High-School Employment Goals

Youth, too, have aspirations regarding their future employment. As part of the process of developing an individualized education program (IEP) for special education services during high school, youth, in conjunction with their parents, teachers, and others, identified their postschool goals. School staff most knowledgeable about students' school programs described these goals. Employment following high school is the postschool goal most commonly identified by secondary school students with disabilities (Cameto et al., 2004). Overall 70% identified some type of employment as a goal for the years after secondary school, including competitive (62%), supported (6%), or sheltered (3%) employment. Those who did not identify work as a postschool goal include a small percentage of youth with disabilities who did not expect to be able to work for pay but who may participate in other types of programs, and a larger percentage of youth who expected to postpone employment while pursuing postsecondary education or training.

There is wide variation among youth in different disability categories in the likelihood of having an employment goal and in the types of employment they hoped to have in their early adult years. The majority of youth with learning disabilities, mental retardation, emotional disturbances, other health impairments, or autism had an employment goal, ranging from 55% of youth with other health impairments to 94% of those with mental retardation. Exceptions are youth with hearing, visual, or orthopedic impairments, whose goals focused more on postsecondary education, as noted in Chapter 4. The percentage of youth with a transition goal of competitive employment ranges from 69% of youth with learning disabilities and 53% of

those with emotional disturbances to 20% of youth with autism (p<.05, Exhibit 5-2). Supported employment often was the employment goal for youth with mental retardation (38%) or autism (25%), but it was not a goal for any youth with visual impairments. Fewer than about 5% of youth in any disability category had a goal of sheltered employment, with the exception of 14% of youth with mental retardation or autism and 5% to 6% of youth with orthopedic or other health impairments, respectively.

Exhibit 5-2
EMPLOYMENT-RELATED TRANSITION GOALS OF YOUTH, BY DISABILITY CATEGORY

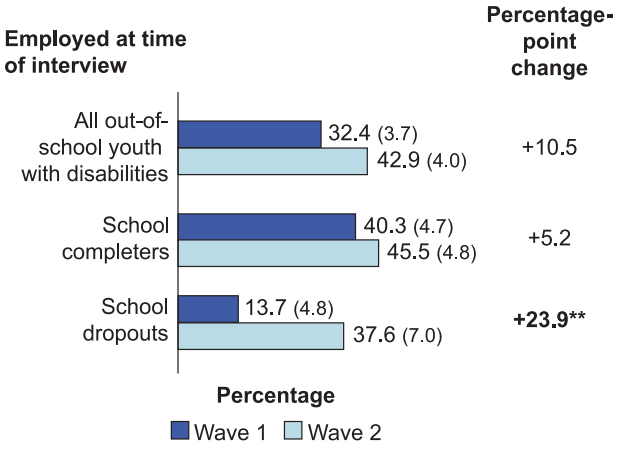
	Learning Disability	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism
Percentage with goal of:								
Competitive employment	68.7	41.0	52.9	34.2	28.9	25.6	43.2	20.2
	(7.7)	(11.1)	(11.4)	(9.5)	(11.4)	(11.3)	(8.1)	(10.4)
Supported employment	1.0	38.0	11.1	3.3	.0	11.9	6.0	25.1
	(1.7)	(11.0)	(7.2)	(3.6)		(8.4)	(3.9)	(11.2)
Sheltered employment	1.0	14.5	.0	2.9	3.1	5.0	5.9	15.6
	(1.7)	(8.0)		(3.4)	(4.3)	(5.7)	(3.8)	(9.4)

Source: NLTS2 Wave 1 parent interviews.

Note: There are too few out-of-school youth with speech impairments, traumatic brain injuries, or multiple disabilities who have data on transition goals to report those categories separately.

Standard errors are in parentheses.

Exhibit 5-3
CHANGES IN CURRENT EMPLOYMENT OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: **p<.01.

Standard errors are in parentheses.

Changes in Youth Employment

Interviews at both Waves 1 and 2 ascertained youth's current employment status (i.e., having "a paid job now, other than work around the house"). At Wave 1, while most of these youth were still in school, about one-third of currently out-of-school youth with disabilities (32%) were employed (Exhibit 5-3). At Wave 2, 43% of these same youth are currently working for pay outside the home, reflecting about a 10-percentage-point increase in employment as out-of-school youth age. Although that improvement in employment status is not significant for youth with disabilities as a whole, when examined by school-exit status,[4] significant

[4] Overall, 72% of out-of-school youth with disabilities completed high school by graduating or receiving a certificate of completion (see Chapter 2); 28% left school without finishing.

differences are found. Youth who dropped out of school have experienced a 24-percentage-point increase in current employment ($p<.01$, Exhibit 5-3), which eliminates the large disparity in employment rates that existed in Wave 1 between youth who eventually completed high school and those who did not. Nonetheless, neither high school completers nor dropouts work at nearly the same rate as youth of similar ages in the general population (63%, $p<.001$).[5]

The absence of a significant change over time in the likelihood that youth with disabilities currently work for pay is apparent among youth in each disability category (Exhibit 5-4). There have been no changes in employment among youth with visual or orthopedic impairments, and even the 22-percentage-point gain for youth with speech impairments does not reach statistical significance for this small group.

Exhibit 5-4
CHANGES IN CURRENT EMPLOYMENT OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage employed at time of interview											
Wave 1	35.5	36.3	17.0	27.2	39.2	28.3	16.7	35.1	26.0	20.9	12.8
	(5.4)	(7.8)	(5.9)	(4.9)	(6.9)	(8.7)	(6.3)	(5.3)	(8.4)	(8.3)	(6.4)
Wave 2	46.4	57.9	24.8	36.2	44.2	28.4	15.7	43.3	31.5	39.9	32.4
	(5.7)	(7.8)	(7.0)	(5.4)	(7.3)	(8.7)	(6.1)	(5.5)	(9.3)	(10.6)	(9.1)
Percentage-point change	+10.9	+21.6	+7.8	+9.0	+5.0	+.1	-1.0	+8.2	+5.5	+19.0	+19.6

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Standard errors are in parentheses.

Individual and Household Factors Related to Variations in Regular Paid Employment

Multivariate analyses were performed to investigate the independent relationships among several individual and household factors[6] with the likelihood that youth with disabilities have current paid employment. Analyses address the question "What individual and household characteristics and experiences are associated with variations in the likelihood that youth with disabilities will be employed in their early years after high school?" Because employment status is a dichotomous measure, logistic regression analysis is the appropriate multivariate analysis approach. It estimates the magnitude and direction of the relationship to the employment measure of each factor included in the analysis, simultaneously holding constant the other factors in the analysis.

[5] Calculated for 15- through 19-year-old out-of-school youth from the 2000 National Longitudinal Survey of Youth.

[6] Appendix B has a discussion of the measurement of these variables and the rationale for their inclusion in the analysis.

Several of the factors related to youth's disabilities, demographics, and experiences have significant relationships to the probability that out-of-school youth with disabilities are employed (Exhibit 5-5). Controlling for other factors, two types of disability are negatively related to holding a regular paid job; relative to youth with learning disabilities, those with visual or orthopedic impairments are 21 and 22 percentage points less likely to be employed, respectively ($p<.05$). Youth in other disability categories and youth with ADD/ADHD are not significantly

Exhibit 5-5
DIFFERENCES IN REGULAR PAID EMPLOYMENT ASSOCIATED WITH INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS OF YOUTH WITH DISABILITIES

	Estimated Percentage-Point Difference in Probability of Having Regular Paid Employment	Comparison Categories
Disability and functioning		
Speech/language impairment	13.0	vs. learning disability[a]
Mental retardation	-15.0	vs. learning disability
Emotional disturbance	-1.9	vs. learning disability
Hearing impairment	3.7	vs. learning disability
Visual impairment	**-21.4***	vs. learning disability
Orthopedic impairment	**-22.0***	vs. learning disability
Other health impairment	-3.1	vs. learning disability
Autism	2.0	vs. learning disability
Traumatic brain injury	-4.9	vs. learning disability
Multiple disabilities/deaf-blindness	5.4	vs. learning disability
ADD/ADHD	**-.3**	Yes vs. no
Number of problem domains	**-12.2***	3 vs. 1 domain
Functional cognitive skills	2.8	High vs. low (15 vs. 7)
Self-care skills	24.7	High vs. low (8 vs. 4)
Social skills	**14.0***	High vs. low (27 vs. 17)
Demographics		
Age at Wave 2	**22.6*****	19 vs. 17 years
Gender	8.5	Male vs. female
African-American	**-15.7****	vs. white
Hispanic	-8.3	vs. white
Household income	2.2	$55,000 to $59,999 vs. $20,000 to $24,999
Head of household education	2.7	BA or higher vs. less than high school
Youth experiences		
Youth expected to have paid job	-.7	Definitely will vs. probably will not
Secondary-school-leaving status	.8	Graduate vs. dropout
Year student left secondary school	1.2	2002-03 school year vs. earlier school year
Youth worked for pay at Wave 1	**18.7*****	Yes vs. no
Youth has attended any postsecondary education/training	-9.2	Yes vs. no

Exhibit reads: The probability of having regular paid employment is 21.4 percentage points lower for youth with visual impairments than for youth with learning disabilities. The probability of having regular paid employment is 14.0 percentage points higher for youth whose social skills are high than for youth whose social skills are low.

[a] Multivariate analyses require that for categorical variables, such as disability category, each category be compared with another specified category. Learning disability was chosen as the category with which to compare the relationships for other disability categories because it is the largest category and, therefore, most closely resembles the characteristics of youth with disabilities as a whole.

*p<.05; **p<.01; ***p<.001.

more or less likely to be employed than youth with learning disabilities. However, independent of the nature of their disability, youth whose disabilities affect a larger number of functional domains are less likely to be employed; for example, those with three domains affected are 12 percentage points less likely to be employed than those whose disability affects a single domain ($p<.05$). Having high social skills ratings, on the other hand, is associated with a 14-percentage-point higher likelihood of being employed, compared with youth with low social skills ratings ($p<.05$).

Two demographic factors are related to the frequency with which out-of-school youth with disabilities are employed, but in opposite directions. Age is among the strongest positive influences on the employment patterns of both youth in the general population (Herz & Kosanovich, 2000; Rothstein & Herz, 2000) and youth with disabilities. For example, 19-year-old youth with disabilities are 23 percentage points more likely to be employed than 17-year-olds ($p<.001$). Similarly, NLTS2 analyses of employment of secondary school youth with disabilities (Marder, Cardoso, et al., 2003) show that youth are more likely to be employed with each additional year of age. Race/ethnicity also has a strong independent relationship to the likelihood of employment for youth in the general population (National Longitudinal Survey of Youth, 1997) and those with disabilities. NLTS2 analyses show that African-American youth are 16 percentage points less likely to be employed than white youth ($p<.01$).

Only one measure of youth's prior experience included here relates to their likelihood of employment. Independent of other factors, youth who had held a job at the time of the Wave 1 interview are 19 percentage points more likely to be employed at Wave 2 than youth without that previous employment experience ($p<.001$).

This multivariate analysis explains a statistically significant portion of the variation in youth employment (PI=.18).[7] More than half the explanatory power of the model comes from the disability and functional characteristics of youth (10 percentage points). Demographic characteristics increase that power by another 4 percentage points. Youth's experiences increase the explained variation of the model by an additional 4 percentage points.

Characteristics of Employment of Out-of-School Youth with Disabilities

With this background regarding the rates at which out-of-school youth with disabilities hold paid jobs and the characteristics of youth that are associated with a higher rate of employment, the focus now shifts to understanding the characteristics of the jobs held by out-of-school youth with disabilities, including the types of work they do; the number of hours they work; the wages, benefits, and accommodations they receive; and their job satisfaction.[8]

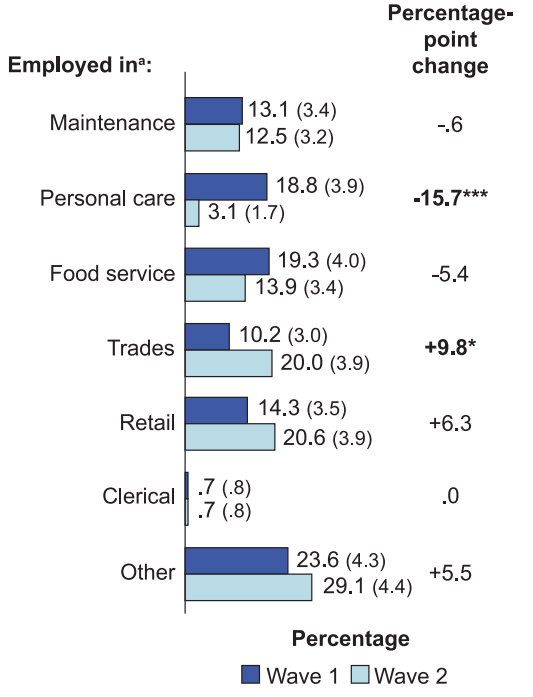
[7] Because logistic regression analyses do not produce the typical measure of explained variation (r^2), an alternative statistic was calculated for the employment analysis, which indicates the "predictive improvement," or PI, that can be obtained by adding an independent variable to a logistic regression. Possible PI values range from 0 to 1 in a similar way to conventional r^2 statistics. See Appendix A for a more complete description of PI.

[8] There are too few out-of-school working youth in most disability categories to report their job characteristics separately.

Types of employment. Youth with disabilities have experienced relatively few changes in the types of jobs they typically hold in the 2 years between Waves 1 and 2 (Exhibit 5-6); changes have been significant in only two fields of employment. There has been a 16-percentage-point decrease in the percentage of youth with personal-care jobs ($p<.001$), including such jobs as babysitting, so that only 3% of youth with disabilities work in these types of jobs in Wave 2. Also, youth have experienced a 10-percentage-point increase in working in trades ($p<.05$) (e.g., carpentry, plumbing), with 20% currently employed in such jobs.

Hours worked. With potentially more time available to work when youth with disabilities no longer attend high school, the number of hours they work has increased from Wave 1 to Wave 2 (Exhibit 5-7). Full time employment (i.e., 35 hours or more per week) has increased 18 percentage points ($p<.05$), to 40% of working youth who have been out of high school up to 2 years. The average hours worked per week also has increased by 6 hours, to 29 hours per week ($p<.05$).

Exhibit 5-6
CHANGES IN TYPES OF JOBS HELD BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES



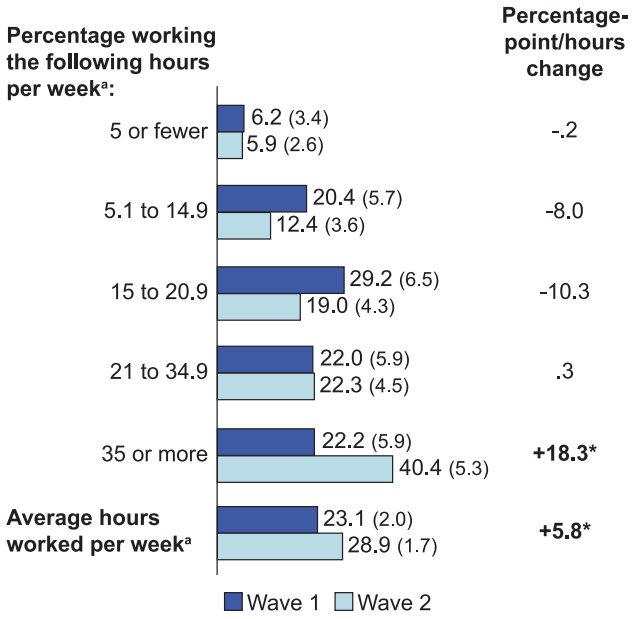
Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; ***p<.001.

Standard errors are in parentheses.

Exhibit 5-7
CHANGES IN HOURS WORKED BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES



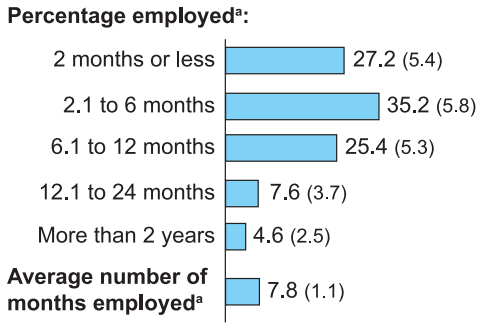
Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

Statistically significant difference in a two-tailed test at the following level: *p<.05.

Standard errors are in parentheses.

Exhibit 5-8
DURATION OF EMPLOYMENT OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES

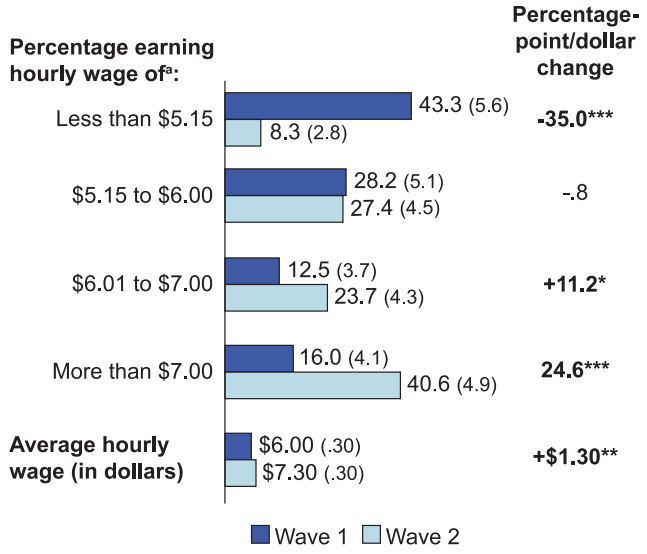


Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

Standard errors are in parentheses.

Exhibit 5-9
CHANGES IN WAGES OF WORKING OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<001.

Standard errors are in parentheses.

Job duration. The employment picture in the early transition years for all youth often is characterized by holding several jobs for brief periods. Similarly, long-term employment is fairly rare among youth with disabilities out of school for up to 2 years. More than 60% of out-of-school youth with disabilities have held their current or most recent job for 6 months or less (Exhibit 5-8). One-fourth have held their job for 6 months to a year, 8% for 1 to 2 years, and 5% for more than 2 years. Although the majority of working youth with disabilities have held their jobs for 6 months or less, the average number of months employed among youth with disabilities out of school for up to 2 years is almost 8 months, affected by employment of up to 4 years for a small percentage of youth.

This pattern of fairly short-term employment is consistent with the fact that more than one-third (35%) of out-of-school youth with disabilities have had more than one job because their previous job was temporary and had ended. More than half (52%) quit their previous job; few were fired or laid off (11% and 3%, respectively).

Wages and benefits. With shifts away from informal personal-care jobs, such as babysitting, toward professional trades and a greater time investment in the labor market, working youth with disabilities have experienced a significant growth in earnings (Exhibit 5-9). The percentage of working youth earning less than the minimum wage has decreased by 35 percentage points, to less than 10% ($p<.001$). This decrease has been accompanied by corresponding increases of 11 percentage points in the likelihood of earning $6.01 to $7.00 ($p<.05$) and 25 percentage points in the likelihood of earning more than $7.00 per

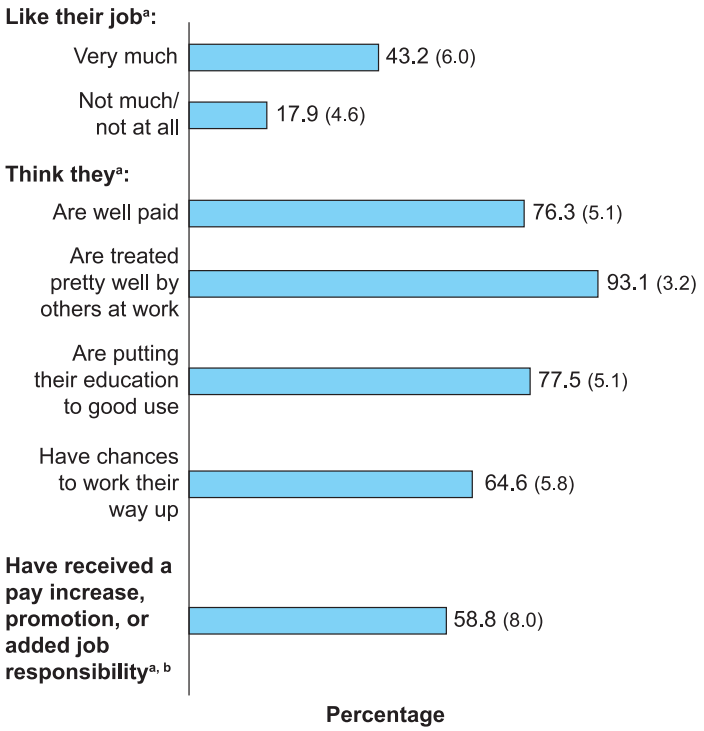
hour (p<.001). The average hourly wage has increased by $1.30 in a 2-year period, to $7.30 (p<.01).

In Wave 2, 30% of employed youth receive paid vacation or sick leave, health insurance, or retirement benefits associated with their employment. Paid vacation or sick leave (28%) and health insurance (23%) are part of the jobs of employed youth more often than are retirement benefits (14%).

Accommodations. The Americans with Disabilities Act (ADA) requires employers to provide reasonable accommodations to employees with disabilities who are otherwise qualified for their jobs. However, not all disabilities are apparent to employers, nor do they all have implications for job performance. NLTS2 has investigated the extent to which employers of youth with disabilities are aware of those disabilities and provide accommodations for them.

The large majority (84%) of youth with disabilities who have been out of secondary school up to 2 years, including the two-thirds of out-of-school youth who do not consider themselves to have a disability at all, reportedly have employers who are not aware of their disabilities. As one might expect, however, employers' awareness is much more common for youth with some kinds of disabilities than for others. Youth with hearing, visual, or orthopedic impairments are much more likely to have employers who are aware of their disability (51%, 64%, and 41%, respectively) than youth with learning disabilities (15% vs. 51% or 64%, p<.001, and vs. 41%, p<.05). Nevertheless, only 4% of youth overall reported or were reported to be receiving "any accommodations or other help from [your/his/her] employer because [you/he/she] [have/has] any kind of learning problem, disability, or other special need." The rates of receiving accommodations at work range from 2% to 10% for most categories of youth; only those with visual impairments are more likely than youth in other disability categories to receive accommodations on the job (22% vs. 2% of youth with emotional disturbances, p<.05).

Exhibit 5-10
JOB SATISFACTION OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

[b] For youth employed more than 6 months.

Standard errors are in parentheses.

Job satisfaction. Overall, most youth with disabilities who have been employed in their early years out of school hold positive feelings about their employment experiences. More than 40% said they liked their current job or liked their most recent job "very much," and fewer than 20% reported dissatisfaction with their job (Exhibit 5-10). All but a few believe they have been treated well by others

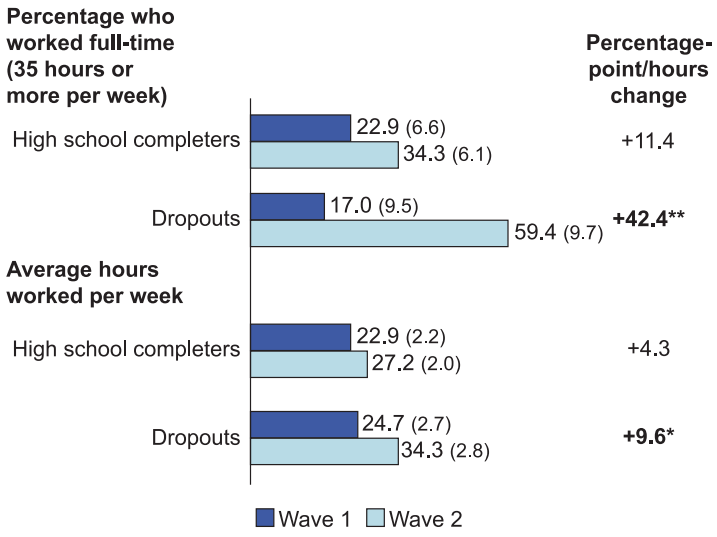
at work (93%). About three-fourths (78%) believe their job has put their education to good use, and a similar proportion (76%) reported they have been well paid. Sixty-five percent of youth who have been employed feel that they have had chances to work their way up to a better position. Among those who have held a job for more than 6 months, 59% have been promoted, taken on greater responsibility, or received a pay increase.

School-Leaving Status Differences in Changes in Employment Characteristics

Although the multivariate analysis reported earlier in this chapter showed no significant difference in the rate of current paid employment between high school completers and dropouts, independent of other group differences explored here, it is possible that secondary-school-leaving status could have an impact on the characteristics of the jobs out-of-school youth with disabilities obtain. NLTS2 investigated whether changes in the job characteristics of these youth between Waves 1 and 2 differ for school completers and dropouts and found no differences in the duration of employment, the way youth left their previous job, benefits or accommodations received, or job satisfaction. The changes that do differ for the two groups are outlined below.

Types of employment. The change in the likelihood that youth with disabilities have a personal-care job differs between high school completers and dropouts. Completers are 16 percentage points less likely to hold personal-care jobs at Wave 2 than at Wave 1 (p<.01). Although there has been a similar decrease in dropouts holding personal-care jobs (15 percentage points), the difference is not statistically significant for the smaller group of dropouts.

Exhibit 5-11
CHANGES IN HOURS WORKED BY YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



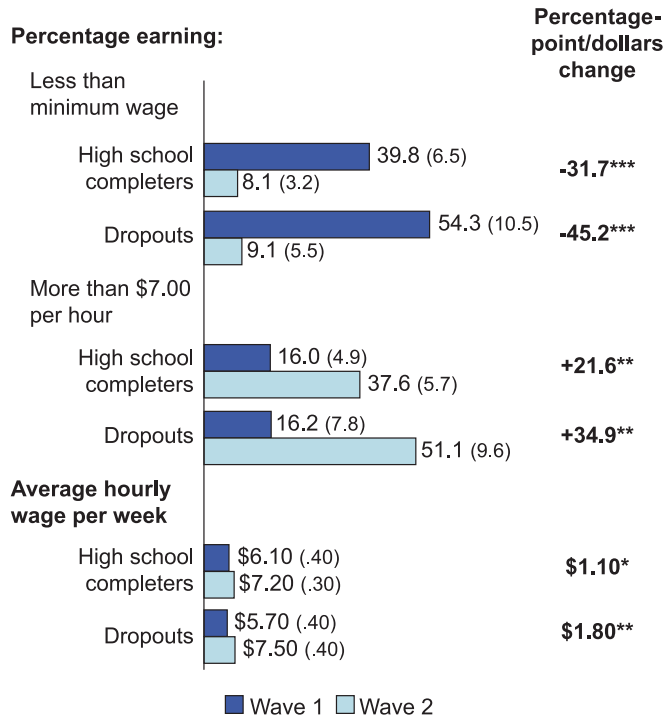
Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Hours worked. Only dropouts have experienced an increase in full-time employment, with a gain of 42 percentage points (p<.01; Exhibit 5-11), so that at Wave 2, significantly more dropouts than school completers are working full-time (59% vs. 34%, p<.05). A similar pattern is found for completers and dropouts when considering the average hours worked in a week. Youth who have dropped out of school show an average increase of almost 10 hours per week (p<.05), to achieve an average of 34 hours per week. High school completers have realized no significant increase during the time interval, so that they average significantly fewer hours per week (27, p<.05).

Exhibit 5-12
CHANGES IN HOURLY WAGES OF WORKING YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Wages. The improvement in wages demonstrated for out-of-school youth with disabilities as a whole is apparent among both high school completers and dropouts (Exhibit 5-12). The percentage of youth working for less than minimum wage decreased for both groups, so that fewer than 10% of each group work for less than minimum wage at Wave 2. However, the improvements in wages are significantly larger among dropouts. For example, high school completers have experienced a 32-percentage-point decrease in the likelihood of earning less than the minimum wage, whereas dropouts show a 45-percentage-point decrease ($p<.001$ for both completers and dropouts). Similarly, there has been a significant increase in the percentage of youth in both groups earning more than $7.00 an hour. At Wave 1, the percentage of both groups earning this amount was the same (16%). A 22-percentage-point increase for school completers results in 38% earning more than $7.00 an hour in Wave 2; a 35-percentage-point increase for dropouts ($p<.01$ for both groups) brings to 51% the proportion of youth who earn that amount. Similarly, average hourly wages have increased by $1.10 for completers and by $1.80 for dropouts ($p<.05$ and $p<.01$, respectively).

Demographic Differences in Changes in Employment Characteristics

Age

As noted in Chapter 2, the age of youth is related to the number of years they have been out of school such that older youth are more likely to have been out of school longer than younger peers, a fact that could influence employment. In fact, the multivariate analysis presented earlier demonstrates a significant relationship between age and the likelihood that out-of-school youth hold a paid job. NLTS2 also has investigated whether youth's age is associated differentially with changes in the variety of employment characteristics addressed in this chapter. Differences are noted regarding types of employment, hours worked, and wages earned.

Exhibit 5-13
CHANGES IN HOURS WORKED BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2:		
	15 through 17	18	19
Percentage who worked full-time (35 hours or more per week)[a]			
Wave 1	--	9.8	30.6
	--	(6.6)	(8.9)
Wave 2	22.7	45.0	39.6
	(12.6)	(8.2)	(7.9)
Percentage-point change	--	**+35.2*** **	+9.0
Average hours worked per week[a]			
Wave 1	--	20.3	24.1
	--	(2.3)	(2.3)
Wave 2	24.1	29.2	29.6
	(3.9)	(2.6)	(2.5)
Change in hours	--	**+8.9***	+5.5

Source: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

-- Sample size too small to be reported.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; ***p<.001.

Standard errors are in parentheses.

Types of employment. Both 18- and 19-year-olds are less likely to work in personal-care jobs at Wave 2 than they were at Wave 1, reducing the percentage employed in these types of jobs to 2% and 3%, respectively (16- and 14-percentage-point decreases, p<.01 and p<.05, respectively); younger peers have not experienced a similar decline. The only other notable change is an 18-percentage-point increase in retail employment among 19-year-olds (p<.05), bringing the proportion employed in this type of job to 28%.

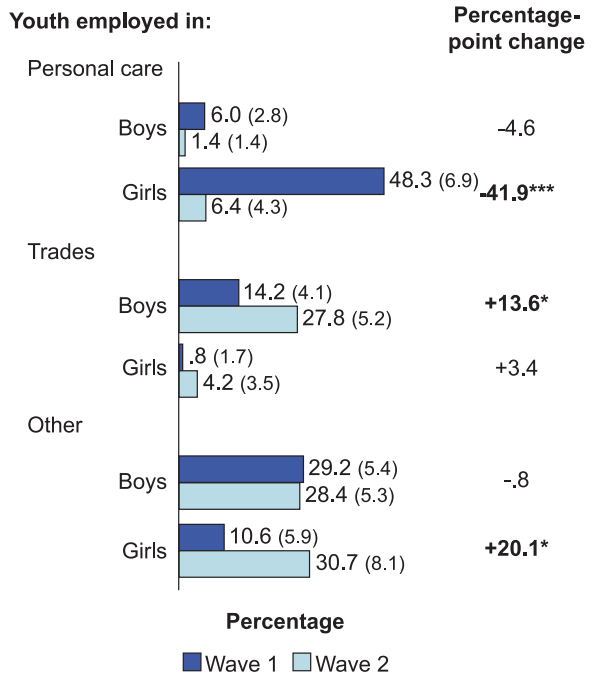
Hours worked. Youth with disabilities experience an increase in hours worked soon after leaving high school (Exhibit 5-13). Youth who are 18 years old at Wave 2 were typically still in high school or only recently out of school at Wave 1, and only 10% worked full-time then. By Wave 2, they have experienced a 35-percentage-point increase in full-time employment (p<.001). On the other hand, at Wave 1, 31% of 19-year-olds, who were likely to have been out of school longer, already were working full-time, so that the 9-percentage-point increase they have realized is not significant. A similar relationship between the two age groups is found for the average number of hours worked per week. Eighteen-year-olds have experienced a 9-hour average increase from Wave 1 to Wave 2 (p<.05), a level of change not realized by 19-year-olds,although they both have achieved a similar average number of hours worked per week (29 and 30 hours).

Wages. Youth in all age groups have experienced a decrease in the percentage earning less than minimum wage—45 percentage points for 15- through 17-year-olds (p<.01), 39 points for 18-year-olds, and 30 points for 19-year-olds (p<.001). However, only 18- and 19-year-old youth with disabilities show significant increases in earning more than $7.00 per hour (22 and 28 percentage points, p<.05 and p<.01, respectively). These age groups also show the only significant increase in their average hourly wage ($1.30 and $1.20, p<.05, respectively); the $1.80 increase noted for the younger age group does not attain statistical significance.

Gender

In the general population, boys and girls have similar employment rates, but gender is related to a variety of differences in employment characteristics, such as type of job and wages (Rothstein, 2001; Herz & Kosanovich, 2000). However, the multivariate analysis reported earlier in this chapter does not show a similar significant relationship with the likelihood of employment among out-of-school youth with disabilities. Yet, the gender of out-of-school youth with disabilities is associated with differences with the following job characteristics.

Exhibit 5-14
CHANGES IN TYPES OF JOBS HELD BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY GENDER



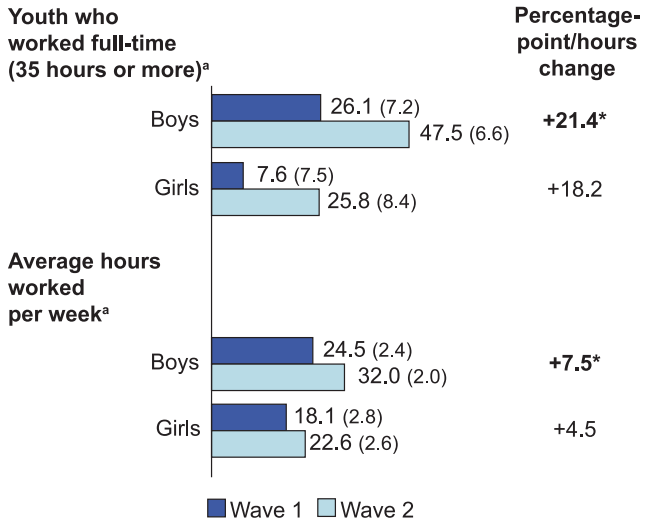
Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; ***p<.001.

Standard errors are in parentheses.

Types of employment. Boys and girls with disabilities have experienced changes between Waves 1 and 2 in the types of jobs held (Exhibit 5-14). Specifically, the large decrease in youth with disabilities working in personal care jobs, such as babysitting, has occurred entirely among girls (42 percentage points, p<.001). Although most jobs held by girls at Wave 1 were in personal care, with this decline, the previously large difference between boys and girls holding these types of jobs no longer exists at Wave 2, suggesting that the range of employment options for girls may have expanded. A 20-percentage-point increase in "other" types of jobs, which include a variety of service-sector jobs, such as working in animal care or a movie theater, also has been realized by girls (p<.05). In contrast, the increase in out-of-school youth with disabilities working in trades has occurred entirely among boys; they have experienced a 14-percentage-point increase in such jobs, perhaps signaling their entrance into skill-based employment (p<.05).

Exhibit 5-15
CHANGES IN HOURS WORKED BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY GENDER



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

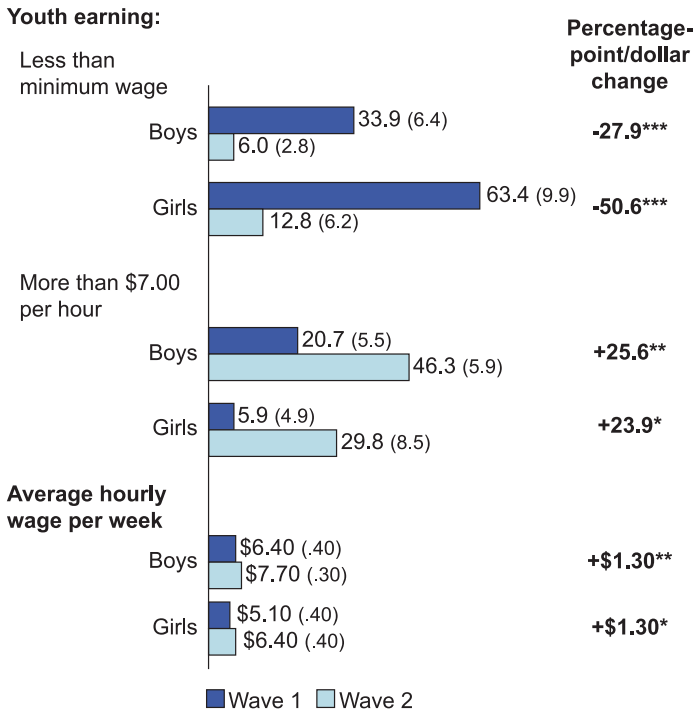
Statistically significant difference in a two-tailed test at the following level: *p<.05.

Standard errors are in parentheses.

Hours worked. In the 2 years between Waves 1 and 2, the average number of hours worked per week and the percentage of youth with disabilities working full-time increased for both boys and girls; however, the gains are significant only for boys (Exhibit 5-15). At Wave 2, the percentage of boys working full-time has increased by 21 percentage points (p<.05), to nearly one-half. Although the percentage-point gain in the frequency of working full-time is nearly the same for girls, it is not statistically significant for this smaller group and results in only about one-fourth of employed girls working full-time. The average number of hours boys work in a week has increased by 8, to 32 hours per week (p<.05).

Wages. Changes in earning power between Waves 1 and 2 among out-of-school youth with disabilities have been dramatic for both genders (Exhibit 5-16). The percentages earning less than minimum wage has dropped by 28 percentage points for boys and 51 percentage points for girls (p<.001). This particularly large decrease for girls has eliminated the significant difference in earning less than the minimum wage that existed in Wave 1, so that 6% and 13% of boys and girls, respectively, earn less than minimum wage at Wave 2. Boys and girls have experienced similar increases in the percentage earning more than $7.00 per hour (26% and 24%, p<.01 and p<.05, respectively), and both have seen an increase of $1.30 per hour in average earnings (p<.01 for boys, p<.05 for girls), although girls continue to earn less than boys at Wave 2 ($6.40 vs. $7.70, p<.05), as they did at Wave 1 ($5.10 vs. $6.40, p<.05).

Exhibit 5-16
CHANGES IN WAGES OF OUT-OF-SCHOOL WORKING YOUTH WITH DISABILITIES, BY GENDER



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Household Income and Race/Ethnicity

In the general population, youth from higher-income households tend to earn higher wages (Huang, Pergamit, & Shkolnik, 2001; Rothstein, 2001, Johnson & Lino, 2000). Higher wages also are associated with race/ethnicity in the general population (Gardecki, 2001; Huang et al., 2001; Rothstein, 2001), and multivariate analyses reported earlier in this chapter confirm that African-American youth with disabilities are less likely than white peers to be employed, independent of other differences between them, although no relationship was found between household income and the likelihood of employment. NLTS2 has investigated whether there are relationships between household income or race/ethnicity and the various job characteristics presented above for youth with disabilities.

Types of employment. The decrease from Wave 1 to Wave 2 in personal-care jobs held by youth with disabilities overall is seen only among youth in the two higher income groups (20 and 23 percentage points, p<.05 and p<.01; Exhibit 5-17). Significant decreases from Wave 1 to Wave 2 in the percentage of youth with disabilities holding personal-care jobs also are found among white youth (14 percentage points, p<.01) and Hispanic youth (35 percentage points, p<.05). Increases in employment in the trades between Wave 1 and Wave 2 are not significant for any income group. However, white youth do show an increase in working in the trades (13 percentage points, p<.05).

Hours worked. The increase in the percentage of youth with disabilities working full-time ranges from 17 to 22 percentage points across household income groups but does not reach statistical significance for any group (Exhibit 5-18). Youth from medium-income households, however, have experienced a 10-hour increase in their weekly hours worked, so that their weekly average has reached 34 hours (p<.05). The increase in average weekly hours worked is significant only for white youth (8 hours, p<.01), among whom the likelihood of working full-time has increased 24 percentage points (p<.05), to reach 46% working full-time.

Exhibit 5-17
CHANGES IN THE TYPES OF JOBS HELD BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage employed in:						
Personal care						
Wave 1	8.6	21.4	25.9	16.4	19.1	38.8
	(5.3)	(8.4)	(7.2)	(4.3)	(10.7)	(15.6)
Wave 2	5.4	1.1	2.8	2.7	1.9	4.0
	(3.9)	(2.1)	(2.6)	(1.9)	(3.2)	(5.8)
Percentage-point change	-3.2	**-20.3***	**-23.1****	**-13.7****	-17.2	**-34.8***
Trades						
Wave 1	10.7	15.1	9.7	11.1	5.5	9.5
	(5.8)	(7.4)	(4.9)	(3.7)	(6.2)	(9.4)
Wave 2	24.9	13.5	19.6	24.3	10.4	14.4
	(7.5)	(6.8)	(6.3)	(5.0)	(7.2)	(10.4)
Percentage-point change	+14.2	-1.6	+9.9	**+13.2***	+4.9	+4.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Exhibit 5-18
CHANGES IN THE HOURS WORKED BY OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage who worked full-time (35 hours or more)[a]						
Wave 1	16.0	22.7	23.7	22.5	19.5	--
	(11.0)	(12.1)	(8.9)	(6.7)	(16.2)	--
Wave 2	37.2	45.1	40.5	46.3	31.3	30.6
	(9.1)	(11.1)	(8.9)	(6.6)	(11.6)	(15.0)
Percentage-point change	+21.2	+22.4	+16.8	**+23.8***	+11.8	--
Average hours worked per week[a]						
Wave 1	26.6	23.5	21.7	22.4	23.7	--
	(6.3)	(3.1)	(2.6)	(1.9)	(3.3)	--
Wave 2	27.2	33.7	27.6	30.5	28.0	24.1
	(3.4)	(3.4)	(2.5)	(1.9)	(4.7)	(4.9)
Change in number of hours	+.6	**+10.2***	+5.9	**+8.1****	+4.3	--

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

[a] For youth's current or most recent job.

-- Sample size too small to be reported.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Wages. Youth from all household income groups have experienced a significant increase in earning power between Waves 1 and 2 (Exhibit 5-19). The percentage of youth earning less than minimum wage has decreased by 37 percentage points, 41 percentage points, and 27 percentage points for youth from the lowest to highest household income groups ($p<.01$, $p<.001$, $p<.01$, respectively). However, increases in wages of $7.00 or more per hour have been experienced only by youth from the highest household income group (28 percentage points, $p<.05$).

Significant decreases in the percentage earning less than minimum wage are noted for white youth (33 percentage points, $p<.001$) and Hispanic youth (61 percentage points, $p<.01$), resulting in single-digit percentages in Wave 2. Increases in earning more than $7.00 per hour reach significance for white youth (28 percentage points, $p<.001$). Similarly, white youth are the only group whose increase in their average hourly rate is significant ($1.60, $p<.001$).

Exhibit 5-19
CHANGES IN WAGES OF WORKING OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

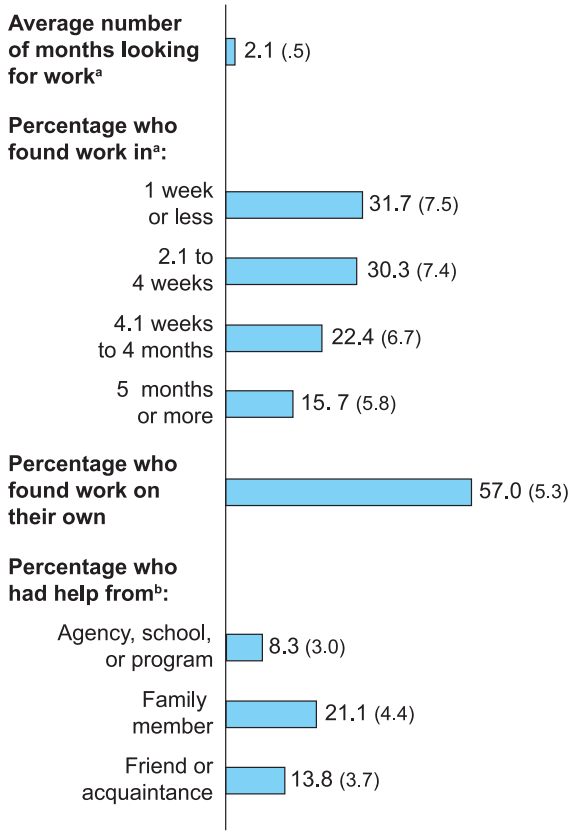
	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage earning:						
Less than minimum wage						
Wave 1	48.8	45.8	34.3	39.0	51.7	69.1
	(11.1)	(11.5)	(8.4)	(6.2)	(18.5)	(16.9)
Wave 2	12.2	5.1	7.7	6.1	13.9	8.4
	(5.7)	(4.4)	(4.5)	(2.8)	(8.8)	(8.6)
Percentage-point change	**-36.6****	**-40.7*****	**-26.6****	**-32.9*****	-37.8	**-60.7****
More than $7.00 per hour						
Wave 1	13.5	15.3	20.9	18.1	5.8	7.0
	(7.6)	(8.3)	(7.2)	(4.9)	(8.7)	(9.3)
Wave 2	32.3	29.9	49.1	45.8	31.0	24.6
	(8.2)	(9.2)	(8.4)	(5.9)	(11.8)	(13.3)
Percentage-point change	+18.8	+14.6	**+28.2***	**+27.7*****	+25.2	+17.6
Average hourly wage per week						
Wave 1	$6.20	$5.60	$6.30	$6.00	$6.30	$5.70
	($.80)	($.60)	($.40)	($.30)	($1.60)	($1.00)
Wave 2	$6.90	$7.10	$7.50	$7.60	$6.50	$6.60
	($.40)	($.50)	($.50)	($.30)	($.60)	($.80)
Dollar amount change	+$.70	+$1.50	+$1.20	**+$1.60*****	+$.20	+$.90

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Exhibit 5-20
JOB SEARCH ACTIVITIES OF EMPLOYED OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.

[a] For youth currently employed.

[b] For youth's current or most recent job.

Note: Respondent could indicate more than one activity.

Standard errors are in parentheses.

Job Search Activities of Out-of-School Youth with Disabilities

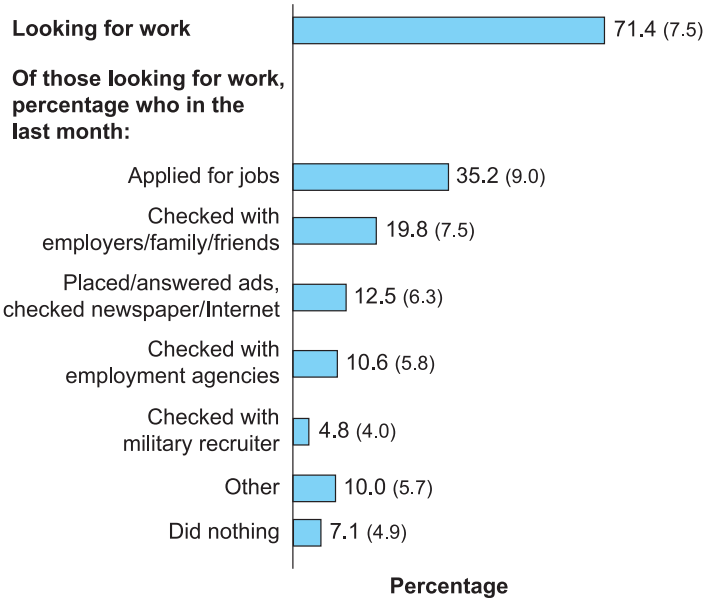
Looking for work can be a time-consuming and daunting process for anyone, but perhaps especially for youth who are new to the job market. Nevertheless, the majority of employed youth with disabilities (62%) were reported to have found their job within 4 weeks of beginning their search (Exhibit 5-20), including about one-third (32%) who found work within 1 week. Twenty-two percent of employed youth looked for their job for 1 to 4 months, and 15% persevered for 5 months or more to find their current or most recent job. The average time to find a job (for youth who were eventually successful) was about 2 months. Most youth reported finding their jobs on their own (57%), and smaller percentages had assistance from family members (21%) or friends or acquaintances (14%). Only 8% had assistance from an agency, school, or other program in finding their job.

Among unemployed youth with disabilities, about 70% reportedly are looking for work, and about one-third of those have applied for one or more jobs within the 1-month period preceding the interview (Exhibit 5-21). As with youth who have found employment, these job seekers are checking with employers, family, and friends (20%) in an effort to find employment. They also place and answer ads, check the newspaper and Internet (12%), check with state or private employment agencies (11%), and contact military recruiters (5%).

Summary

The 2-year period that is the focus of this report—the time in which youth with disabilities transitioned out of high school—is associated with considerable change in their employment status and job characteristics. Overall, there is a 10-percentage-point increase in employment, resulting in more than 4 in 10 youth with disabilities being employed. Although the number of functional domains affected by a youth's disability reduces the likelihood of employment, high social skills, experience gained in previous employment, and increasing age positively affect the likelihood that youth with disabilities are employed.

Exhibit 5-21
JOB SEARCH ACTIVITIES BY UNEMPLOYED OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.

Note: Respondent could indicate more than one activity.

Standard errors are in parentheses.

Changes from Wave 1 to Wave 2 in job characteristics all are positive. Youth with disabilities have experienced improvements in the types of jobs they hold, increases in the number of hours worked per week, and higher wages. At Wave 1, typically low-paying personal-care jobs were one of the most common types of jobs among youth with disabilities; at Wave 2, personal-care jobs are rare. The decreased reliance on these types of jobs is notable for high school graduates, older youth, girls, youth from the higher household income groups, and white youth. Increases in jobs in the trades overall and especially for boys and white youth, in retail jobs for older youth, and in a variety of "other" jobs for girls signal a possible entrance into more skill-based jobs for youth with disabilities.

Youth with disabilities no longer in secondary school potentially have more time for work and, indeed, have experienced an overall increase in the average number of hours they work per week and a nearly 20-percentage-point increase in those working full-time (to 40%). This increase is most noticeable for youth who are 18 years old—an age associated with school leaving. Youth with disabilities who dropped out of high school, boys, and white youth experienced the largest increases in hours worked within the time period examined.

The wage picture from Wave 1 to Wave 2 also has improved, with an average $1.30 increase. This increase is associated with a significant drop in the percentage of youth with disabilities working for less than minimum wage and a 25-percentage-point increase in the number of youth earning more than $7.00 per hour (to 40%). Gains in wages have been experienced among high school completers and dropouts, both genders, 18- and 19-year-olds, and white youth. Youth from all household income groups have experienced a drop in the percentage earning less than minimum wage, although only youth from households in the highest income group have seen increases in the percentage earning more than $7.00 per hour.

Most youth with disabilities who have been employed hold positive feelings about their employment experiences. Four in 10 said they liked their current job very much, three-fourths believe their job has put their education to good use, and two-thirds believe they have opportunities for advancement. Nonetheless, more than half of youth with disabilities who had a previous job left it by quitting, and the average length of employment among out-of-school youth

is 6 months. However, among youth employed more than 6 months, about 60% reported being promoted, taking on more responsibility, or receiving a pay increase. The early experiences of these youth in the job market demonstrate that many are making positive gains toward assuming the very important adult role of productive worker.

Future reports on employment will be able to present employment characteristics by disability category as sample size of youth out of school grows. Subsequent reports also will be able to examine the impact of postsecondary education and training on employment characteristics.

6. THE HOUSEHOLD CIRCUMSTANCES AND EMERGING INDEPENDENCE OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES

By Phyllis Levine and Mary Wagner

The 10-year period from the end of high school through a youth's twenties marks a time of enormous changes and events that have lifelong consequences (Osgood, Foster, Flanagan, & Ruth, in press). This period, perhaps more than any other time of life, challenges youth with decisions regarding careers, marriage, and parenting; demands for financial and residential independence and self-sufficiency; and the myriad responsibilities (legal, social, and personal) that accompany adulthood (Rindfuss, 1991). Whereas the circumstances and choices that color the early post-high-school years have great influence on the long-term outcomes of all youth, they can be particularly challenging for some youth with disabilities as they strive to achieve financial security, satisfying relationships, and self-reliance.

This chapter begins by providing a context for understanding the emerging independence of youth with disabilities in their first few years after high school by reporting findings related to parents' expectations and youth's goals for the future independence of these youth, as reported when they were still in high school. It then examines changes in several indicators of the independence of youth with disabilities who have been out of high school up to 2 years. Specifically, it explores changes and patterns in youth's experiences with regard to:

- Residential arrangements.
- Dimensions of emerging independence, including household responsibilities, having driving privileges, and aspects of financial independence (i.e., the use of personal financial management tools and reliance on government benefit programs).
- Independent household circumstances and family formation, including living with a spouse or partner, household income, and marital and parenting status.

Descriptive findings are reported for youth with disabilities as a whole for whom data are available for both Waves 1 (2001) and 2 (2003) and for those who differ in their primary disability classification while in secondary school, in school-leaving status, and in selected demographic characteristics, when significant.[1]

Parents' and Youth's Aspirations for Youth's Future Independence

As noted in previous chapters, when NLTS2 out-of-school youth still were in secondary school, telephone interviews with parents asked about their expectations for the future independence of their adolescent children with disabilities, and a survey of school staff collected information about youth's own goals for their early postschool years, as incorporated into their transition plans.

When most youth included in this report were still in high school, their parents were asked to report how likely they thought it was that their adolescent children with disabilities would

[1] Measures of the independence of youth with disabilities represented in NLTS2 are not compared with those reported for NLTS because differences in the age groups included in the two studies make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the adjustments necessary for accurate comparisons between NLTS and NLTS2.

achieve three milestones of independence: earning a driver's license, living independently without supervision, and becoming financially self-sufficient (i.e., not requiring money from family members or public programs to pay for their living expenses). The transition planning process in which youth engaged also generated information on their primary goals for their future postschool years, one option being a goal of living independently.

Exhibit 6-1
PARENTS' EXPECTATIONS AND YOUTH WITH DISABILITIES' ASPIRATIONS FOR FUTURE INDEPENDENCE

	Percentage	Standard Error
Percentage expected by parents in the future to:		
Get a driver's license		
Definitely will	53.7	4.9
Probably will	32.8	4.7
Probably or definitely won't	13.5	3.4
Live alone after high school without supervision		
Definitely will	53.9	3.9
Probably will	34.7	3.8
Probably or definitely won't	11.4	2.5
Be financially self-supporting		
Definitely will	43.2	4.0
Probably will	42.5	4.0
Probably or definitely won't	14.4	2.8
Percentage with a primary post-high-school goal of living independently	54.2	6.1

Sources: NLTS2 Wave 1 parent interviews and student's school program survey.

When out-of-school youth with disabilities were still in high school, more than half (54%) had parents who believed they "definitely" would earn driving privileges (Exhibit 6-1), and an equal percentage believed youth "definitely" would live independently after high school. About another one-third had parents who thought they "probably" would achieve these milestones (33% and 35%, respectively). There was somewhat less optimism regarding financial independence; 43% of youth with disabilities were thought by their parents "definitely" to achieve this goal, and an equal percentage were thought "probably" to do so. Nonetheless, parents of about one in eight youth with disabilities had some doubt about these two aspects of the future independence of their children with disabilities. The majority (54%) of youth, too, thought residential independence was in their future, and set this as one of their primary transition goals.

Given the ways in which different disabilities can affect various forms of independence, it is not surprising that patterns of parents' expectations and youth's aspirations regarding youth's future independence vary widely across disability categories (Exhibit 6-2). For example, youth with learning disabilities; speech, hearing, or other health impairments; or emotional disturbances were consistently the most likely to have parents who thought they "definitely" would achieve each of the independence milestones investigated in NLTS2. For example, three-fourths of those with hearing impairments, 60% or more of those with speech or other health impairments, 57% of those with learning disabilities, and half of youth with emotional disturbances were expected "definitely" to live independently in the future. In contrast, mental retardation, orthopedic impairments, autism, and multiple disabilities appear to reduce expectations for each of the independence milestones. Parents of these youth were consistently among the most likely to doubt their children would drive, live independently, or be financially self-sufficient. However, other disabilities were less consistent in their relationship to independence. For example, parents of all youth with visual impairment doubted their adolescent children would drive, but 45% were sure their children would live independently, and 30% believed they would be financially self-sufficient.

Exhibit 6-2
PARENTS' AND YOUTH'S ASPIRATIONS FOR YOUTH'S INDEPENDENCE, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage expected to:											
Get a driver's license											
Definitely will	62.4 (7.3)	66.5 (9.9)	26.3 (7.5)	47.6 (6.6)	74.9 (9.1)		19.7 (7.7)	48.4 (8.0)	18.5 (8.3)	45.7 (12.6)	9.6 (5.4)
Probably or definitely won't	6.3 (3.7)	12.7 (7.0)	41.3 (8.4)	11.2 (4.2)	8.0 (5.7)	100.0	38.4 (9.4)	10.1 (4.2)	41.1 (4.2)	19.7 (4.2)	70.7 (4.2)
Live alone after high school without supervision											
Definitely will	57.4 (5.6)	68.1 (7.4)	27.1 (7.2)	50.3 (5.6)	74.9 (6.1)	45.3 (9.5)	33.6 (7.8)	60.4 (5.5)	25.2 (8.6)	26.0 (9.4)	28.6 (8.9)
Probably or definitely won't	7.0 (2.9)	6.8 (4.0)	39.8 (7.9)	14.2 (3.9)	4.3 (2.9)	6.8 (4.8)	29.9 (7.6)	10.6 (3.4)	31.0 (9.1)	11.4 (6.8)	54.5 (9.8)
Be financially self-supporting											
Definitely will	46.4 (5.7)	56.7 (7.8)	28.6 (7.6)	38.6 (5.5)	50.7 (7.1)	29.7 (9.1)	28.0 (7.7)	36.4 (5.4)	21.4 (8.1)	28.2 (9.9)	15.9 (7.5)
Probably or definitely won't	8.3 (3.1)	9.4 (4.6)	38.3 (8.2)	27.9 (5.0)	7.6 (3.8)	16.2 (7.3)	31.6 (8.0)	14.2 (3.9)	39.2 (9.7)	22.2 (9.2)	53.7 (10.2)
Percentage with a primary post-high-school goal of living independently	55.8 (8.2)	35.1 (12.3)	53.1 (11.3)	56.1 (11.3)	50.7 (10.0)	41.8 (12.4)	44.4 (12.9)	43.7 (18.1)	39.9 (12.7)	53.2 (17.0)	48.9 (18.1)

Sources: NLTS2 Wave 1 parent interviews and student's school program survey.

The category "probably will" is omitted from the exhibit.

Standard errors are in parentheses.

In contrast to these substantial differences across disability categories in expectations and goals related to youth's future independence, few differences are evident between youth who differ in demographic characteristics, including age, gender, school-leaving status, and household income. For example, no differences are apparent for youth who differ on any of these dimensions in parents' expectations regarding youth's earning driving privileges or in youth's having a primary transition goal related to independent living. However, differences are noted in expectations for independent living for youth who differ in household income and racial/ethnic background (Exhibit 6-3). Only one-third of youth from the lowest income group have parents who thought youth "definitely" would live independently in the future, compared with 57% of those in the middle income group ($p<.05$) and 71% of youth in the highest income group ($p<.001$). White youth also were more likely to be expected "definitely" to live independently (63%) than their African-American or Hispanic peers (41% and 34%, respectively, $p<.05$ for both comparisons). Only with regard to high school leaving status is a difference noted in expectations for youth being financially self-supporting in the future; those who eventually completed high school were significantly more likely to have parents who

Exhibit 6-3
PARENTS' EXPECTATIONS FOR YOUTH'S RESIDENTIAL INDEPENDENCE, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage expected to live independently in the future						
Definitely will	33.6 (6.5)	56.6 (8.0)	71.0 (6.4)	62.8 (4.7)	40.8 (8.7)	33.7 (11.5)
Probably/definitely won't	23.3 (5.9)	7.9 (4.3)	3.9 (2.7)	7.6 (2.6)	19.2 (7.0)	10.2 (7.4)

Source: NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

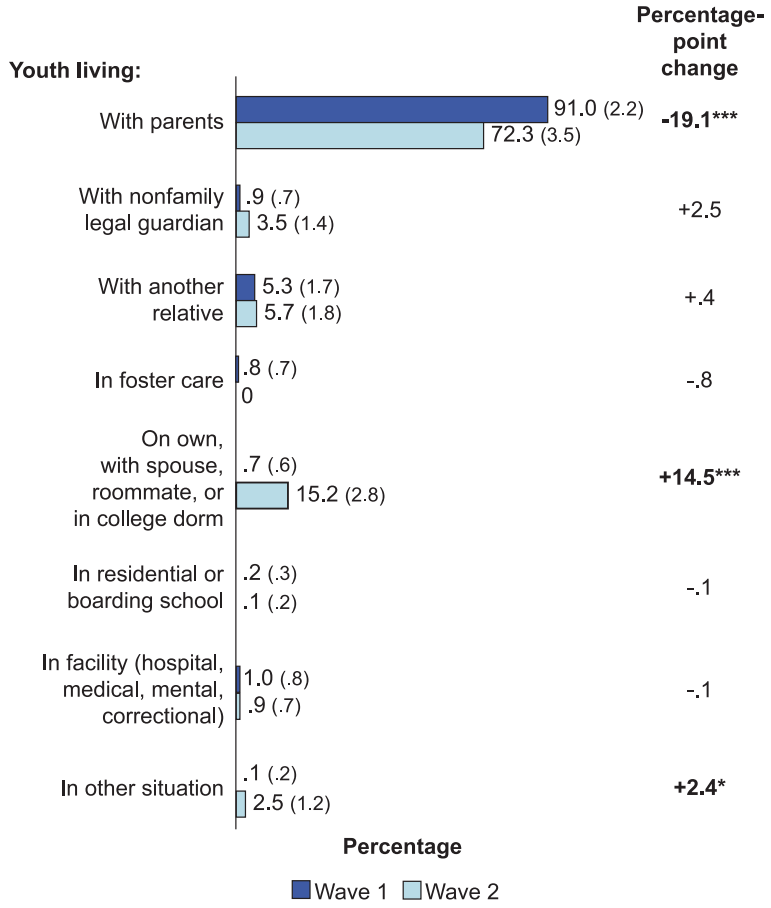
expected them eventually to earn enough to support themselves (48%) than were youth who left high school without graduating (30%, $p<.05$).

Residential Arrangements

Generally, as youth leave high school, about one-quarter also leave their parents' homes, moving either to a postsecondary education setting or to an apartment on their own or shared with roommates or a partner (Arnett, 2000). This pattern of residential movement after high school also is apparent among youth with disabilities (Exhibit 6-4). Although in Wave 1 the large majority of youth with disabilities lived either with their parents (91%) or with another adult family member or legal guardian (6%), 2 years later, significantly fewer youth are living with parents (72%), a drop of 19 percentage points ($p<.001$). Another 9% are living with a relative other than parents or with a legal guardian. Thus, 82% of youth with disabilities in Wave 2 still have familial or legal supervision at home, very comparable to the rate of 78% in the general population.[2] About half of the youth who no longer live at home (15%) were reported to be living on their own; with a spouse, partner, or roommate; or in college housing. This is a marked increase over Wave 1 (14 percentage points, $p<.001$), as is the increase in "other" living arrangements (2 percentage points, $p<.05$). There have been no changes over time in the proportions of youth who reside in foster care, a residential or boarding school, or in facilities, such as hospitals, mental health facilities, or correctional institutions.

[2] Calculated from the National Longitudinal Survey of Youth (NLSY), 2000, for out-of-school 15- through 19-year-olds.

Exhibit 6-4
CHANGES IN THE RESIDENTIAL ARRANGEMENTS OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; ***p<.001.

Standard errors are in parentheses.

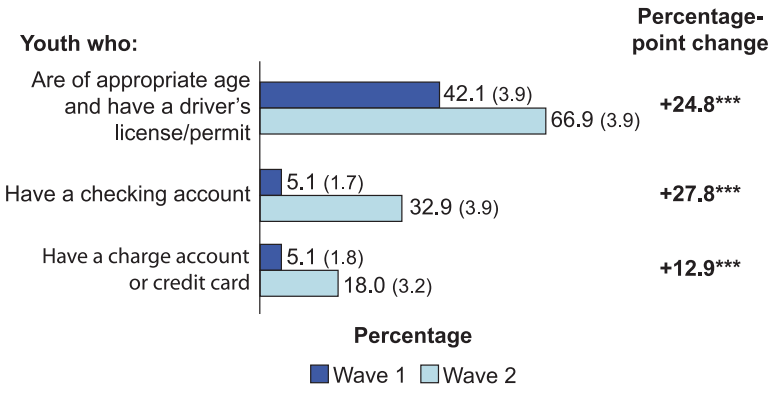
Indicators of Early Postschool Independence

NLTS2 is measuring several indicators of youth's emerging independence as they age and leave high school. This section focuses on the changes over time in youth's taking on household responsibilities, acquiring driving privileges, and exercising some aspects of financial management and independence.

Household responsibilities. Analyses of factors associated with emerging independence during secondary school demonstrate several areas of growing competence for youth with disabilities (Cameto, Levine, Wagner, & Marder, 2003). Assuming responsibilities for daily living (e.g. doing household chores, shopping for personal items) is an important indicator of maturity. A summative scale measuring the frequency with which youth with disabilities perform four household tasks demonstrates that in Wave 1 almost 60% of youth scored in the medium range, indicating that parents reported they "usually" or "sometimes" fixed their own breakfast or lunch, straightened up their own room or living area, bought needed items at the store, and did their laundry. In Wave 2, when youth are no longer in high school, they are responsible for these tasks in similar proportions as in Wave 1; there are no significant differences for youth with disabilities overall or for youth who differ in their primary disability category or demographic characteristics. Consistent with the finding that the large majority of youth still live at home with parents, their pattern of household responsibilities since high school has not changed appreciably.

Driving privileges. A driver's license provides youth with access to the community and freedom of movement (assuming access to a vehicle as well). At the same time, this privilege demands responsibilities, such as having proper insurance, car maintenance, and, most importantly, safe driving. Although many states allow 15-year-olds to apply for learners'

Exhibit 6-5
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE OF YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.
Statistically significant difference in a two-tailed test at the following level: ***p<.001.
Standard errors are in parentheses.

permits and many youth can test for a driver's license at age 16, fewer than half of age-eligible youth with disabilities had earned a driver's license in Wave 1 (42%; Exhibit 6-5). By Wave 2, two-thirds of youth were reported to have a driver's license, a 25-percentage-point increase ($p<.001$).

Financial management and independence. Analyses comparing aspects of financial management in Waves 1 and 2 (Exhibit 6-5) show that similar proportions of youth with disabilities at the two points in time are provided allowances (about 80%), have money from an allowance or a job to spend as desired (about 95%), or have savings accounts (about 46%). In contrast, whereas only 5% of youth in Wave 1 were reported to have a checking account, credit card, or charge account in their own name, by Wave 2, a 28-percentage-point increase ($p<.001$) results in one-third of youth being reported to have a checking account; a 13-percentage-point increase in youth with charge accounts or credit cards ($p<.001$) brings to 18% the youth with those financial management tools.

In addition to these indicators of personal financial management, NLTS2 tracks the participation of youth with disabilities in government benefit programs. Specifically, parents were asked about participation in TANF (Temporary Assistance to Needy Families) or the state welfare program, Food Stamps, and SSI (the Supplementary Security Income program), both during the previous 2 years and at the time of the interview. Participation in each program, both in the previous 2 years and currently, was relatively constant at the two time points. For example, at both Waves 1 and 2, parents reported that about 11% of youth with disabilities had received TANF or welfare benefits in the preceding 2 years, and about 7% were participating in this program currently. Similarly, about as many youth were reported at both Waves 1 and 2 to have received Food Stamps during the previous 2-year period (about 15%) and to be receiving them currently (about 11%). Approximately 8% to 12% of youth with disabilities had received SSI benefits in the previous 2 years or were receiving them currently at both Waves 1 and 2. With the exception of an increase in the proportion of youth with visual impairments currently receiving SSI (from 22% in Wave 1 to 34% in Wave 2, $p<.05$), there are no significant differences in participation in government benefit programs for youth with disabilities overall or for youth who differ in their primary disability category or demographic characteristics.

Family Formation

For some youth with disabilities, the early years after high school are accompanied by changes in living arrangements occasioned by marriage or childbearing. As mentioned previously regarding residential arrangements, about 15% of out-of-school youth with disabilities live independently of their parents or other adult relatives or guardians. This group includes 12% of youth who live with a spouse or roommate other than in college housing (Exhibit 6-6).

EXHIBIT 6-6
INDEPENDENT HOUSEHOLD CIRCUMSTANCES AND FAMILY FORMATION AMONG OUT-OF-SCHOOL YOUTH WITH DISABILITIES

	Percentage	Standard Error
Living with a spouse or roommate outside of their parents' home	11.7	3.0
Those 16 or older who are:		
Single, never married	87.8	2.7
Engaged	5.4	1.9
Married	3.0	1.4
In a marriage-like relationship	3.8	1.6
Divorced, separated, widowed	.1	.3
Living with spouse or partner with household income of:		
$5,000 or less	66.5	4.7
$5,001 to $10,000	12.2	3.2
$10,001 to $15,000	11.7	3.2
$15,001 to $20,000	2.3	1.5
$20,001 to $25,000	5.3	2.2
More than $25,000	2.0	1.5
Those age 16 or older who have had or fathered a child		
Wave 1	1.0	.8
Wave 2	7.8	2.3
Percentage-point change	**+6.8****	

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.
Statistically significant difference in a two-tailed test at the following level: **p<.01.

Marriage and parenting. A small share of out-of-school youth with disabilities are beginning the process of family formation shortly after high school. About 3% of youth with disabilities who have been out of secondary school up to 2 years are married, the same rate as youth in the general population[3]; 4% are in a marriage-like relationship, and 5% are engaged. Two-thirds of youth who are living with a spouse or partner have annual household incomes of $5,000 or less, well below the poverty threshold. Nine out of 10 youth with disabilities who are living with a spouse or partner are earning $15,000 or less. About 8% of youth with disabilities who have been out of school up to 2 years reported having had or fathered a child, a 7-percentage-point increase over Wave 1 ($p<.01$) and a rate not significantly different from that of the general population.[4]

Few youth who have had or fathered a child by Wave 2 are married (5%; Exhibit 6-7); however, 16% were reported to be engaged to be married, and another one-third of youth who are parenting are in a marriage-like relationship, significantly more than youth who are not parenting (33% vs. 1%, $p<.05$). Further, although about twice as many nonparenting youth are

[3] Calculated from the NLSY, 2000, for out-of-school 15- through 19-year-olds.
[4] Ibid.

EXHIBIT 6-7
INDEPENDENT HOUSEHOLD CIRCUMSTANCES AND FAMILY FORMATION AMONG OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY PARENTING STATUS

	Has had or fathered a child	Has no children
Percentage living with a spouse or partner outside of parents' home	40.7 (15.1)	8.9 (2.8)
Percentage 16 or older who are:		
Single, never married	45.6 (15.0)	91.3 (2.5)
Engaged	15.8 (11.0)	4.5 (1.8)
Married	5.0 (6.6)	2.8 (1.5)
In a marriage-like relationship	33.0 (14.2)	1.4 (1.0)
Divorced, separated, widowed	.6 (2.4)	.0
Percentage who dropped out of school	63.5 (14.5)	23.2 (3.7)

Source: NLTS2 Wave 2 parent youth interviews.

Standard errors are in parentheses.

single, (91% vs. 46%, $p<.01$), 41% of parenting youth were reported to be living with a spouse or partner outside their parents' homes. Most importantly, 64% of youth who have had or fathered a child left high school without graduating, a rate almost three times that of their nonparenting peers (23%, $p<.01$). The burdens associated with dropping out of school,[5] along with the responsibilities that accompany childbearing and parenting, are obvious and can have profound influence on youth's postschool transition and long-term success.

Disability Differences in Changes in Residential Arrangements, Indicators of Early Independence, and Family Formation

Chapter 2 demonstrated that out-of-school youth with disabilities differ widely across disability categories in their functional abilities, differences that are reflected here in significantly different experiences with independence in their early post-high-school years.

Residential arrangements. Although there is a decline of 6 to 21 percentage points across disability categories in the percentage of youth who have been out of high school up to 2 years living with their parents (Exhibit 6-8), the changes reach statistical significance only for youth with learning disabilities, emotional disturbances, orthopedic impairments, or other health impairments (19 to 21 percentage points, $p<.05$ to $p<.001$). The trend increase in residential independence (i.e., living on their own, with spouse or roommate, or in college housing) also is notable for youth in these disability categories, as well as for youth with speech, hearing, or visual impairments or mental retardation (10 to 16 percentage points, $p<.05$ to $p<.001$). Compared with youth in other disability categories, youth with emotional disturbances are the least likely still to be living with parents (65%) and the most likely to be living with relatives, guardians, in an institution or facility, or another situation (6%, $p<.05$ compared with youth with visual or orthopedic impairments), an increase of 5 percentage points over time for youth with emotional disturbances ($p<.05$).

[5] Overall, 28% of out-of-school youth with disabilities represented in this report left high school without a diploma or certificate of completion.

Exhibit 6-8
CHANGES IN THE RESIDENTIAL ARRANGEMENTS OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage living:											
With parents											
Wave 1	93.2 (2.8)	91.5 (4.3)	88.7 (4.9)	84.5 (3.9)	89.1 (4.3)	93.3 (4.7)	91.4 (4.6)	95.2 (2.3)	91.4 (5.4)	91.6 (5.7)	83.9 (7.0)
Wave 2	73.1 (4.9)	76.7 (6.5)	72.2 (6.9)	65.3 (5.2)	81.7 (5.3)	77.8 (7.8)	70.0 (7.5)	76.0 (4.7)	79.4 (7.8)	73.2 (9.2)	77.6 (7.9)
Percentage-point change	**-20.1*** **	-14.8	-16.5	**-19.2** **	-7.4	-15.5	**-21.4***	**-19.2*** **	-12.0	-18.4	-6.3
On own, with spouse, roommate, or in college dorm											
Wave 1	1.0 (1.1)	.0	.0	.0	.0	.0	.0	.4 (.7)	.0	.0	.0
Wave 2	15.5 (4.0)	10.3 (4.7)	16.3 (5.7)	16.5 (4.0)	11.3 (4.4)	15.9 (6.9)	16.2 (6.0)	10.6 (3.4)	3.5 (3.5)	14.3 (7.3)	6.0 (4.5)
Percentage-point change	**+14.5*** **	**+10.3***	**+16.3** **	**+16.5*** **	**+11.3***	**+15.9***	**+16.2** **	**+10.2** **	+3.5	+14.3	+6.0
In other situation or location											
Wave 1	.0	.0	.0	.2 (.5)	1.6 (1.7)	.2 (.8)	.0	.6 (.8)	.0	.0	.0
Wave 2	2.0 (1.6)	.5 (1.1)	1.8 (2.0)	5.6 (2.5)	.8 (1.2)	.0	.0	2.0 (1.5)	4.0 (3.8)	5.0 (4.5)	2.4 (2.9)
Percentage-point change	+2.0	+.5	+1.8	**+5.4***	-.8	-.2	.0	+1.4	+4.0	+5.0	+2.4

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<01; ***p<.001.

Standard errors are in parentheses.

Indicators of early postschool independence. Youth with learning disabilities or speech, hearing, or other health impairments are the most likely to have a driver's license in Wave 2 (Exhibit 6-9); from 70% to 82% have driving privileges (p<.05 comparing youth with learning disabilities and orthopedic impairments), increases of 16 to 29 percentage points. Notable increases also are apparent for youth with emotional disturbances, orthopedic impairments, autism, or traumatic brain injuries (22 to 32 percentage points, p<.05 to p<.001). Youth with mental retardation or visual impairments are the least likely to have driving privileges; about one in five do so, with no significant increase over time. For young adults who are in transition from high school and in search of postsecondary education opportunities and employment options, lack of driving independence increases dependence on alternative methods of transportation, which in turn limits choices regarding residential and job locations and can place greater burden on families and service providers.

Exhibit 6-9
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage who:											
Are age-eligible and have a driver's license/permit											
Wave 1	46.8 (5.7)	61.0 (8.1)	12.2 (5.1)	33.7 (5.3)	61.0 (6.9)	12.9 (6.5)	25.8 (7.4)	52.2 (5.6)	17.6 (7.5)	26.7 (9.2)	27.7 (8.7)
Wave 2	73.3 (5.3)	76.8 (7.2)	20.7 (6.8)	62.9 (5.7)	82.0 (5.8)	19.4 (7.8)	48.3 (8.5)	70.4 (5.3)	44.8 (9.8)	58.4 (11.0)	44.7 (9.9)
Percentage-point change	**+26.5*** **	+15.8	+8.5	**+29.2*** **	**+21.0***	+6.5	**+22.5***	**+18.2***	**+27.2***	**+31.7***	+17.0
Have a checking account											
Wave 1	5.8 (2.6)	10.3 (5.0)	1.3 (1.8)	1.5 (1.3)	10.6 (4.3)	8.5 (5.4)	8.2 (4.6)	9.0 (3.2)	10.4 (5.9)	19.5 (8.1)	.0
Wave 2	35.1 (5.7)	45.4 (8.5)	10.1 (5.1)	25.0 (5.1)	58.1 (7.5)	54.2 (9.9)	51.7 (8.6)	44.5 (5.8)	32.7 (9.2)	40.6 (10.9)	28.2 (9.1)
Percentage-point change	**+29.3*** **	**+35.1*** **	+8.8	**+23.5*** **	**+47.5*** **	**+45.7*** **	**+43.5*** **	**+35.5*** **	**+22.3***	+21.1	**+28.2** **
Have a charge account or credit card											
Wave 1	6.2 (2.8)	4.9 (3.7)	5.6 (3.7)	.3 (.6)	5.8 (3.4)	6.4 (5.0)	3.4 (3.1)	2.3 (1.7)	.5 (1.5)	2.7 (3.7)	1.3 (2.3)
Wave 2	19.4 (4.7)	25.9 (7.6)	6.9 (4.3)	15.8 (4.4)	26.6 (6.7)	41.4 (9.8)	20.2 (6.9)	17.0 (4.4)	2.5 (3.1)	12.4 (7.4)	10.9 (6.3)
Percentage-point change	**+13.2***	**+21.0***	+1.3	**+15.5*** **	**+20.8** **	**+35.0** **	**+16.8***	**+14.7** **	+2.0	+9.7	+9.6

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Fewer than 1 in 10 youth in most disability categories had a checking account in Wave 1, and even fewer had a personal credit card. The proportions of youth with disabilities who have since acquired a checking account have increased dramatically, from 44 to 48 percentage points for youth with hearing, visual, or orthopedic impairments. More than half of youth in these disability categories were reported to have a checking account in Wave 2. Significantly more youth in all other disability categories except mental retardation and traumatic brain injuries also were reported to have an account, with 25% to 45% of youth in these categories having a checking account. In contrast, 10% of youth with mental retardation were reported to have a checking account in Wave 2.

Similarly, the percentages of youth with mental retardation, autism, traumatic brain injuries, or multiple disabilities who were reported to have a personal credit card changed little over time; from 2% to 12% have these financial management tools in Wave 2. In contrast, charge accounts or personal credit cards were reported for 41% of youth with visual impairments, an increase of

35 percentage points ($p<.01$), followed by more than one-quarter of youth with speech or hearing impairments, an increase of 21 percentage points for each group ($p<.05$ and $p<.01$, respectively).

Family formation. More than 1 in 10 youth with learning disabilities, mental retardation, emotional disturbances, or orthopedic impairments were reported to be living with a spouse or partner when they had been out of secondary school up to 2 years (Exhibit 6-10). Most youth with disabilities living with a spouse or partner reported annual household incomes of $5,000 or less. The large majority of youth with disabilities (84% to 99%) were reported to be single (never married) in Wave 2. For example, almost all youth with speech impairments (99%) remain unmarried, significantly more than their peers with learning disabilities (88%, $p<.05$) or emotional disturbances (84%, $p<.01$). Although across categories, up to 8% of youth are engaged (youth with emotional disturbances, $p<.05$ compared with youth with orthopedic impairments), few youth are married (from none to 4%) or in a marriage-like relationship (from none to 6%), with no significant differences across categories. Few youth in any disability

Exhibit 6-10
CHANGES IN FAMILY FORMATION OF OUT-OF-SCHOOL YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
Percentage age 16 or older living with a spouse or partner	11.4 (4.2)	4.4 (3.8)	16.8 (7.5)	15.5 (4.5)	9.0 (4.8)	2.5 (3.2)	10.7 (5.4)	6.2 (3.1)	1.8 (3.0)	10.4 (7.8)	2.2 (3.5)
Percentage living with spouse or partner with household income of:											
$5,000 or less	69.8 (6.4)	61.2 (10.0)	57.1 (10.5)	56.5 (6.8)	74.6 (7.4)	49.1 (12.6)	73.4 (9.0)	61.0 (6.4)	58.0 (12.3)	80.0 (10.8)	69.1 (10.2)
$5,001 to $10,000	9.1 (4.0)	18.0 (7.9)	20.0 (8.5)	19.3 (5.4)	16.8 (6.4)	28.4 (11.4)	15.4 (7.4)	17.1 (5.0)	27.2 (11.1)	15.7 (9.8)	16.6 (8.2)
Percentage age 16 or older who are:											
Single, never married	87.7 (3.9)	98.7 (1.9)	89.2 (5.3)	83.5 (4.3)	89.5 (4.7)	93.4 (4.9)	93.8 (4.1)	89.7 (3.6)	93.7 (4.8)	84.2 (8.2)	99.2 (1.8)
Engaged	5.0 (2.6)	.0	6.3 (4.2)	8.4 (3.2)	4.3 (3.1)	4.2 (4.0)	.3 (.9)	5.2 (2.6)	4.8 (4.2)	7.7 (6.0)	.8 (1.8)
Married	3.0 (2.0)	.0	3.9 (3.3)	3.6 (2.2)	1.5 (1.9)	.0	1.3 (1.9)	1.6 (1.5)	.0	2.2 (3.3)	.0
In a marriage-like relationship	4.3 (2.4)	1.3 (1.9)	.6 (1.3)	4.3 (2.4)	4.8 (3.3)	2.4 (3.0)	4.5 (3.5)	3.5 (2.2)	1.5 (2.4)	6.0 (5.4)	.0
Percentage who have had or fathered a child											
Wave 1	.6 (.9)	1.2 (1.8)	2.7 (2.5)	1.5 (1.3)	1.9 (1.9)	.0	.0	1.8 (1.5)	.0	5.3 (4.6)	1.3 (2.2)
Wave 2	7.3 (3.1)	3.7 (3.3)	11.7 (5.5)	11.0 (3.7)	2.7 (2.7)	2.3 (2.9)	4.2 (3.5)	5.9 (2.7)	.0	10.6 (6.8)	3.2 (3.5)
Percentage-point change	**+6.7***	+2.5	+9.0	**+9.5***	+.8	+2.3	+4.2	+4.1	.0	+5.3	+1.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: *p<.05.

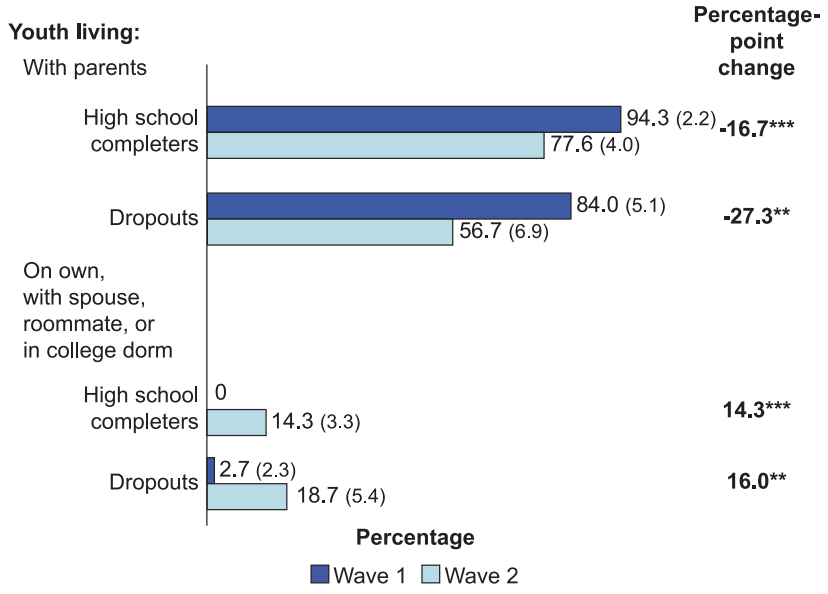
Standard errors are in parentheses.

category were reported to have given birth to or fathered a child in Wave 1. However, by Wave 2 a significant increase in parenting is noted for youth with learning disabilities or emotional disturbances (7 and 10 percentage points, respectively, p<.05). In Wave 2, 7% and 11% of youth in these categories and 12% and 11% of youth with mental retardation or traumatic brain injuries were reported to be parents; 6% or fewer in other categories were reported to be parents.

School-Leaving Status Differences in Changes in Residential Arrangements, Indicators of Early Independence, and Family Formation

Residential arrangements. Regardless of whether youth with disabilities complete high school or drop out, there has been a significant decrease in the percentages of out-of-school youth who are living at home in Wave 2 (Exhibit 6-11), a decrease of 17 percentage points (p<.001) for school completers and a decrease of 27 percentage points for dropouts (p<.01). Although the decrease is apparent for both groups, significantly more high school graduates than dropouts are still living at home in Wave 2 (78% vs. 57%, p<.01). On the other hand, similar proportions of completers and dropouts were reported to be living on their own, with a spouse or roommate, or in college housing in Wave 2, increases of 14 and 16 percentage points, respectively (p<.001 and p<.01).[6]

Exhibit 6-11
CHANGES IN THE RESIDENTIAL ARRANGEMENTS OF YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS

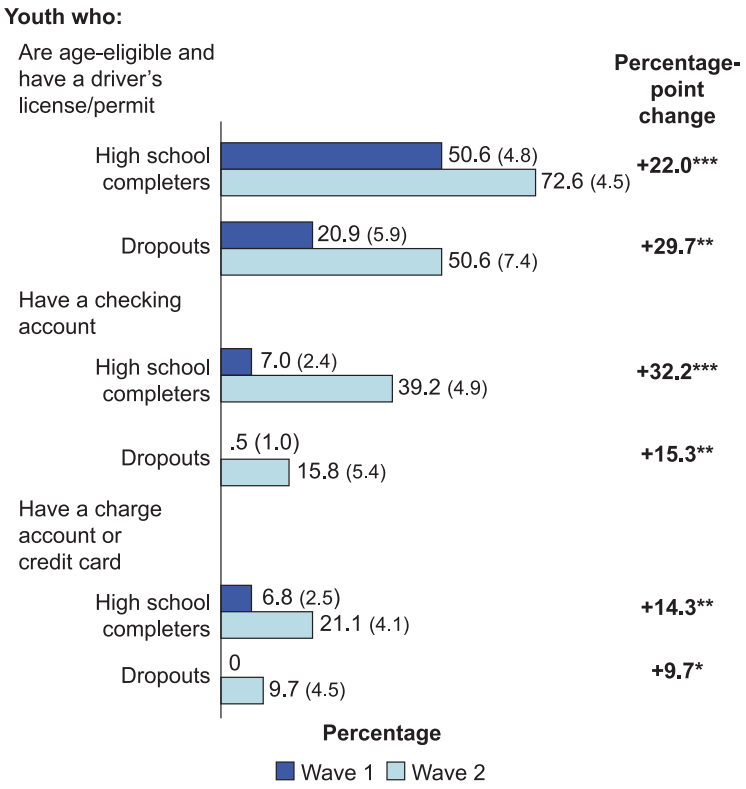


Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.
Statistically significant difference in a two-tailed test at the following levels: **p<.01; ***p<.001.
Standard errors are in parentheses.

Indicators of early postschool independence. Substantially greater proportions of youth were reported to have acquired their driver's license in Wave 2 (Exhibit 6-12), regardless of school completion status (a 22-percentage-point increase for completers and a 30-percentage-point increase for dropouts, p<.001 and p<.01). However, significantly more youth who completed high school than did not were reported to have a driver's license in both Wave 1

[6] Changes in other residential arrangements did not change appreciably for the two groups and are not included in the exhibit.

Exhibit 6-12
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE AMONG YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

(51% vs. 21%, p<.001) and Wave 2 (73% vs. 51%, p<.05), perhaps largely because dropouts are younger, as a group, than school completers (see Chapter 2).

The change that significantly larger proportions of out-of-school youth have a checking account is much more apparent for school completers (a 32-percentage-point increase, p<.001) than for school dropouts (15 percentage points, p<.01), resulting in dropouts being significantly less likely to have this tool of financial management than completers (16% vs. 39%, p<.05). Similarly, the increase in youth having a charge account or credit card is somewhat larger among those who completed high school than those who did not (14 vs. 10 percentage points, p<.01 and p<.05, respectively).

Family formation. As noted earlier, school completers are much less likely than their peers who dropped out to be living with a spouse or partner (6% vs. 27%, p<.01; Exhibit 6-13), yet the majority of both school completers and dropouts living with a spouse or partner reported annual household incomes of less than $15,000. Consistent with the difference in their living arrangements, those who did not finish high school are less likely to be single (74%) than their peers who finished school (92%, p<.01). They also are far more likely to have given birth to or fathered a child (19% vs. 4%, p<.01). This rate of parenting in Wave 2 is a 17-percentage-point increase over the rate 2 years earlier (p<.01).

Exhibit 6-13
INDEPENDENT HOUSEHOLD CIRCUMSTANCES AND FAMILY FORMATION OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS

	Completers	Dropouts
Percentage living with a spouse or partner	6.5 (2.7)	27.0 (7.5)
Percentage 16 or older who are:		
Single, never married	92.5 (2.7)	73.9 (6.6)
Engaged	3.9 (2.0)	9.8 (4.5)
Married	1.3 (1.1)	7.8 (4.0)
In a marriage-like relationship	2.3 (1.5)	8.3 (4.1)
Percentage 16 or older who have had or fathered a child		
Wave 1	.5 (.7)	2.3 (2.1)
Wave 2	3.9 (2.0)	19.1 (5.9)
Percentage-point change	+3.4	**+16.8****

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: **p<01.

Standard errors are in parentheses.

Exhibit 6-14
CHANGES IN THE RESIDENTIAL ARRANGEMENTS OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2: 15 through 17	18	19
Percentage living:			
With parents			
Wave 1	89.8 (6.1)	89.7 (3.6)	93.6 (2.9)
Wave 2	79.1 (8.2)	75.6 (5.1)	67.3 (5.6)
Percentage-point change	-10.7	**-14.1***	**-26.3*****
On own, with spouse, roommate, or in college dorm			
Wave 1	.0	1.6 (1.5)	.0
Wave 2	2.7 (3.2)	14.0 (4.1)	19.6 (4.7)
Percentage-point change	+2.7	**+12.4****	**+19.6*****

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<01; ***p<.001.

Standard errors are in parentheses.

Demographic Differences in Changes in Residential Arrangements, Indicators of Early Independence, and Family Formation

Age

During late adolescence, each year of age can be accompanied by increasing independence, which is apparent in some aspects of the experiences of youth with disabilities in their early years after high school.

Residential arrangements. Over time, older youth with disabilities have experienced significant decreases in the likelihood of living with their parents (14 and 26 percentage points among 18- and 19-year-olds, respectively, $p<.05$ and $p<.001$; Exhibit 6-14). Likewise, there are significant increases of 12 and 20 percentage points in the shares of 18- and 19-year-olds, respectively, who were reported to be living independently. However, even with these changes, older youth with disabilities who are out of secondary school are not significantly more or less likely than younger peers to be living with their parents (67% to 79% across the age groups). Nonetheless, older out-of-school youth with disabilities (age 19) are far more likely to be living independently than are their peers who are 15 through 17 (3% vs. 20%, $p<.01$).

Indicators of early postschool independence. Over time, the proportions of 18- and 19-year-old out-of-school youth with disabilities who have driving privileges have increased

Exhibit 6-15
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE AMONG OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2:		
	15 through 17	18	19
Percentage who:			
Are age-eligible and have a driver's license/permit			
Wave 1	19.5	31.4	57.8
	(9.2)	(5.5)	(5.9)
Wave 2	38.1	63.7	77.6
	(10.6)	(6.1)	(5.3)
Percentage-point change	+18.6	**+32.3*** **	**+19.8***
Have a checking account			
Wave 1	.1	3.3	8.3
	(.6)	(2.1)	(3.3)
Wave 2	18.5	26.9	42.6
	(8.5)	(5.6)	(6.4)
Percentage-point change	**+18.4***	**+23.6*** **	**+34.3*** **
Have a charge account or credit card			
Wave 1	1.2	2.9	7.5
	(4.9)	(2.0)	(3.2)
Wave 2	1.1	16.6	23.7
	(2.4)	(4.7)	(5.5)
Percentage-point change	-.1	**+13.7** **	**+16.2***

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

significantly (32 and 20 percentage points, respectively, p<.001 and p<.05; Exhibit 6-15). No significant change is apparent for younger out-of-school youth, and they are considerably less likely to have earned a driver's license or to be holding a learner's permit than their peers who are 18 (38% vs. 64%, p<.05) or 19 (38% vs. 78%, p<.001).

Significantly larger proportions of out-of-school youth in all three age groups were reported to have a checking account in Wave 2 than in Wave 1. However, larger increases are noted for older youth (18-, 24-, and 34-percentage-point increases for younger, middle, and older youth, respectively), so that 19-year-olds are twice as likely to have a checking account as youth 15 through 17 (43% vs. 19%, p<.05). Age also appears to be an important factor with regard to acquiring a personal credit card or charge account; 14- and 16-percentage-point increases for 18- and 19-year-olds (p<.01 and p<.05), respectively, result in 17% and 24% having personal credit cards in Wave 2, compared with 1% of youth who are ages 15 through 17 (p<.01 and p<.001). It is important to note that by the age of majority at 18, youth have greater access to obtaining their own credit line without having to obtain parents' permission or signatures.

Family formation. There are no notable age differences in the likelihood that out-of-school youth with disabilities are living with a spouse or partner, and the large majority of youth at any age who do so reported annual household incomes of less than $15,000. Likewise 85% to 90% of youth in all age groups were reported to be single. However, an age difference is noted regarding parenting; an 11-percentage-point increase in having had or fathered a child for 18-year-olds is statistically significant. Nonetheless, there appear to be no notable differences among age groups in their propensity to have children, with rates of parenting ranging from 4% among 19-year-olds to 12% among 18-year-olds.

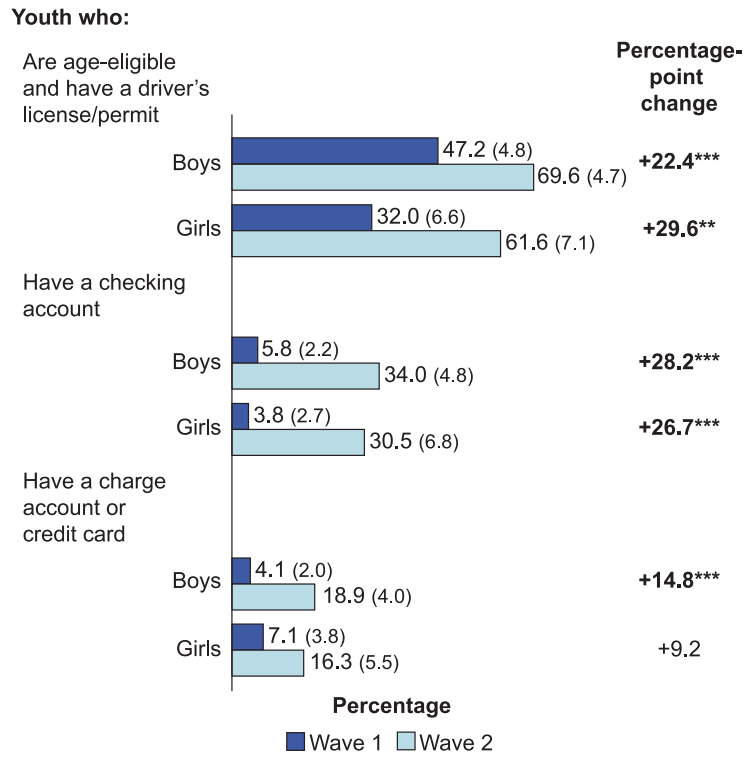
Gender

Several aspects of the experiences of youth with disabilities in the early years after high school are similar for boys and girls, although some differences are apparent, as noted below.

Residential arrangements. The previously noted decrease between Waves 1 and 2 in the likelihood that youth with disabilities are living with parents and an increased likelihood of living independently are apparent for both genders. Decreases of 22 and 14 percentage points in living with parents among boys and girls, respectively, and increases of 14 and 16 percentage points in living independently result in boys' and girls' having very similar patterns of residential arrangements within 2 years of leaving high school.

Indicators of early independence. By Wave 2, about two-thirds of boys and girls with disabilities have acquired a driver's license, significant increases from Wave 1 of 22 and 30 percentage points, respectively ($p<.001$ and $p<.01$; Exhibit 6-16). Large increases also are noted in the proportions of boys and girls reported to have a checking account (28 and 27 percentage points, $p<.001$). Although similar shares of boys and girls were reported to have credit cards or charge accounts in Wave 2 (19% and 16%, respectively), the increase from Wave 1 is significant only for boys (15 percentage points, $p<.001$).

Exhibit 6-16
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE AMONG YOUTH WITH DISABILITIES, BY GENDER



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: **p<.01; ***p<.001.

Standard errors are in parentheses.

Family formation. Although there is a 14-percentage-point difference in the likelihood that boys and girls with disabilities live with a spouse or partner (7% vs. 21%; Exhibit 6-17), it does not attain statistical significance. However, significantly more girls than boys living with a spouse or partner reported earning $5,000 or less (82% vs. 59%, $p<.05$). Girls also have experienced a significant increase over time in the rate at which they are parenting (13 percentage points, $p<.05$) that is not apparent among boys; nonetheless, the two groups are not significantly different in their likelihood of parenting in Wave 2 (5% and 13%).

Exhibit 6-17
FAMILY FORMATION AMONG OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY GENDER

	Boys	Girls
Percentage living with a spouse or partner	7.1	20.7
	(2.9)	(6.5)
Percentage living with spouse or partner with household income of $5,000 or less	59.4	81.8
	(5.7)	(7.2)
Percentage age 16 or older who are:		
Single, never married	92.7	78.1
	(2.6)	(6.1)
Engaged	2.4	11.4
	(1.6)	(4.7)
Married	1.0	6.8
	(1.0)	(3.7)
In a marriage-like relationship	4.0	3.6
	(2.0)	(2.7)
Percentage who have had or fathered a child		
Wave 1	1.3	.3
	(1.1)	(.8)
Wave 2	5.1	13.2
	(2.2)	(5.0)
Percentage-point change	+3.8	**+12.9***

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: *p<.05.

Standard errors are in parentheses.

Household Income and Race/Ethnicity

Several early post-high-school experiences differ for youth with disabilities whose household incomes and racial/ethnic backgrounds differ.

Residential arrangements. The overall pattern of movement toward residential independence from Wave 1 to Wave 2 is apparent for youth with disabilities across the three household income groups (Exhibit 6-18). However, the middle income group shows both the largest decrease in living with parents (26 percentage points, $p<.01$) and the largest increase in independent living (20 percentage points, $p<.01$). Regarding differences related to youth's race/ethnicity, the changes in residential arrangements from Wave 1 to Wave 2 are significant for the larger group of white youth only. A 21-percentage-point decrease in white youth with disabilities living with parents and a 19-percentage-point gain in independent living are apparent for these youth ($p<.001$). With this latter increase, white youth with disabilities are more likely to be living on their own, with a spouse or roommate, or in college housing than are their African-American or Hispanic peers (20% vs. 8% and 6%, respectively, $p<.05$ for both comparisons).

Exhibit 6-18
CHANGES IN THE RESIDENTIAL ARRANGEMENTS OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage living:						
With parents						
Wave 1	90.0 (4.1)	92.7 (4.0)	91.8 (3.9)	92.3 (2.5)	87.3 (5.8)	94.9 (5.2)
Wave 2	72.9 (6.0)	66.6 (7.4)	77.8 (5.8)	71.1 (4.3)	69.7 (8.0)	80.9 (9.3)
Percentage-point change	**-17.1***	**-26.1****	**-14.0***	**-21.2*****	-17.6	-14.0
On own, with spouse, roommate, or in college dorm						
Wave 1	.0	.0	2.1 (2.0)	1.1 (1.0)	.0	.0
Wave 2	6.7 (3.4)	20.0 (6.2)	15.6 (5.1)	19.9 (3.8)	7.5 (4.6)	6.2 (5.7)
Percentage-point change	**+6.7***	**+20.0****	**+13.5***	**+18.8*****	+7.5	+6.2

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<01; ***p<.001.

Standard errors are in parentheses.

Indicators of early postschool independence. Significantly more youth in all income brackets were reported in Wave 2 than in Wave 1 to have a driver's license or permit (23- to 30-percentage-point increases; Exhibit 6-19). However, similar-size increases across the three income groups did little to close the large gap between the lowest and highest income groups in having driving privileges that existed in Wave 1 (29% vs. 55%, p<.01); youth living in the lowest-income households continued in Wave 2 to be considerably less likely to have driving privileges than their peers living in the highest-income households (52% vs. 78%, p<.01).

Significantly larger proportions of youth in each of the three household income brackets were reported in Wave 2 to have a checking account. However, the increases range from 15 percentage points for youth in the lowest income bracket to 40 percentage points for youth in the highest income bracket, resulting in considerably fewer youth in the lowest-income households having a checking account in Wave 2 (16%) than youth in the middle-income households (40%, p<.05) or in the highest-income households (45%, p<.01). Although youth in the lowest- and highest-income households show significant increases in the proportions with credit cards or charge accounts (10 and 19 percentage points, respectively, p<.05 and p<.01), the increase is about twice as large for upper-income youth, and more than twice as many of those youth were reported to have personal credit (26% vs. 10%, p<.05).

Exhibit 6-19
CHANGES IN INDICATORS OF EARLY POSTSCHOOL INDEPENDENCE AMONG YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage who:						
Are age-eligible and have a driver's license/permit						
Wave 1	28.6 (6.3)	39.3 (7.9)	54.6 (7.1)	54.0 (4.8)	24.3 (7.7)	17.5 (9.3)
Wave 2	51.9 (7.1)	68.9 (7.8)	78.5 (6.0)	78.2 (4.2)	40.1 (9.3)	54.7 (12.2)
Percentage-point change	**+23.3***	**+29.6****	**+23.9***	**+24.2*****	+15.8	**+37.2***
Have a checking account						
Wave 1	.6 (1.1)	10.6 (4.9)	4.4 (2.9)	6.5 (2.4)	4.2 (3.5)	.8 (2.1)
Wave 2	15.9 (5.2)	39.9 (8.3)	44.9 (7.3)	40.0 (5.0)	21.6 (7.9)	19.2 (9.8)
Percentage-point change	**+15.3****	**+29.3****	**+40.5*****	**+33.5*****	**+17.4***	+18.4
Have a charge account or credit card						
Wave 1	.1 (.5)	4.2 (3.3)	6.6 (3.7)	7.5 (2.7)	.4 (1.2)	1.9 (3.5)
Wave 2	10.5 (4.4)	13.8 (5.9)	25.9 (6.5)	18.5 (4.0)	18.0 (7.4)	15.6 (9.1)
Percentage-point change	**+10.4***	+9.6	**+19.3****	**+11.0***	**+17.6***	+13.7

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Significant increases in the proportions of youth with driver's licenses in Wave 2 have occurred for white and Hispanic youth (24 and 37 percentage points, p<.001 and p<.05) but are not apparent for African-American youth. The particularly large increase among Hispanic youth with disabilities narrowed the gap with white youth that had existed in Wave 1 (18% vs. 54%, p<.001). However, a large gap remains between African-American and white youth; almost twice as many white as African-American youth were reported in Wave 2 to have driving privileges (78% vs. 40%, p<.001).

The tendency for youth with disabilities to have checking accounts or credit cards as they age is apparent for white and African-American youth. However, the increase in having a checking account is about twice as large for white youth (34 vs. 17 percentage points), resulting in many more white youth than African-American youth having access to this banking service (40% vs. 22%, p<.05). Hispanic youth were reported to have checking accounts in similar proportions to their African-American peers (19%). There also are notable increases from Wave 1 to Wave 2 in white and African-American youth having a credit card; however, similar proportions of youth in all three racial/ethnic groups were reported in Wave 2 to have personal credit (16% to 18%).

Family formation. Similar proportions of youth in the three household income brackets were reported to have given birth to or fathered a child in Wave 2 (8% to 10%; Exhibit 6-20), and the increase in parenting from Wave 1 to Wave 2 is notable only for youth living in the middle- and highest-income households (9- and 7-percentage-point increases, respectively, $p<.01$). Likewise, the only significant change in parenting status among out-of-school youth with disabilities whose races/ethnicities differ is an 8-percentage-point increase for white youth, although the proportions of youth who were reported to be parents in Wave 2 are similar among white (9%), African-American (7%), and Hispanic (5%) groups.

Exhibit 6-20
CHANGES IN FAMILY FORMATION AMONG OUT-OF-SCHOOL YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage who have had or fathered a child						
Wave 1	1.7	1.0	.7	.9	1.1	.2
	(1.8)	(1.6)	(1.2)	(.9)	(1.8)	(1.1)
Wave 2	8.2	10.1	7.9	9.0	7.0	4.7
	(3.9)	(5.1)	(4.0)	(2.9)	(4.8)	(5.2)
Percentage-point change	+6.5	**+9.1****	**+7.2****	**+8.1****	+5.9	+4.5

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: **p<.01.

Standard errors are in parentheses.

Summary

Youth with disabilities face many challenges in the first few years following the transition from high school in regard to residential and financial independence and the growing responsibilities associated with self-sufficiency and forming families. As is the trend with youth in the general population, the pattern of leaving the family home after high school and entering into a variety of other residential arrangements occurs gradually for youth with disabilities, regardless of demographic differences. Up to 2 years after high school, about three-quarters of youth with disabilities are still living with their parents. The move toward increasing independence is most notable for youth with learning disabilities or other health or orthopedic impairments; however, youth with emotional disturbances are the least likely still to be living with their parents in Wave 2. In addition, white youth with disabilities are more likely to be living on their own, with a spouse or roommate, or in college housing than their African-American or Hispanic peers, and youth with disabilities who drop out of school are significantly less likely to be living with their parents than those who completed high school.

About 1 in 10 out-of-school youth with disabilities participate in government benefit programs (TANF, state welfare program, Food Stamps, or SSI) during high school, and participation changes little during the first 2 postschool years for youth with disabilities overall, or for youth who differ in their primary disability category or demographic characteristics. The

exception is that the one in five youth with visual impairments who received SSI benefits in Wave 1 has increased to one-third of these youth in Wave 2.

As youth become more independent, it is expected that they will seek more freedom of movement by obtaining a driver's license and more freedom to earn and spend money, privileges that require high levels of responsibility and maturity. Two-thirds of youth with disabilities were reported to have a driver's license in Wave 2, with an increase in driving privileges occurring for youth in most disability categories, with the exception of youth with mental retardation or visual impairments. Youth with disabilities who drop out of high school are less likely than school completers to have driver's licenses and to be living at home. Dropouts thus are more dependent on public transportation or friends to gain access to employment and community opportunities. Significant increases in the proportions of youth with driver's licenses in Wave 2 are apparent for white and Hispanic youth and youth in all income brackets. However, twice as many white youth as African-American youth were reported to have driver's licenses 2 years after high school, and youth living in the lowest-income households are considerably less likely to have driving privileges than their peers living in the highest-income households.

Maintaining a checking account or personal credit card requires skills and judgment that often come with age, apparent in the 28-percentage-point increase in youth reported to have checking accounts and the 13-percentage-point increase in youth with credit card privileges in Wave 2. Whereas from one-third to more than half of youth in most disability categories were reported to have a checking account in Wave 2, this is the case for only 1 in 10 youth with mental retardation. Similarly, few youth with mental retardation, autism, or multiple disabilities are gaining experience with credit cards or charge accounts. Although the shares of dropouts with disabilities who have a checking account or credit card have increased, dropouts are significantly less likely to have these services than their peers who graduate. Similarly, although youth in all household income brackets are more likely to have a checking account or credit card in Wave 2, considerably fewer youth in the lowest-income households have either, compared with their wealthier peers. Likewise, white youth with disabilities are more likely than their African-American or Hispanic peers to have a checking account in Wave 2. As with the obstacles associated with the lack of a driver's license, youth who are not establishing credit through checking or charge accounts are at a greater disadvantage in the move toward self-sufficiency.

About 12% of out-of-school youth are living with a spouse or roommate outside of their parents' home in Wave 2, and the vast majority of these youth were reported to have annual incomes of $15,000 or less, with two-thirds earning $5,000 or less. More girls than boys with disabilities reported living with a spouse or roommate in Wave 2; nonetheless, significantly more girls with independent households reported earning $5,000 or less.

Few youth with disabilities who have been out of high school up to 2 years were reported to be married, although 9% were described as engaged or in marriage-like relationships. Such relationships are least likely for youth with speech impairments (who as a group tend to be younger than youth in other categories) and most likely for youth with learning disabilities or emotional disturbances. Eight percent of youth with disabilities were reported to have had or fathered a child by Wave 2, a rate of parenting similar to that of the general population. The increase in parenting is more likely to occur for youth with learning disabilities or emotional disturbances; about 1 in 10 of these youth, as well as of youth with mental retardation or

traumatic brain injuries, were reported to be parents within 2 years of leaving high school. A significant increase in childbearing also is apparent for youth with disabilities who are dropouts, female, white, or living in middle- or upper-income households.

The share of out-of-school youth who are parenting may be relatively small, but 46% of these youth are single; in fact, only 5% were reported to be married, and half were said to be engaged or in a marriage-like relationship. Most importantly, two-thirds of youth with disabilities who have given birth to or fathered a child dropped out of high school. During the vulnerable transition years, a number of young parents with disabilities are challenged by the burdens associated with dropping out of school and the responsibilities that accompany childbearing and parenting, all of which can profoundly influence postschool outcomes and long-term success.

7. THE LEISURE ACTIVITIES, SOCIAL INVOLVEMENT, AND CITIZENSHIP OF YOUTH WITH DISABILITIES AFTER HIGH SCHOOL

By Mary Wagner

Analyses of the leisure activities and social involvement of youth with disabilities during high school concluded that "A look at youth with disabilities ages 13 through 17 and their activities in their nonschool hours reveals youth involved in a wide variety of activities both at home—listening to music, watching television, using a computer, doing homework, talking on the phone with friends—and outside the home—getting together with friends, participating in sports, taking part in organized groups, working. Thus, the majority of youth with disabilities appear to be 'typical teens' outside of school in many ways" (Wagner, 2003, p. 7-1).

But for both youth with disabilities and youth in the general population, leaving high school could occasion changes in the ways they spend their leisure time and time with friends. For example, the demands of homework associated with their high school classes may come to an end for youth who do not continue on to postsecondary school, freeing their time for other pursuits. Further, many high school students participate in organized group activities both at school and in the community, such as sports teams or performing groups. Not only do such group activities engage youth in their nonschool hours, but students may spend several hours a week working out, practicing an instrument, or rehearsing dramatic or choral productions associated with those groups. Leaving high school could put an end both to those kinds of group activities and to the demands for practicing the skills they entail. Finally, school hours provide a structured time during which students are assured of seeing many of their friends; without the structure of high school, the frequency and nature of youth's friendship interactions could well change.

This chapter examines changes in the following kinds of leisure activities and social involve-ment since high school of youth with disabilities who have been out of high school up to 2 years:

- Use of free time
- Interactions with friends
- Participation in extracurricular activities in the community.

In addition to these aspects of the lives of out-of-school youth with disabilities, the chapter also describes indicators of two aspects of their citizenship, one positive and one negative. The positive aspect of citizenship involves the extent to which youth with disabilities who are at least 18 years old are registered to vote. The negative aspect concerns involvement with the criminal justice system, including whether youth ever have:

- Been stopped and questioned by police, other than for a traffic violation
- Been arrested
- Spent a night in jail
- Been on probation or parole.

Descriptive findings are reported for youth with disabilities as a whole for whom data are available for both Waves 1 (2001) and 2 (2003) of NLTS2 and for those who differ in their primary disability classification while in secondary school, selected demographic characteristics, and school-leaving status when significant.[1] In addition, a more in-depth analysis is reported regarding two important aspects of the quality of life of out-of-school youth with disabilities, one positive and one negative: having an active social life that involves seeing friends regularly, and violating the norms of society to such a degree that it results in arrest. Results of logistic regression analyses identify the characteristics of youth and their households that are associated with these experiences.[2]

Uses of Leisure Time

Youth with disabilities or their parents[3] were asked "during the past few weeks, how [have you/has (youth)] spent most of [your/his/her] time when [you weren't/he/she wasn't] working or going to school?" Youth or parents responded in their own words with one or more activities they perceived occupied "most" of youth's free time.[4]

Leaving high school has occasioned little change in some of the ways youth with disabilities spend their leisure time. For example, more than one-third of Wave 2 youth (36%) spend "most" of their time visiting with friends or going out on dates, the very same rate of this leisure-time activity as 2 years earlier. Neither is a significant difference observed over time in the rate at which youth with disabilities spend much of their free time visiting with friends (13% in Wave 2); doing homework or chores around the house (20%); or playing sports, shopping, or hanging out at the mall, or participating in organized groups (between 3% and 7% of Wave 2 youth with disabilities spend most of their leisure time in each of these pursuits). There also has been no change reported in the likelihood that youth with disabilities spend time taking lessons or classes outside of school (e.g., music lessons, enrichment activities).

However, many out-of-school youth with disabilities are much less likely to spend most of their time in a variety of fairly passive leisure activities (Exhibit 7-1), including reading for pleasure or doing hobbies; talking on the phone with friends; watching TV or videos; listening to music; and using a computer for games, the Internet, or communication. Whereas at Wave 1, 46% of youth with disabilities were spending most of their leisure time watching TV or videos, 16% do so in Wave 2 ($p<.001$). Similarly, in Wave 1, 36% of youth with disabilities were spending most of their time using a computer and 28% were spending most of their leisure time listening to music; those rates are 15% and 10% in Wave 2 ($p<.001$). Only 6% of youth spend a good deal of leisure time doing hobbies or reading for pleasure in Wave 2, and 5% spend most of

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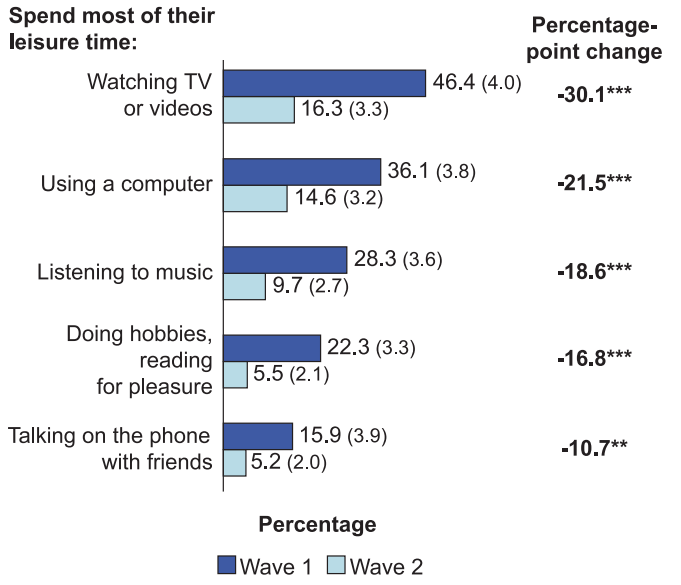
[1] The experiences of out-of-school youth with disabilities represented in NLTS2 are not compared here with those of youth represented in the original NLTS because age differences in the two samples make straightforward comparisons misleading. A subsequent report will present findings of analyses that include the analytic adjustments necessary for accurate comparisons between NLTS and NLTS2.

[2] Multivariate analyses do not include factors related to youth's school programs because complete data on those programs are not yet available.

[3] Parents were respondents in Wave 1. Both parents and youth were respondents to this item in Wave 2. Youth's responses are reported if available; parents' respondents are used if youth did not complete a Wave 2 interview.

[4] Note that the question addressed the ways youth spent "most" of their time, and respondents could name more than one activity. If more than one activity was named, each is counted here as an activity in which youth spent most of their time. It is unknown how well informed parents were of the ways in which youth spent their free time.

Exhibit 7-1
CHANGES IN USES OF LEISURE TIME BY YOUTH WITH DISABILITIES

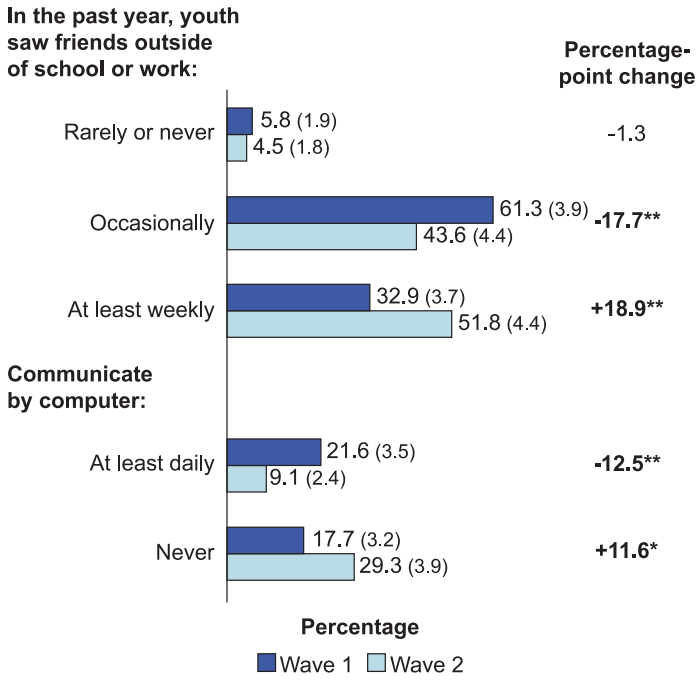


Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: **p<.01; ***p<.001.

Standard errors are in parentheses.

Exhibit 7-2
CHANGES IN FRIENDSHIP INTERACTIONS OF YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

their leisure time on the phone with friends, declines of 17 and 11 percentage points from rates of engaging in those activities 2 years previously (p<.001 and p<.01).

Friendship Interactions

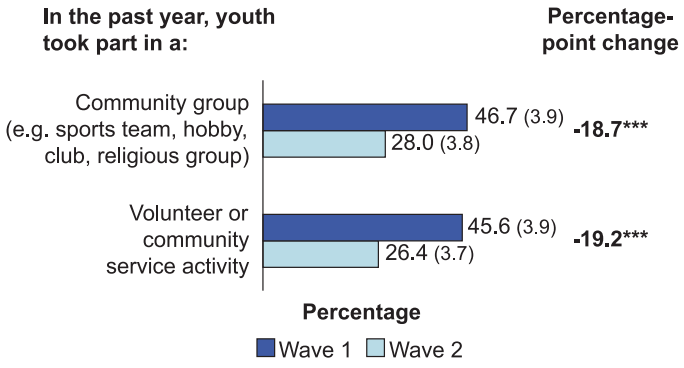
Findings reported above regarding use of leisure time by youth with disabilities when they leave high school suggest that youth are no more or less likely to spend *most* of their leisure time seeing friends, which might lead one to expect a reduction in the *frequency* with which youth see friends. However, the opposite is the case; in Wave 2, youth with disabilities are seeing friends more frequently than they were 2 years earlier (Exhibit 7-2), although that increased frequency apparently does not increase the rate of reporting that friendships occupy "most" of youth's time. Specifically, there has been a 19-percentage-point increase in youth with disabilities seeing friends at least weekly outside of school or work, so that in Wave 2, more than half (52%) are doing so. In contrast, the findings reported in the preceding section regarding use of leisure time suggest that youth are less likely to spend much time on the phone with friends, yet there is no change for youth with disabilities overall or for any subgroup in the frequency with which they were reported to receive phone calls from friends (calls made by youth themselves were not reported). The reduction in frequent leisure-time use of computers noted in the preceding section is mirrored in reports that youth with disabilities are much less likely in Wave 2 than

in Wave 1 to communicate frequently by computer (i.e., e-mail, instant messaging, or chat rooms); whereas more than one in five (22%) communicated frequently by computer at least daily in Wave 1, fewer than half as many are doing so in Wave 2 (9%, p<.01).

Participation in Community Activities

It is reasonable to expect that the early post-high-school years would see a reduction in youth with disabilities participating in organized community activities. For example, youth who leave their communities after high school for college or military service necessarily discontinue their participation in community-sponsored extracurricular activities in their home communities. Even among those who remain at home, increased work or school responsibilities could make participation in organized groups more difficult. In fact, there has been a 19-percentage-point decrease over time in youth with disabilities participating in community-based group activities (Exhibit 7-3); 47% of youth did so in Wave 1, compared with 28% who are doing so in Wave 2 (p<.001). Participation in volunteer or community service activities has declined by a similar amount (from 46% to 26%, p<.001), perhaps because some portion of their earlier community service activities had been sponsored by youth's secondary schools. Interestingly, these two aspects of involvement in the community are related; youth with disabilities who are group members are more than twice as likely also to participate in volunteer or community service activities than nonmembers (44% vs. 20%, p<.01).

Exhibit 7-3
CHANGES IN PARTICIPATION IN COMMUNITY ACTIVITIES BY YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: ***p<.001.

Standard errors are in parentheses.

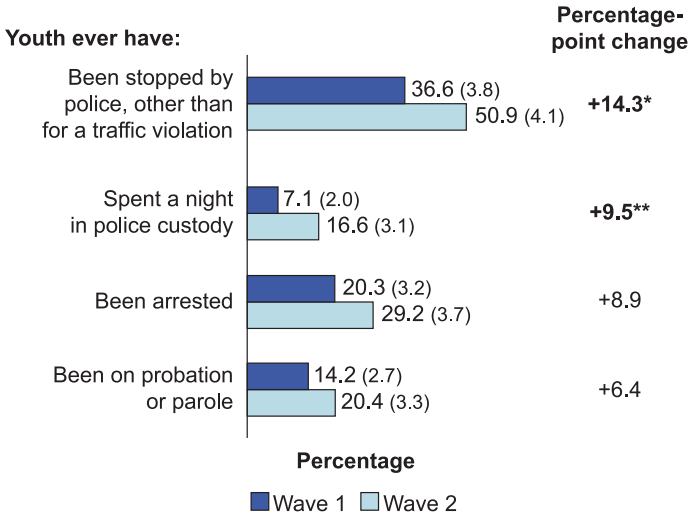
Citizenship

As noted above, NLTS2 examines two aspects of the citizenship of youth with disabilities. The positive aspect of their citizenship concerns whether age-eligible youth are registered to vote; almost two-thirds (64%) are registered voters in Wave 2, a rate very similar to that of 18- to 24-year-olds in the general population (Lopez & Kirby, 2003).

The negative aspect of youth's citizenship concerns their involvement in the criminal justice system (i.e., parents or youth reported incidents of youth being stopped by police other than for a traffic violation, being arrested, spending a night in jail, or being on probation or parole at any time). Because the items indicate whether these experiences have ever occurred, the passage of time would be expected to result in a higher rate of positive responses in Wave 2 than in Wave 1.

In fact, significant increases are noted in youth with disabilities engaging in activities that result in their being stopped by police (other than for traffic violations) and spending a night in jail (Exhibit 7-4). In Wave 1, more than one-third of youth with disabilities (37%) had been stopped by police; a 14-percentage-point increase results in more than half having had that experience by Wave 2 (51%, $p<.05$). A 10-percentage-point increase is apparent in youth with disabilities spending a night in jail; 17% have done so by Wave 2. No significant increases are noted in the arrest rate or the rate at which youth with disabilities have been convicted of an offense that ended with probation or parole. Nonetheless, by Wave 2, 29% of out-of-school youth with disabilities have been arrested, not significantly different from the 23% arrest rate of same-age youth in the general population.[5]

Exhibit 7-4
CHANGES IN CRIMINAL JUSTICE SYSTEM INVOLVEMENT BY YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Disability Differences over Time in Leisure Activities, Social Involvement, and Citizenship

The changes in leisure activities and social involvement described above are not experienced equally by youth in different disability categories.

Uses of leisure time. Significant declines in youth spending most of their leisure time doing hobbies or reading for pleasure affect more categories of youth (seven) than do declines in spending time playing sports or talking on the phone with friends (two and three categories, respectively; Exhibit 7-5). Four categories of youth share in the decline in computer use taking most of their free time, and five categories of youth show declines in watching TV or videos and listening to music. Watching television or videos is the activity most likely to take most of youth's leisure time at this point in their lives and also the activity with the largest significant decline over time (ranging from 26 to 33 percentage points). The smallest significant declines are noted for talking on the phone with friends (10 to 18 percentage points), which is the least likely to be reported as taking most of youth's leisure time.

[5] Calculated from the National Longitudinal Survey of Youth (NLSY) 2000, for 15- through 19-year-old out-of-school youth.

Exhibit 7-5
CHANGES IN USES OF LEISURE TIME, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage spending most of their leisure time:											
Watching TV/videos											
Wave 1	44.9	45.8	60.1	43.0	45.2	57.4	60.5	46.5	59.9	50.5	57.3
	(5.6)	(8.2)	(7.7)	(5.6)	(7.0)	(9.6)	(8.2)	(5.6)	(9.6)	(10.2)	(9.7)
Wave 2	11.8	18.3	41.0	17.1	32.4	35.0	40.2	15.6	43.9	31.2	28.4
	(4.2)	(6.8)	(8.4)	(5.0)	(7.6)	(10.2)	(9.3)	(4.4)	(10.2)	(11.3)	(9.6)
Percentage-point change	**-33.1*****	**-27.5****	-19.1	**-25.9*****	-12.8	-22.4	-20.3	**-30.9****	-16.0	-19.3	**-28.9***
Using a computer											
Wave 1	36.6	36.9	33.2	33.4	43.6	38.4	54.6	35.0	59.0	38.3	34.9
	(5.4)	(8.0)	(7.4)	(5.3)	(7.0)	(9.4)	(8.4)	(5.3)	(9.7)	(9.9)	(9.4)
Wave 2	12.5	24.3	13.5	20.7	38.6	22.1	29.0	12.8	49.0	25.0	18.0
	(4.3)	(7.5)	(5.9)	(5.4)	(7.9)	(8.9)	(8.6)	(4.1)	(10.3)	(10.5)	(8.2)
Percentage-point change	**-24.1*****	-12.6	**-19.7***	-12.7	-5.0	-16.3	**-25.6***	**-22.2*****	-10.0	-13.3	-16.9
Listening to music											
Wave 1	26.7	32.9	43.5	25.1	26.0	40.3	40.4	31.2	41.1	36.4	22.2
	(5.0)	(7.8)	(7.8)	(4.9)	(6.2)	(9.5)	(8.2)	(5.2)	(9.7)	(9.8)	(8.2)
Wave 2	8.4	9.1	18.7	5.4	18.1	19.2	24.2	13.5	17.1	18.0	15.1
	(3.6)	(5.0)	(6.7)	(3.0)	(6.2)	(8.4)	(8.1)	(4.2)	(7.8)	(9.3)	(7.7)
Percentage-point change	**-18.3****	**-23.8***	**-24.8***	**-19.7*****	-7.9	-21.1	-16.2	**-17.7****	-24.0	-18.4	-7.1
Doing hobbies, reading for pleasure											
Wave 1	22.7	30.9	23.0	20.4	20.7	24.2	28.9	15.5	30.9	29.5	20.9
	(4.7)	(7.6)	(6.6)	(4.6)	(5.7)	(8.3)	(7.6)	(4.0)	(9.1)	(9.3)	(8.0)
Wave 2	4.9	11.2	4.7	5.8	13.1	21.2	15.0	4.6	8.2	3.8	12.1
	(2.8)	(5.5)	(3.6)	(3.1)	(5.5)	(8.7)	(6.8)	(2.6)	(5.7)	(4.6)	(7.0)
Percentage-point change	**-17.8****	**-19.7***	**-18.3***	**-14.6****	-7.6	-3.0	-13.9	**-10.9***	**-22.7***	**-25.7***	8.8
Talking on the phone with friends											
Wave 1	15.8	21.7	20.5	14.4	15.1	24.4	10.2	10.6	5.8	15.3	23.2
	(4.1)	(6.8)	(6.3)	(4.0)	(5.1)	(8.3)	(5.1)	(3.4)	(4.6)	(7.3)	(8.3)
Wave 2	5.5	3.8	9.2	1.8	7.0	6.4	2.4	2.9	2.7	3.7	6.4
	(2.9)	(3.3)	(5.0)	(1.8)	(4.1)	(5.2)	(2.9)	(2.1)	(3.3)	(4.6)	(5.2)
Percentage-point change	**-10.3***	**-17.9***	-11.3	**-12.6****	-8.1	-18.0	-7.8	-7.7	-3.1	-11.6	-16.8
Playing sports											
Wave 1	24.2	29.2	29.0	25.8	24.6	23.2	13.9	24.7	21.7	20.4	16.5
	(4.8)	(7.5)	(7.1)	(4.9)	(6.1)	(8.2)	(5.8)	(4.8)	(8.1)	(8.2)	(7.3)
Wave 2	21.5	10.6	16.3	25.0	23.2	7.0	9.8	12.0	16.8	13.5	17.4
	(5.3)	(5.4)	(6.3)	(5.8)	(6.8)	(5.5)	(5.7)	(4.0)	(7.7)	(8.3)	(8.1)
Percentage-point change	-2.7	**-18.6***	-12.7	-.8	-1.4	-16.2	-4.1	**-12.7***	-4.9	-6.9	+.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<01; ***p<.001.

Standard errors are in parentheses.

Youth with learning disabilities or speech or other health impairments have experienced declines in more activities (five) than other categories of youth. Youth with visual or hearing impairments show no significant changes in the likelihood of their spending most of their time in any of the leisure pursuits investigated in NLTS2, and those with orthopedic impairments, autism, traumatic brain injuries, or multiple disabilities have experienced declines in only one activity. Youth with mental retardation or emotional disturbances show declines in three and four activities, respectively.

In Wave 2, youth in different disability categories vary markedly in the activities they pursue in their leisure time. For example, youth with learning disabilities are the least likely to watch television or videos with most of their free time (12%) and among the least likely to use a computer a great deal in their free time (12%), but they are among the most likely to spend most of their free time playing sports (22%). In contrast, 40% or more of youth with mental retardation, orthopedic impairments, or autism reportedly spend most of their time watching TV or videos ($p<.01$ compared with youth with learning disabilities). Youth with orthopedic impairments are the most likely to spend much of their leisure time listening to music (24%) and youth with emotional disturbances the least likely (5%, $p<.05$).

Friendship interactions. The significant increase in seeing friends at least weekly that is evident among youth with disabilities as a whole occurs primarily among youth with learning disabilities and other health impairments (23 and 16 percentage points, respectively, $p<.05$; Exhibit 7-6). Only youth with learning disabilities show the significant decline in computer communications (15 percentage points, $p<.05$) that is evident for youth with disabilities as a whole. Youth with learning disabilities or emotional disturbances have the most active

Exhibit 7-6
CHANGES IN FRIENDSHIP INTERACTIONS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
In the past year, percentage who saw friends outside of school or work at least weekly											
Wave 1	33.5	32.1	31.2	36.5	18.1	26.5	11.5	30.5	8.4	19.4	16.6
	(5.4)	(7.7)	(7.3)	(5.4)	(5.4)	(8.6)	(5.4)	(5.1)	(5.5)	(8.1)	(7.3)
Wave 2	56.2	46.3	30.6	51.6	31.9	41.8	30.4	46.5	19.2	24.4	21.9
	(6.1)	(8.8)	(7.9)	(6.6)	(7.5)	(10.4)	(8.4)	(6.0)	(8.1)	(10.1)	(9.0)
Percentage-point change	**+22.7***	+14.2	-.6	+15.1	+13.8	+15.3	+18.9	**+16.0***	+10.8	+5.0	+5.3
Percentage communicating by computer at least daily											
Wave 1	22.9	31.1	8.8	32.1	24.0	29.2	21.5	7.0	13.9	13.8	27.7
	(5.1)	(8.1)	(4.8)	(6.8)	(8.4)	(8.0)	(4.7)	(5.2)	(8.2)	(6.8)	(8.9)
Wave 2	8.1	21.9	3.1	17.6	16.7	19.7	14.1	17.1	7.4	7.4	33.3
	(3.4)	(7.2)	(2.9)	(5.9)	(7.5)	(6.8)	(4.1)	(7.5)	(6.0)	(5.2)	(11.4)
Percentage-point change	**-14.8***	-9.2	-5.7	-9.1	-14.5	-7.3	-9.5	-7.4	+10.1	-6.5	-6.4

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: *p<.05.

Standard errors are in parentheses.

friendships, with more than half seeing friends often outside of school or work. In contrast, about one-fifth of youth with autism or multiple disabilities and one-fourth of those with traumatic brain injuries see friends often. However, youth with multiple disabilities are the most likely to communicate by computer at least daily (33%), and those with mental retardation are the least likely to do so (3%, p<.05).

Participation in community activities. Significant decreases among youth with disabilities as a whole in the likelihood of their participating in a community group or a volunteer or community service activity after high school are not widespread across disability categories (Exhibit 7-7). Three categories of youth—those with learning disabilities, emotional disturbances, or other health impairments—show significant declines in membership in a community group (18 to 28 percentage points, p<.05 and p<.001). These three categories of youth are joined by those with speech impairments in recording significant declines in volunteer or community services activities (18 to 25 percentage points, p<.05 and p<.01).

In Wave 2, youth with speech, hearing, or orthopedic impairments are the most likely to take part in organized community groups; 42% and 45% of them do so, compared with about half as many youth with mental retardation, emotional disturbances, traumatic brain injuries, or multiple disabilities (p<.05 comparing youth with orthopedic impairments with youth with

Exhibit 7-7
CHANGES IN PARTICIPATION IN COMMUNITY ACTIVITIES, BY DISABILITY CATEGORY

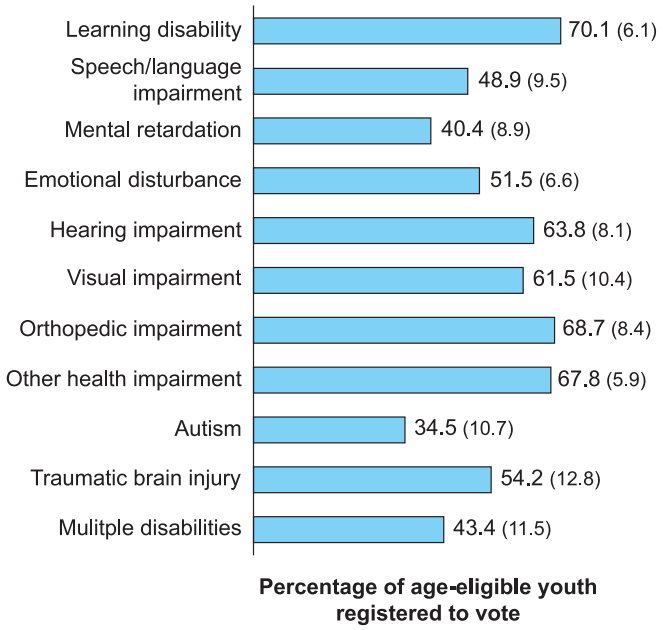
	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties
In the past year, percentage who took part in a:											
Community group (e.g., sports team, hobby club, religious group)											
Wave 1	48.4	51.4	39.1	39.6	49.0	51.2	50.5	54.1	53.4	38.4	47.1
	(5.6)	(7.8)	(7.6)	(5.3)	(6.9)	(9.6)	(8.2)	(5.5)	(9.6)	(10.1)	(9.5)
Wave 2	28.9	41.7	23.8	22.0	41.8	37.2	45.5	26.5	33.1	19.6	22.7
	(5.4)	(8.5)	(7.1)	(4.9)	(7.5)	(9.5)	(8.6)	(5.1)	(9.3)	(8.8)	(8.4)
Percentage-point change	**-19.5***	-9.7	-15.3	**-17.6***	-7.2	-14.0	-5.0	**-27.6*****	-20.3	-18.8	-24.4
Volunteer or community service activity											
Wave 1	46.5	55.9	42.1	37.9	54.9	62.5	55.7	55.5	40.4	36.6	38.6
	(5.6)	(7.8)	(7.7)	(5.3)	(6.9)	(9.3)	(8.2)	(5.5)	(9.4)	(10.0)	(9.3)
Wave 2	26.8	32.7	22.7	20.3	46.9	47.0	39.5	30.2	30.6	36.3	28.7
	(5.4)	(8.2)	(7.1)	(4.8)	(7.7)	(10.2)	(8.4)	(5.4)	(9.4)	(10.8)	(9.3)
Percentage-point change	**-19.7***	**-23.2***	-19.4	**-17.6***	-8.0	-15.5	-16.2	**-25.3****	-9.8	-.3	-9.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Exhibit 7-8
VOTER REGISTRATION STATUS OF YOUTH WITH DISABILITIES



Source: NLTS2 Wave 2 parent/youth interviews.
Standard errors are in parentheses.

traumatic brain injuries). Youth with hearing or visual impairments are the most likely to take part in volunteer or community services activities (47%), and youth with mental retardation or emotional disturbances are the least likely to do so (23% and 20%, respectively, $p<.05$ and $p<.01$ compared with youth with hearing impairments).

Citizenship. Some youth in each disability category who are at least 18 years old are registered to vote (Exhibit 7-8). About two-thirds or more of age-eligible youth with learning disabilities or orthopedic or other health impairments are registered to vote, as are 64% and 62% of youth with hearing or visual impairments, respectively. In contrast, about one-third of youth with autism, 40% of those with mental retardation, and 43% of those with multiple disabilities are registered to vote ($p<.05$ or $p<.01$ compared with youth with learning disabilities).

Considering the negative aspect of citizenship, an increased likelihood of being involved with the criminal justice system as youth with disabilities age is most apparent among youth with other health impairments (Exhibit 7-9). They show a 19-percentage-point increase in having been stopped by police other than for a traffic violation, a 17-percentage-point increase in having been arrested, and a 14-percentage-point increase in having spent a night in police custody ($p<.05$). With these increases, more than half (52%) of youth with other health impairments have been stopped by police, more than one-third (34%) have been arrested, and more than one-fifth (21%) have spent a night in police custody. These rates are higher than those of any other category of youth, with the exception of youth with emotional disturbances. Although for this latter group of youth, criminal justice system encounters have increased only with regard to spending a night in police custody (15 percentage points, $p<.05$), out-of-school youth with emotional disturbances have significantly higher rates of all aspects of criminal justice system involvement than youth with other health impairments, the category with the next-highest rates of such involvement ($p<.01$ or $p<.001$ for all comparisons). For example, by the time youth with emotional disturbances have been out of high school up to 2 years, 58% have been arrested at least once, compared with 34% of youth with other health impairments ($p<.01$) and 6% to 29% of youth in other disability categories ($p<.05$ compared with youth with traumatic brain injuries; $p<.001$ for all other comparisons).

Exhibit 7-9
CHANGES IN CRIMINAL JUSTICE SYSTEM INVOLVEMENT, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabil-ities
Percentage who ever have:											
Been stopped by police other than for a traffic violation											
Wave 1	34.5	10.0	20.9	66.0	16.4	16.6	16.9	32.6	13.1	35.4	14.5
	(5.4)	(4.9)	(6.4)	(5.2)	(5.2)	(7.2)	(6.3)	(5.2)	(6.5)	(9.8)	(6.7)
Wave 2	50.0	27.2	28.6	76.6	28.3	24.0	23.6	51.8	16.0	52.6	19.7
	(5.9)	(7.5)	(7.3)	(4.7)	(6.7)	(8.4)	(7.2)	(5.6)	(7.2)	(11.2)	(7.8)
Percentage point change	+15.5	+17.2	+7.7	+10.6	+11.9	+7.4	+16.7	**+19.2***	+2.9	+17.2	+5.2
Been arrested											
Wave 1	17.5	4.0	7.5	47.2	7.0	1.6	8.8	17.8	4.6	18.6	5.6
	(4.3)	(3.2)	(4.1)	(5.5)	(3.6)	(2.4)	(4.7)	(4.2)	(4.0)	(7.9)	(4.4)
Wave 2	26.1	12.4	13.2	57.6	12.0	5.5	16.8	34.5	6.6	29.4	7.4
	(5.2)	(5.6)	(5.6)	(5.5)	(4.9)	(4.5)	(6.4)	(5.4)	(4.9)	(10.2)	(5.2)
Percentage-point change	+8.6	+8.4	+5.7	+9.6	+5.0	+3.9	+8.0	**+16.7***	+2.0	+10.8	+1.8
Spent a night in jail											
Wave 1	3.7	2.9	4.5	27.3	.0	1.1	.7	6.9	.0	1.9	1.5
	(2.1)	(2.7)	(3.3)	(4.9)		(2.0)	(1.4)	(2.8)		(2.8)	(2.3)
Wave 2	12.5	6.9	11.8	41.9	2.9	2.3	1.3	20.8	1.8	9.4	4.4
	(3.9)	(4.3)	(5.3)	(5.6)	(2.5)	(2.9)	(1.9)	(4.7)	(2.6)	(6.5)	(4.1)
Percentage-point change	+8.8	+4.0	+7.3	**+14.6***	+2.9	+1.2	+.6	**+13.9***	+1.8	+7.5	+2.9
Been on probation or parole											
Wave 1	12.2	3.3	4.2	35.0	1.8	.0	4.2	10.2	.0	11.5	4.1
	(3.7)	(2.9)	(3.2)	(5.3)	(1.9)		(3.4)	(3.3)		(6.5)	(3.8)
Wave 2	18.3	8.9	8.0	42.7	4.2	1.2	6.1	20.6	.0	21.0	5.7
	(4.6)	(4.8)	(4.5)	(5.6)	(3.0)	(2.1)	(4.1)	(4.6)		(9.1)	(4.6)
Percentage-point change	+6.1	+5.6	+3.8	+7.7	+2.4	+1.2	+1.9	+10.4	.0	+9.5	+1.6

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: *p<.05.

Standard errors are in parentheses.

School-Leaving Status Differences in Changes in Leisure Activities, Social Involvement, and Citizenship

Youth with disabilities who complete high school[6] experience greater change in most aspects of their leisure activities and social involvement in the early postschool years than do youth who drop out.

Exhibit 7-10
CHANGES IN USES OF LEISURE TIME BY YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS

	Completers	Dropouts
Percentage spending most of their leisure time:		
Watching TV or videos		
Wave 1	47.1	45.3
	(4.8)	(7.1)
Wave 2	16.4	15.6
	(3.9)	(6.2)
Percentage-point change	**-30.7*** **	**-29.7** **
Using a computer		
Wave 1	39.9	27.0
	(4.7)	(6.3)
Wave 2	17.0	7.8
	(4.0)	(4.6)
Percentage-point change	**-22.9*** **	**-19.2** *
Listening to music		
Wave 1	29.4	25.3
	(4.4)	(6.2)
Wave 2	9.7	10.0
	(3.2)	(5.1)
Percentage-point change	**-19.7*** **	-15.3
Doing hobbies, reading for pleasure		
Wave 1	23.3	19.2
	(4.1)	(5.6)
Wave 2	4.6	8.2
	(2.2)	(4.7)
Percentage point change	**-18.7*** **	-11.0
Talking on the phone with friends		
Wave 1	17.1	13.1
	(3.6)	(4.8)
Wave 2	5.6	4.2
	(2.5)	(3.4)
Percentage-point change	**-11.5** **	-8.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

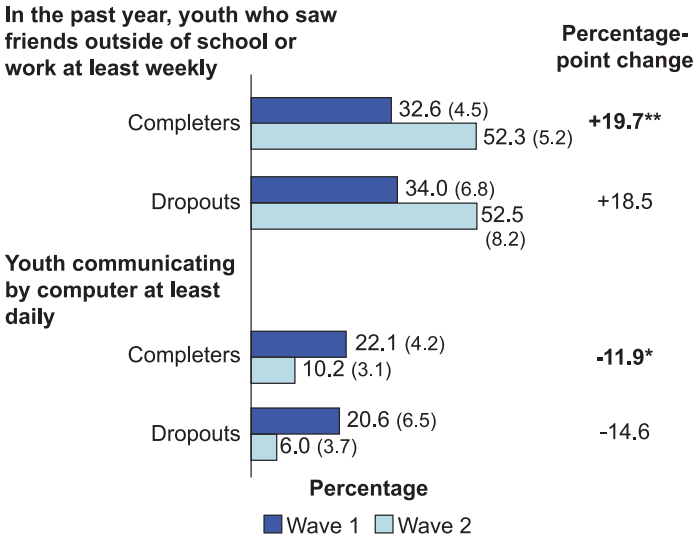
Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Uses of leisure time. Although both high school completers and dropouts with disabilities have experienced sizable declines over time in the likelihood that most of their leisure time is spent watching TV or videos (31 and 30 percentage points, $p<.001$ and $p<.01$; Exhibit 7-10) or using a computer (23 and 19 percentage points, $p<.001$ and $p<.05$), all other changes in leisure activities are apparent only among high school completers. Significant declines, ranging from 12 to 20 percentage points, are apparent in high school completers with disabilities spending most of their leisure time talking on the phone with friends, listening to music, and doing hobbies or reading for pleasure. Despite differences in changes over time, in Wave 2, there are no significant differences in leisure-time pursuits between high school completers and dropouts with disabilities.

[6] Seventy-two percent of the out-of-school youth with disabilities represented in this report completed high school by graduating or receiving a certificate of completion.

Exhibit 7-11
CHANGES IN FRIENDSHIP INTERACTIONS OF YOUTH WITH DISABILITIES, BY SCHOOL LEAVING-STATUS

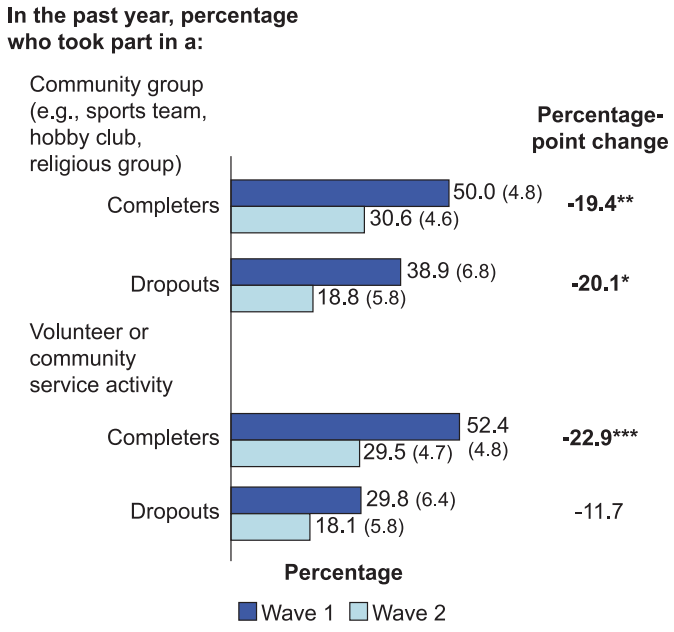


Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Exhibit 7-12
CHANGES IN EXTRACURRICULAR ACTIVITIES OF YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

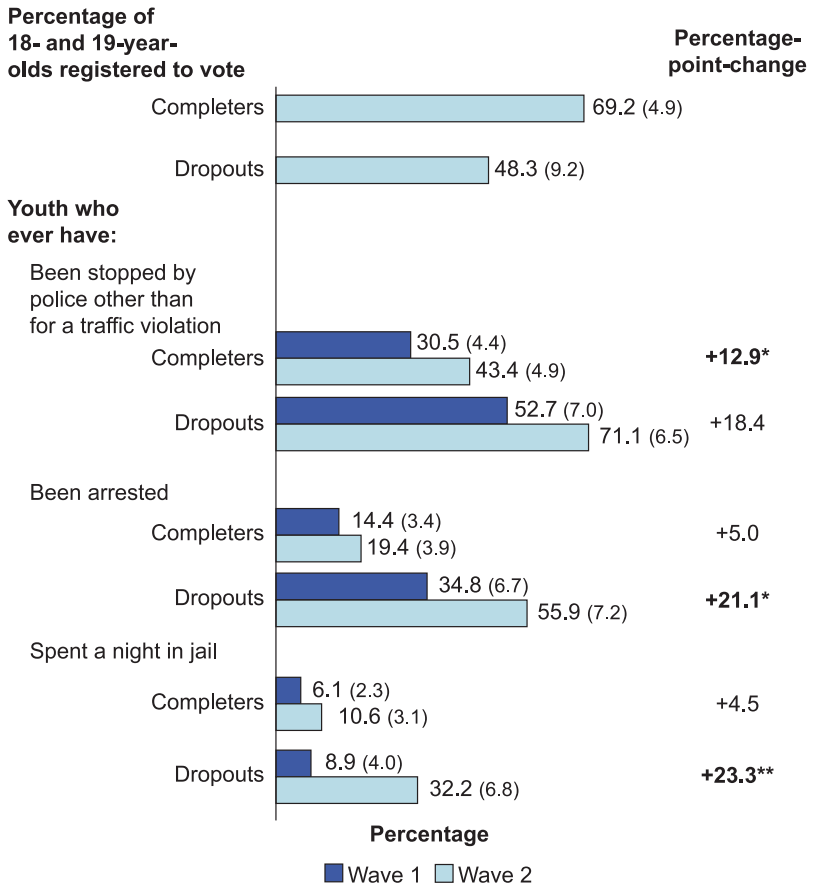
Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Friendship interactions. High school completers with disabilities and their peers who did not complete high school experience similar changes in friendship interactions, although these achieve statistical significance only for the larger group of completers (Exhibit 7-11). High school completers demonstrate a 20-percentage-point increase in the likelihood that they see friends often outside of work or school and a 12-percentage-point decline in electronic communications (p<.01 and p<.05). The rates of participating in these activities for the two groups are similar in Wave 2.

Participation in community activities. Both high school completers and dropouts have experienced declines after high school in the likelihood that they participate in an organized community group (19 and 20 percentage points, p<.01 and p<.05; Exhibit 7-12). Participation in these activities is not significantly different between the two groups at Wave 2. However, high school completers have experienced a drop in their participation in volunteer or community service activities after high school (23 percentage points, p<.001) that is not shared by dropouts with disabilities. The larger decline among completers eliminates the large difference between them in Wave 1 (52% vs. 30%, p<.01).

Exhibit 7-13
CHANGES IN CITIZENSHIP OF YOUTH WITH DISABILITIES, BY SCHOOL-LEAVING STATUS



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Citizenship. High school completers with disabilities who are at least 18 years old are significantly more likely than dropouts to be registered to vote (69% vs. 48%, p<.05; Exhibit 7-13). This pattern is consistent with the general population, in which higher educational attainment also is related to a higher voter registration rate (Center for Information and Research on Civic Learning and Engagement, 2002).

Regarding criminal justice system involvement, neither high school dropouts nor graduates have experienced a significant increase over time in having been on probation or parole. However, on other measures, dropouts with disabilities demonstrate more serious criminal justice system involvement as they age. They show significant increases in the likelihood of both being arrested (21 percentage points, p<.05) and spending a night in jail (23 percentage points, p<.01). High school graduates with disabilities, too, have greater involvement with the criminal justice system over time, but their increase is apparent in being stopped by police for something other than a traffic violation (13 percentage points, p<.05). Despite this increase, graduates have lower rates of criminal justice system involvement of all kinds than do dropouts with disabilities. For example, up to 2 years out of high school, 56% of dropouts have been arrested and 34% have been on probation or parole, compared with 19% and 16% of high school graduates with disabilities (p<.001 and p<.05).

Demographic Differences in Changes in Leisure Activities, Social Involvement, and Citizenship

The changes in leisure and social activities described above are not experienced equally by youth with disabilities who differ in age, gender, household income, or racial/ethnic background.

Age

Uses of leisure time. Older youth with disabilities have experienced greater changes in their use of leisure time over a 2-year period than younger students (Exhibit 7-14). All five of the leisure activities for which there is a significant decline among youth with disabilities as a whole are apparent among those who are 19 years old at Wave 2. Declines range from 15 percentage points (talking on the phone with friends, p<.01) to 38 percentage points (watching TV or videos, p<.001). Declines in four of the activities are apparent among 18-year-olds with disabilities, but with the exception of doing hobbies and reading for pleasure, the declines are smaller than those noted among 19-year-olds and range from 17 to 24 percentage points (p<.01 and p<.05). The significant downward change in leisure activities among older youth is not apparent among youth with disabilities ages 15 through 17, those who have left high school most recently.

Exhibit 7-14
CHANGES IN USES OF LEISURE TIME BY YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2: 15 through 17	18	19
Percentage spending most of their leisure time:			
Watching TV or videos			
Wave 1	37.9	44.2	50.5
	(10.4)	(6.0)	(6.0)
Wave 2	16.3	19.7	12.8
	(8.6)	(5.5)	(4.6)
Percentage-point change	-21.6	**-24.5***	**-37.7*****
Using a computer			
Wave 1	38.4	28.0	43.5
	(10.4)	(5.4)	(6.0)
Wave 2	15.9	10.3	18.6
	(8.5)	(4.2)	(5.4)
Percentage-point change	-22.5	**-17.7****	**-24.9****
Listening to music			
Wave 1	26.1	25.1	32.1
	(9.4)	(5.3)	(5.6)
Wave 2	8.9	8.6	10.9
	(6.6)	(3.9)	(4.3)
Percentage-point change	-17.2	**-16.5***	**-21.2****
Doing hobbies, reading for pleasure			
Wave 1	20.2	20.9	24.3
	(8.6)	(4.9)	(5.2)
Wave 2	5.4	3.9	7.0
	(5.2)	(2.7)	(3.5)
Percentage-point change	-14.8	**-17.0****	**-17.3****
Talking on the phone with friends			
Wave 1	16.6	13.9	17.7
	(8.0)	(4.2)	(4.6)
Wave 2	11.8	5.5	3.0
	(7.5)	(3.2)	(2.3)
Percentage-point change	-4.8	-8.4	**-14.7****

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Friendship interactions. There is less consistency in changes across age groups regarding friendship interactions than is apparent for leisure activities (Exhibit 7-15). The increased likelihood that youth see friends often outside of school or organized groups that is apparent for youth with disabilities as a whole results largely from an increase among those who are 18 years old at Wave 2 (23 percentage points, p<.01). In contrast, the decline in daily computer communication is most evident among 19-year-olds (18 percentage points, p<.01). As with leisure activities, 15- through 17-year-olds do not evidence either of these changes. However, despite experiencing different changes over time, the three age groups do not differ in the frequency of their friendship interactions in Wave 2.

Exhibit 7-15
CHANGES IN FRIENDSHIP INTERACTIONS OF YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2: 15 through 17	18	19
In the past year, percentage who saw friends outside of school or work at least weekly			
Wave 1	37.6 (10.3)	29.7 (5.5)	34.9 (5.8)
Wave 2	41.9 (7.3)	53.0 (6.7)	51.2 (6.7)
Percentage-point change	+12.5	**+23.3****	+16.3
Percentage communicating by computer at least daily			
Wave 1	16.6 (10.4)	18.0 (5.0)	24.9 (5.6)
Wave 2	15.7 (9.4)	10.7 (4.0)	6.8 (3.3)
Percentage-point change	-.9	-7.3	**-18.1****

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following level: **p<.01.

Standard errors are in parentheses.

Exhibit 7-16
CHANGES IN COMMUNITY ACTIVITIES OF YOUTH WITH DISABILITIES, BY AGE

	Age at Wave 2: 15 through 17	18	19
In the past year, percentage who took part in a:			
Community group (e.g., sports team, hobby club, religious group)			
Wave 1	49.1 (10.2)	49.3 (6.0)	43.6 (5.9)
Wave 2	30.7 (10.1)	23.5 (5.4)	31.7 (6.0)
Percentage point change	-18.4	**-25.8****	-11.9
Volunteer or community service activity			
Wave 1	42.7 (10.2)	43.5 (5.9)	48.4 (6.0)
Wave 2	27.4 (10.0)	33.3 (6.0)	19.3 (5.1)
Percentage-point change	-15.3	-10.2	**-29.1*****

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: **p<.01; ***p<.001.

Standard errors are in parentheses.

Participation in community activities. Similar to the changes in friendship interactions, 18- and 19-year-olds with disabilities experience different changes in participation in community activities over a 2-year period (Exhibit 7-16). Eighteen-year-olds at Wave 2 are the only group to experience a significant decline in their participation in organized community groups (26 percentage points, $p<.01$), whereas a significant decline in participation in volunteer or community service activities is evident only among 19-year-olds with disabilities (29 percentage points, $p<.001$). Age groups do not differ significantly in their rates of participation in Wave 2.

Citizenship. As out-of-school youth with disabilities age, they are more likely to be registered to vote. The rate of voter registration is 73% among 19-year-olds, compared with 55% among 18-year-olds ($p<.05$).

There are no differences between age groups of youth with disabilities in changes over time in the likelihood of most aspects of criminal justice system involvement; levels of involvement and changes in those levels over time are not significantly different for youth ages 15 through 17, 18, or 19. Only with regard to spending a night in jail is a difference apparent, with 18-year-olds

Exhibit 7-17
CHANGES IN USES OF LEISURE TIME BY YOUTH WITH DISABILITIES, BY GENDER

	Boys	Girls
Percentage spending most of their leisure time:		
Watching TV or video		
Wave 1	47.7	43.7
	(4.8)	(7.0)
Wave 2	15.6	17.4
	(4.0)	(5.8)
Percentage-point change	**-32.1*** **	**-26.3** **
Using a computer		
Wave 1	39.2	29.9
	(4.7)	(6.5)
Wave 2	17.4	9.7
	(4.2)	(4.5)
Percentage-point change	**-21.8*** **	**-20.2** *
Listening to music		
Wave 1	30.6	23.8
	(4.4)	(6.0)
Wave 2	8.6	11.5
	(3.1)	(4.9)
Percentage-point change	**-22.0*** **	-12.3
Doing hobbies, reading for pleasure		
Wave 1	20.2	26.6
	(3.9)	(6.2)
Wave 2	4.6	6.9
	(2.3)	(3.9)
Percentage point change	**-15.6*** **	**-19.7** **
Talking on the phone with friends		
Wave 1	16.3	15.1
	(3.6)	(5.0)
Wave 2	2.5	9.9
	(1.7)	(4.6)
Percentage-point change	**-13.8*** **	-5.2

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

at Wave 2 showing a significant increase over time (from 7% to 21%, p<.05) that is not shared by younger or older peers (from 9% to 12% among 15- to 17-year-olds, from 6% to 12% among 19-year-olds).

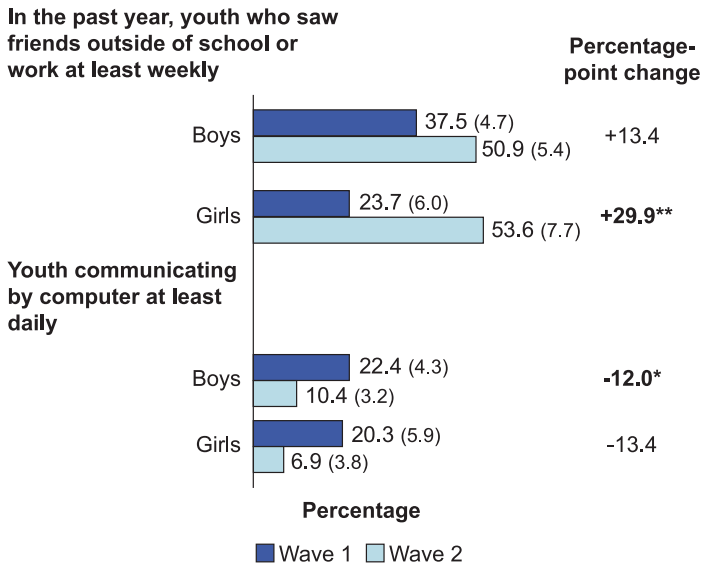
Gender

Some aspects of uses of leisure time, social activities, and citizenship change differently for boys and girls with disabilities when they leave high school.

Uses of leisure time. Boys with disabilities experience changes in their use of leisure time after high school in ways that girls do not when it comes to listening to music (22-percentage-point decline, p<.001) and talking on the phone with friends (14-percentage-point decline, p<.001; Exhibit 7-17). However, boys and girls with disabilities have similar patterns in spending most of their leisure time using a computer (declines of 22 and 20 percentage points, p<.001 and p<.05) and doing hobbies or reading for pleasure (declines of 16 and 20 percentage points, p<.001 and p<.01). They also share the decrease in TV or video watching (declines of 32 and 26 percentage points, p<.001 and p<.01). Despite these differences in changes over time, there are no significant differences in uses of leisure time between boys and girls with disabilities in Wave 2.

Friendship interactions. Frequent friendship interactions increase markedly for girls with disabilities after high school (Exhibit 7-18). Girls show a 30-percentage-point increase in the likelihood of seeing friends at least weekly (p<.01), eliminating the large difference between the genders that was evident in Wave 1. A 12-percentage-point decline in frequent computer use has occurred among boys with disabilities (p<.05). However, these differences in changes over time do not result in differences between the levels of friendship interactions of boys and girls in Wave 2.

Exhibit 7-18
CHANGES IN FRIENDSHIP INTERACTIONS OF YOUTH WITH DISABILITIES, BY GENDER

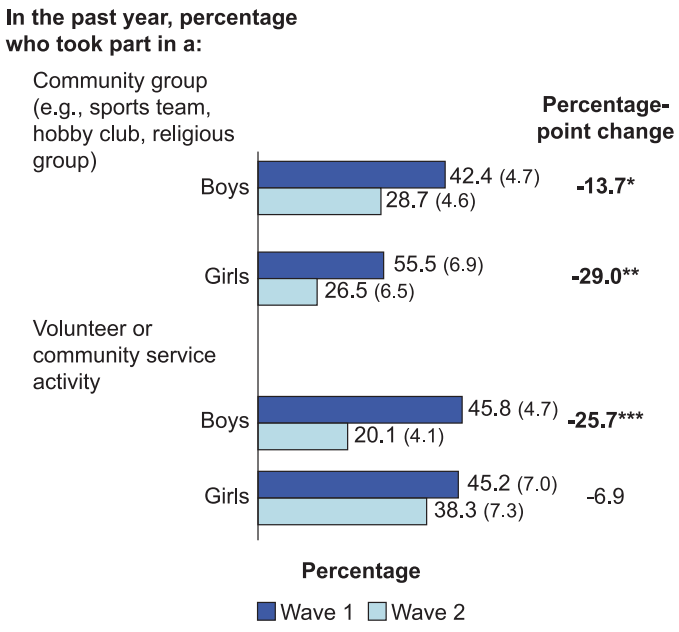


Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Exhibit 7-19
CHANGES IN COMMUNITY ACTIVITIES OF YOUTH WITH DISABILITIES, BY GENDER



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

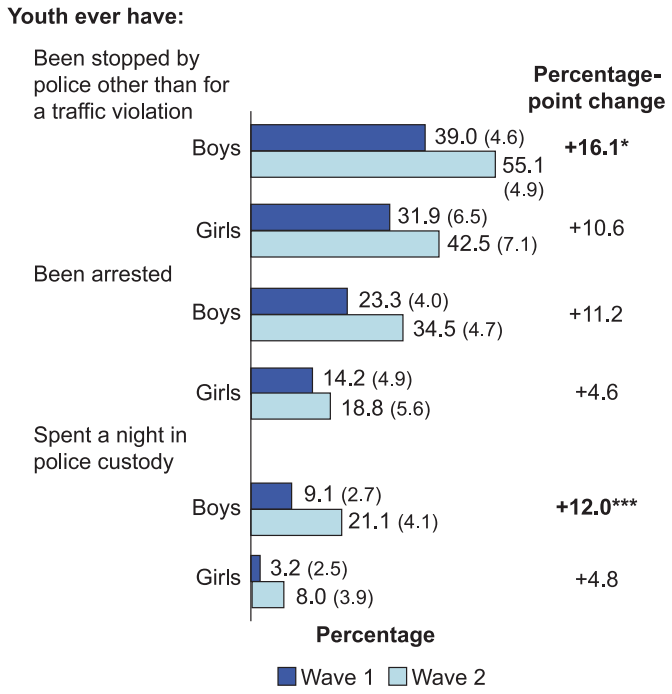
Standard errors are in parentheses.

Participating in community activities. Both boys and girls with disabilities show a decrease in participation in organized community groups (Exhibit 7-19), although the decline among girls (29-percentage points, p<.01) is more than twice that of boys (14-percentage points, p<.05). In contrast, only boys show a significant decline in participation in volunteer or community service activities (26 percentage points, p<.001). Whereas boys and girls had similar rates of participation in such activities in Wave 1, the decline among boys results in their participation rate being significantly lower than that of girls in Wave 2 (20% vs. 38%, p<.05).

Citizenship. Young men and women with disabilities do not differ in their likelihood of being registered to vote; 62% of 18- and 19-year-old men are registered to vote, as are 68% of their female peers.

The significant increase in the likelihood of being stopped and questioned by police other than for a traffic violation and of spending a night in jail that is evident among youth with disabilities as a whole occurs solely among boys (Exhibit 7-20). Boys are 16 percentage points more likely to have been stopped by police at some time by Wave 2 than previously (p<.05), a change not observed for girls. By Wave 2, more than half of boys with disabilities (55%) and 42% of girls have exhibited behavior at least once that has led to them being stopped and questioned by police. Similarly, boys show a significant increase in the likelihood

Exhibit 7-20
CHANGES IN CRIMINAL JUSTICE SYSTEM INVOLVEMENT BY YOUTH WITH DISABILITIES, BY GENDER



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; ***p<.001.

Standard errors are in parentheses.

that they have spent a night in jail (12 percentage points, p<.05), whereas there is no significant change among girls. Their different degrees of change result in boys being significantly more likely than girls to have stayed overnight in jail (21% vs. 8%, p<.05). Although neither gender demonstrates a significant increase in ever having been arrested, boys with disabilities are significantly more likely than girls to have had that experience (34% vs. 19%, p<.05).

Household Income and Racial/Ethnic Background

Youth with disabilities who differ in the income level of their households and/or their racial/ethnic background have experienced changes in uses of leisure time, social activities, and citizenship differently in the early years after high school.

Uses of leisure time. Youth in all income and racial/ethnic groups have experienced significant decreases in spending most of their leisure time watching TV or videos (Exhibit 7-21); the decline is fairly uniform across income groups (25 to 32 percentage points, p<.05 to p<.001), but larger among African-American youth with disabilities (44 percentage points, p<.001) than among white (24 percentage points, p<.001) or Hispanic peers (34 percentage points, p<.05). A decline in doing hobbies or reading for pleasure also affects all racial/ethic groups but is largest among Hispanic youth (34 percentage points, p<.01, compared with 10 and 25 percentage points for white and African-American youth, p<.05 and p<.01). The decline in spending a good deal of leisure time on the phone with friends is evident only for middle-income and white youth (14 and 10 percentage points, respectively, p<.05). Nonetheless there are no significant differences in uses of leisure time across income or racial/ethnic groups in Wave 2.

Exhibit 7-21
CHANGES IN USES OF LEISURE TIME BY YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
Percentage spending most of their leisure time:						
Watching TV or videos						
Wave 1	49.8	44.1	45.5	41.8	59.8	46.4
	(6.9)	(8.0)	(7.1)	(4.8)	(8.8)	(12.0)
Wave 2	17.8	19.5	13.2	17.5	16.3	12.1
	(5.8)	(7.1)	(5.3)	(4.2)	(7.5)	(8.4)
Percentage-point change	**-32.0*** **	**-24.6***	**-32.3*** **	**-24.3*** **	**-43.5*** **	**-34.3***
Using a computer						
Wave 1	23.9	37.6	47.7	37.9	33.6	32.0
	(5.9)	(7.8)	(7.2)	(4.7)	(8.5)	(11.2)
Wave 2	8.6	12.7	18.0	17.9	8.0	8.8
	(4.2)	(6.0)	(6.0)	(4.2)	(5.5)	(7.3)
Percentage-point change	**-15.3***	**-24.9***	**-29.7** **	**-20.0** **	**-25.6***	-23.2
Listening to music						
Wave 1	29.1	23.0	29.7	25.7	33.6	28.9
	(6.3)	(6.8)	(6.6)	(4.2)	(8.5)	(10.9)
Wave 2	11.0	9.1	10.5	8.5	14.2	8.7
	(4.7)	(5.2)	(4.8)	(3.1)	(7.1)	(7.3)
Percentage-point change	**-18.1***	-13.9	**-19.2***	**-17.2*** **	-19.4	-20.2
Doing hobbies, reading for pleasure						
Wave 1	19.1	25.1	20.9	17.2	26.8	39.4
	(5.5)	(7.0)	(5.8)	(3.7)	(8.0)	(11.7)
Wave 2	4.7	3.6	8.2	6.9	2.1	5.0
	(3.2)	(3.3)	(4.3)	(2.8)	(2.9)	(5.6)
Percentage point change	**-14.4***	**-21.5** **	-12.7	**-10.3***	**-24.7** **	**-34.4** **
Talking on the phone with friends						
Wave 1	9.7	17.0	16.2	14.4	20.4	14.8
	(4.1)	(6.1)	(5.3)	(3.4)	(7.3)	(8.5)
Wave 2	5.9	3.3	6.3	4.6	10.3	.5
	(3.6)	(3.2)	(3.8)	(2.3)	(6.2)	(1.8)
Percentage-point change	-3.8	**-13.7***	-9.9	**-9.8***	-10.1	-14.3

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01; ***p<.001.

Standard errors are in parentheses.

Friendship interactions. An increase in the likelihood of seeing friends often outside of school or work has occurred only among the upper-income group (31 percentage points, p<.01; Exhibit 7-22), which has a significantly higher rate of seeing friends often than youth in the lowest-income group (64% vs. 42%, p<.05). An increase in frequent friendship interactions also is apparent among both white and African-American youth with disabilities (17 and 26 percentage points, p<.05). In contrast, the reduction in use of computers for communication reaches statistical significance for none of the income groups and only for white youth among the racial/ethnic groups (13 percentage points, p<.05).

Exhibit 7-22
CHANGES IN FRIENDSHIP INTERACTIONS OF YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
In the past year, percentage who saw friends outside of school or work at least weekly						
Wave 1	25.0	41.6	32.9	39.1	25.2	16.4
	(6.0)	(7.9)	(6.8)	(4.7)	(7.9)	(8.9)
Wave 2	41.9	45.7	64.0	56.4	50.8	33.7
	(7.3)	(8.9)	(7.5)	(5.3)	(10.1)	(12.2)
Percentage-point change	+16.9	+4.1	**+31.1****	**+17.3***	**+25.6***	+17.3
Percentage communicating by computer at least daily						
Wave 1	7.7	23.0	27.6	24.2	13.6	17.1
	(4.2)	(7.0)	(6.6)	(4.4)	(6.9)	(9.7)
Wave 2	2.0	15.0	12.1	11.2	3.5	9.1
	(2.1)	(6.2)	(4.8)	(3.3)	(3.6)	(7.4)
Percentage-point change	-5.7	-8.0	-15.5	**-13.0***	-10.1	-8.0

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01.

Standard errors are in parentheses.

Participation in community activities. Low-income and Hispanic youth with disabilities have not experienced the decreased participation in community groups after high school that is evident among middle- and upper-income youth and both white and African-American youth (Exhibit 7-23). Declines of 27 and 22 percentage points for middle- and upper-income youth with disabilities ($p<.05$) result in very similar levels of involvement in community groups across income levels (23% to 30% participate in Wave 2). A similar pattern is evident in the decline in volunteer or community service activities (30 and 24 percentage points for middle- and upper-income youth, $p<.01$ and $p<.05$). Eighteen- and 32-percentage point declines in community group participation among white and African-American youth with disabilities result in greater similarity in rates of participation across racial/ethnic groups in Wave 2 (18% to 31%), down from the 20-point spread in Wave 1 (29% to 49%). In contrast, only white youth with disabilities show a significant decline in volunteer or community service activities (28 percentage points, $p<.001$), which has eliminated the significant difference between groups in Wave 1.

Exhibit 7-23
CHANGES IN COMMUNITY ACTIVITIES OF YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME AND RACE/ETHNICITY

	Income			Race/Ethnicity		
	Lowest	Medium	Highest	White	African-American	Hispanic
In the past year, percentage who:						
Took part in a community group (e.g., sports team, hobby club, religious group)						
Wave 1	36.3	50.2	51.3	48.8	49.4	29.1
	(6.6)	(8.0)	(7.1)	(4.8)	(8.7)	(10.8)
Wave 2	28.6	23.3	29.5	30.9	17.6	27.0
	(6.4)	(7.2)	(6.7)	(4.7)	(7.2)	(11.0)
Percentage-point change	-7.7	**-26.9***	**-21.8***	**-17.9****	**-31.8****	-2.1
Took part in volunteer or community service activities						
Wave 1	33.7	56.2	54.3	53.6	32.6	28.6
	(6.5)	(7.9)	(7.0)	(4.8)	(8.3)	(10.8)
Wave 2	26.2	26.1	30.5	25.2	33.3	22.5
	(6.4)	(7.5)	(6.9)	(4.5)	(9.0)	(10.4)
Percentage-point change	-7.5	**-30.1****	**-23.8***	**-28.4*****	+.7	-6.1

Sources: NLTS Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistically significant difference in a two-tailed test at the following levels: *p<.05; **p<.01, ***p<.001.

Standard errors are in parentheses.

Citizenship. Regarding income groups, upper-income youth with disabilities are significantly more likely than middle-income peers to be registered to vote in their early years out of high school (74% vs. 51%, p<.05; Exhibit 7-24). They also have a pattern of lower criminal justice system involvement. Although none of the changes over time in indicators of negative citizenship are significant for any income group, there are marked differences between them in Wave 2. By that time, youth with disabilities in the middle-income group are significantly more likely to have been stopped and questioned by police other than for a traffic violation (56%) than either lower-income or upper-income youth (34% and 30%, respectively, p<.05 and p<.01). Similarly, they are more likely than both other groups to have been arrested (49% vs. 28% and 17%, p<.05 and p<.001) and on probation or parole (42% vs. 18% and 9%, p<.05 and p<.001). Upper-income youth with disabilities are the least likely to have experienced these kinds of interactions with police, as well as being significantly less likely than the other groups to have spent a night in police custody (7% vs. 22% and 23% for lower- and middle-income youth, respectively, p<.05). There are no significant changes over time in citizenship for any racial/ethnic group, nor are there differences in Wave 2 between them in the likelihood that they are registered to vote or reported to have been involved at some point with the criminal justice system.

Exhibit 7-24
CHANGES IN CITIZENSHIP OF YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME

	$25,000 or Less	$25,001 to $50,000	More than $50,000
Percentage of 18- and 19-year-olds registered to vote (Wave 2)	60.2 (8.0)	51.0 (9.2)	73.7 (6.9)
Percentage who ever have:			
Been stopped by police other than for a traffic violation			
Wave 1	33.7 (6.5)	56.5 (7.9)	29.7 (6.5)
Wave 2	48.5 (7.0)	71.0 (7.5)	40.4 (7.1)
Percentage-point change	+14.8	+14.5	+10.7
Been arrested			
Wave 1	19.9 (5.5)	36.7 (7.7)	9.3 (4.1)
Wave 2	28.5 (6.3)	49.2 (8.3)	16.6 (5.4)
Percentage-point change	+8.6	+12.5	+7.3
Spent a night in police custody			
Wave 1	10.9 (4.3)	10.4 (4.9)	2.4 (2.2)
Wave 2	22.2 (5.8)	23.4 (7.0)	7.2 (3.8)
Percentage-point change	+11.3	+13.0	+4.8
Been on probation or parole			
Wave 1	14.9 (4.9)	25.6 (7.0)	6.2 (3.4)
Wave 2	17.8 (5.4)	41.7 (8.2)	9.1 (4.2)
Percentage-point change	+2.9	+16.1	+2.9

Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.
Standard errors are in parentheses.

Individual and Household Factors Related to Variations in Social Involvement and Citizenship

The discussion thus far has demonstrated that a variety of aspects of the use of leisure time and social involvement differ for out-of-school youth with different primary disability classifications, modes of school leaving, and demographic characteristics. However, several of these characteristics are intertwined. For example, the proportion of youth who are male is much higher in some disability categories (e.g., emotional disturbance and autism) than others (e.g., hearing or visual impairments) (Marder, Levine, et al., 2003). Similarly, African-American youth are larger proportions of youth with mental retardation than of those with other health impairments (Marder, Levine, et al., 2003). Thus, it is difficult to determine how much of the variation in the experiences of youth with disabilities after high school relates to the nature of their disabilities or to other differences between them.

Multivariate analysis approaches are appropriate for disentangling the complexities of these kinds of relationships. This section focuses on one positive and one negative measure of youth's experiences after high school—whether youth see friends outside of school and organized group activities at least weekly and whether they have ever been arrested. Analyses address the question "What individual and household characteristics and experiences are associated with variations in the likelihood that youth with disabilities have active and positive social lives in their early years after high school?"[7] Because these measures are dichotomous, logistic regression analysis is the appropriate multivariate analysis approach. It estimates the magnitude

[7] Please see Appendix B for descriptions of the independent variables used in these analyses.

and direction of relationships to the social involvement measure of numerous independent variables,[8] statistically holding constant the other factors in the analysis.

Only a few of the several factors related to youth's disabilities, demographics, and experiences have significant relationships to the probability that out-of-school youth with disabilities have active social lives or have been subject to arrest (Exhibit 7-25). Regarding regularly seeing friends, the only relationships involve the youth's primary disability and functioning. Relative to youth with learning disabilities, those with orthopedic impairments, autism, or multiple disabilities are between 14 and 21 percentage points less likely to see friends outside of school and organized groups at least weekly ($p<.05$ and $p<.01$), independent of other differences between them. Youth in other disability categories and those with ADD/ADHD are no more or less likely to be socially active than youth with learning disabilities. Further, independent of the nature of the disability, disabilities that affect a larger number of domains reduce the likelihood that youth will be socially active by about 4 percentage points. In contrast, having high social skills ratings is associated with an 8-percentage-point higher likelihood of seeing friends often than having poor social skills. These relationships are similar to those found in analyses of frequent friendship interactions among secondary school students with disabilities (Marder, Wagner, & Sumi, 2004).

No demographic factors are related to the likelihood of out-of-school youth with disabilities seeing friends frequently, including income, which could be expected to support a more active social life. These findings are somewhat different from similar analyses of secondary school students with disabilities, in which boys were more likely than girls to see friends often (Marder et al., 2004). The fact that there is no independent gender difference among out-of-school youth with disabilities is consistent with the sizable increase between Waves 1 and 2 in frequent friendship interactions noted earlier for girls. Active informal friendships do not appear to be affected by the way in which youth leave school or the length of time youth have been out of high school, at least in the brief 2-year period addressed in these analyses. Further, neither holding a job nor going to postsecondary school is associated with the frequency of friendship interactions. Thus, active informal friendships appear to be a complement to engagement in the community.

In contrast to relationships noted above, disability and functioning factors are less strongly related to the likelihood that youth with disabilities have been subject to arrest. Only youth with traumatic brain injuries differ significantly from those with learning disabilities in the likelihood of arrest; other factors being equal, youth with traumatic brain injuries are 18 percentage points more likely to have been arrested ($p<.05$). Among the indicators of functioning, only the level of social skills is related to arrest, with youth who have high social skills being 15 percentage points less likely to be arrested than youth with low social skills ($p<.001$), controlling for other differences between them.

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[8] The following variables are included in the logistic regression analysis simultaneously: dichotomous variables for disability category; whether the youth has ADD/ADHD; the number of functional domains affected by disability; scores on the self-care, functional cognitive, and social skills scales; age; gender; dichotomous variables indicating whether the youth is African-American or Hispanic; household income; head of household education; school-leaving status; year of school leaving; and whether the youth has a job or is enrolled in a postsecondary school. Appendix B has a discussion of the measurement of these variables and the rationale for their inclusion in the analysis.

Exhibit 7-25
DIFFERENCES IN SOCIAL INVOLVEMENT ASSOCIATED WITH INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS OF YOUTH WITH DISABILITIES[a]

	Estimated Percentage-Point Difference in Probability of:		
	Seeing Friends at Least Weekly	Ever Having Been Arrested	Comparison Categories
Disability and Functioning			
Speech/language impairment	-3.0	.0	vs. learning disability[a]
Mental retardation	-7.9	-.6	vs. learning disability
Emotional disturbance	-2.2	10.0	vs. learning disability
Hearing impairment	-3.9	9.9	vs. learning disability
Visual impairment	0.3	-3.0	vs. learning disability
Orthopedic impairment	**-14.4***	3.4	vs. learning disability
Other health impairment	-2.5	9.0	vs. learning disability
Autism	**-21.1****	.5	vs. learning disability
Traumatic brain injury	-5.3	**18.4***	vs. learning disability
Multiple disabilities/deaf-blindness	**-17.0****	-2.4	vs. learning disability
ADD/ADHD	3.1	.2	Yes vs. no
Number of problem domains	**-4.1***	-2.2	3 vs. 1 domain
Self-care skills	3.8	8.8	High vs. low (8 vs. 4)
Functional cognitive skills	2.1	11.7	High vs. low (15 vs. 7)
Social skills	**7.6***	**-14.6*****	High vs. low (27 vs. 17)
Demographics			
Age at Wave 2	2.5	-2.1	19 vs. 17
Gender	-5.1	**8.4***	Male vs. female
African-American	4.4	-1.0	vs. white
Hispanic	-1.9	4.2	vs. white
Household income	2.0	-.8	$55,000 to $59,999 vs. $20,000 to $24,999
Head of household education	4.2	1.5	Bachelors degree or more vs. not a high school graduate
Youth's Experiences			
Completed high school	-4.5	**-10.2***	Yes vs. no
Left secondary school in 2002-03	-2.2	-6.1	Yes vs. no (2002-2003 vs. earlier)
Attends postsecondary school	1.3	-8.1	Yes vs. no
Currently has a paid job	4.3	2.9	Yes vs. no
Ever was suspended or expelled from school	NA	**7.5***	Yes vs. no
Ever was retained at grade level	NA	**15.0*****	Yes vs. no

Exhibit reads: The probability of seeing friends outside of school and organized activities at least weekly of youth with orthopedic impairments is 14.4 percentage points lower than the probability of youth with learning disabilities, other factors being equal. The probability of having been arrested is 15 percentage points higher for youth who ever were retained at grade level.

[a] Multivariate analyses require that for categorical variables, each category be compared with another specified category. Learning disability was chosen as the category against which to compare the relationships for other disability categories because it is the largest category and, therefore, most closely resembles the characteristics of youth with disabilities as a whole.

NA: Not included in analysis.

*p<.05; **p<.01; ***p<.001.

In addition, demographic and experiential factors come into play. As is true in the general population (Snyder, 2002), young men with disabilities are 8 percentage points more likely than young women to have been arrested ($p<.05$), other factors held constant. Contrary to hypotheses, neither household income, head of household education, nor racial/ethnic minority status is related to variations in the likelihood of arrest.

However, three measures of youth's prior school experiences relate to the likelihood of arrest. Having had academic and disciplinary problems in school both bode ill for criminal justice system involvement. Those who ever were suspended or expelled from school are more likely to have gotten into trouble with the law, independent of other factors (8 percentage points, $p<.05$), and those who have been held back one or more grades in school are more likely to have been subject to arrest (15 percentage points, $p<.001$). Interestingly, this measure of academic difficulty has twice as much impact on the likelihood of arrest as the measure of behavioral difficulties at school. Finally, high school completers are significantly less likely than youth with disabilities who did not finish high school to have been arrested (10 percentage points, $p<.05$).

The relationships noted here may help explain why the high rate of arrest among youth with emotional disturbances that is noted in bivariate analyses is not supported in multivariate analyses. Youth with emotional disturbances tend to have lower social skills than youth in other disability categories and are more likely to be male and a high school dropout; analyses suggest that it is these factors that relate to the likelihood of arrest, rather than the classification of emotional disturbance itself.

Finally, it is important to note that although the factors related to active friendships and arrests explain a statistically significant portion of the variation in these experiences (PI=.12 for frequent friendship interactions and .30 for arrests[9]), they still leave much of the variation in those experiences unexplained. As noted above, all the explained variation in the likelihood of frequent friendship interactions is attributable to factors related to disability and functioning; these factors account for .19 of the .30 portion of variation explained in the likelihood of arrest. Adding household demographics increases the PI for arrests to .23, and adding youth's experiences increases it to .30.

Summary

The focus of this report—the 2-year time period during which most youth with disabilities considered here left high school—is associated with several changes in their leisure and social lives. Passive uses of leisure time, such as watching television or videos and listening to music, have declined, as have electronic forms of communication. These changes are most evident for youth with learning disabilities or other health impairments, as well as youth who completed high school rather than dropping out. In contrast, out-of-school youth with disabilities are seeing friends regularly outside of school or group activities much more often than they were 2 years earlier. However, this move toward more active informal friendships is not shared by youth with

[9] Because logistic regression analyses do not produce the typical measure of explained variation (r^2), an alternative statistic was calculated for the friendships and arrests analyses, which indicates the "predictive improvement," or PI, that can be obtained by adding an independent variable to a logistic regression. Possible PI values range from 0 to 1 in a similar way to conventional r^2 statistics. See Appendix A for a more complete description of PI.

orthopedic impairments, autism, or multiple disabilities, who are much less likely to see friends often than are youth with learning disabilities, other differences between them held constant. Only between 20% and 30% of out-of-school youth in these categories see friends outside of school or work at least weekly. No differences are apparent for youth who differ in functional abilities or demographic characteristics.

At the same time that informal friendships have become more active, participation in the community in the form of organized community groups has declined, particularly for youth with learning disabilities, emotional disturbances, or other health impairments and among girls. A marked drop in volunteer and community service activities also is noted. However, most youth with disabilities are accepting a particularly important responsibility of citizenship; 64% of those 18 or older are registered to vote, including more than two-thirds of those with learning disabilities or orthopedic or other health impairments. Voter registration rates are below 50% for out-of-school youth with speech impairments, mental retardation, autism, or multiple disabilities and for youth with disabilities who did not complete high school.

Unfortunately, positive forms of social interaction and citizenship are offset for youth with disabilities who have been involved with the criminal justice system. By the time they have been out of secondary school up to 2 years, 29% have been arrested at least once and 20% have been convicted and are on probation or parole. The likelihood of arrest is particularly high for those with low social skills, boys, youth who did not finish high school, and those who had both academic and behavioral difficulties while in high school—characteristics common to youth with emotional disturbances, who have the highest rate of arrest of any disability category.

8. MOVING ON

By Mary Wagner

As noted in Chapter 1, the recent reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004) affirms that the primary purpose of the free appropriate public education guaranteed to children and youth with disabilities is to "prepare them for further education, employment, and independent living" [Sec. 602(d)(1)(A)]. This report addresses the question "How do young people with disabilities fare in these domains in their early years after high school?"

In response to that question, the report documents the experiences of youth with disabilities who have been out of secondary school up to 2 years, focusing on the changes in their experiences that have occurred between 2001 and 2003, a period in which the large majority of these youth left high school. Experiences with postsecondary education, employment, social involvement, and aspects of emerging independence, summarized in Exhibit 8-1, are described, as well as aspects of youth's individual and household characteristics and prior experiences that are related to differences in their experiences in the early post-high-school years. This chapter summarizes the key themes that emerge.[1]

Youth Are Engaged in School, Work, and Preparation for Work

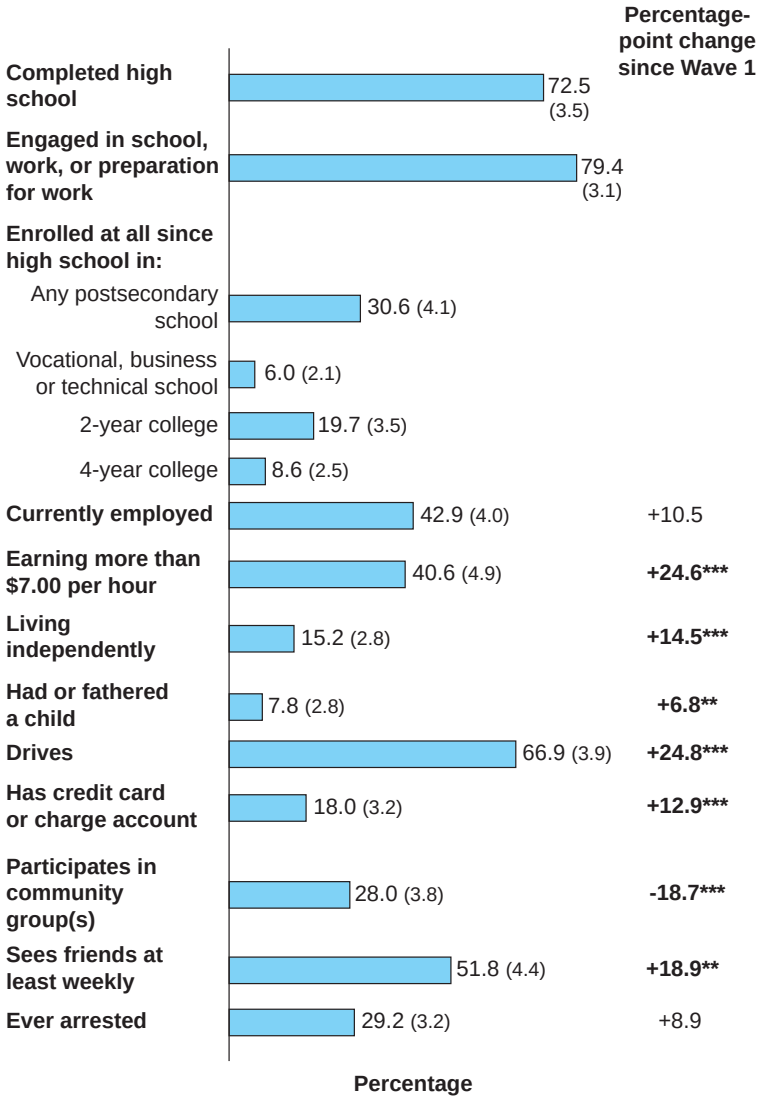
The early postschool activities of the large majority of out-of-school youth with disabilities affirm that their secondary school years have, indeed, prepared them for further education and employment. Since leaving high school, almost 8 in 10 out-of-school youth with disabilities have been engaged in postsecondary education, paid employment, or training to prepare them for employment. Employment is the most common activity among out-of-school youth with disabilities; about 7 in 10 have been employed since leaving high school, including about half of youth with disabilities for whom employment is the sole mode of engagement in the community. About 3 in 10 out-of-school youth with disabilities have attended a postsecondary school since leaving high school, with about one-fifth both going to school and working. Most of the 21% of youth with disabilities who have not been engaged in school, work, or job training reported spending most of their time looking for work.

Work: A Fact of Life for Most Youth with Disabilities

As noted above, most out-of-school youth with disabilities have been engaged in paid employment at some time since leaving high school, and more than 4 in 10 were employed at the time of the Wave 2 interview. This rate is substantially below the 63% employment rate of same-age out-of-school youth in the general population. Further, leaving high school has not resulted in a statistically significant increase in the rate of current employment for out-of-school youth with disabilities.

[1] Outcomes of youth with disabilities represented in NLTS2 are not compared with those reported for NLTS because differences in the age groups included in the two studies make straightforward comparisons misleading. A subsequent report will present findings of analyses using the adjustments necessary for accurate comparisons between NLTS and NLTS2.

Exhibit 8-1
SUMMARY OF KEY EARLY POSTSCHOOL OUTCOMES OF OUT-OF-SCHOOL YOUTH WITH DISABILITIES



Sources: NLTS2 Wave 1 parent interviews and Wave 2 parent/youth interviews.

Statistical significance: **p<.01; ***p<.001.

Standard errors are in parentheses.

However, other aspects of their employment experiences have changed. Out-of-school youth with disabilities work more and earn more than they did 2 years earlier. There has been a substantial increase in youth with disabilities working full-time, so that in Wave 2, 40% are doing so. Wage increases have resulted in fewer than 1 in 10 out-of-school youth with disabilities earning less than the minimum wage and 4 in 10 earning more than $7.00 per hour. In fact, the average wage earned by working out-of-school youth with disabilities is $7.30, $1.30 more than they earned 2 years earlier. Much of this increase may reflect a shift in the kinds of jobs youth hold. There has been a dramatic decline in young women with disabilities working in personal care jobs, including babysitting, and an increase in young men with disabilities working in trades (e.g., carpentry, plumbing), both of which would put upward pressure on wages. Overall, three-fourths of working youth reported believing they are well paid.

Despite wage increases, however, receiving benefits as part of a total compensation package is not common; about one-third of out-of-school youth with disabilities receive any benefits (i.e., paid vacation or sick leave, health insurance, or retirement benefits). Receiving accommodations for their disabilities on the job is even less common; only 4% of working youth with disabilities receive accommodations for their disabilities, largely because almost seven out of eight youth have employers who are unaware of their disabilities. Thus, among those whose employers are aware of their disabilities, 25% are receiving workplace accommodations for them.

These characteristics of the jobs of working out-of-school youth with disabilities add up to an employment experience that most youth find satisfying. More than 8 in 10 working out-of-school youth with disabilities reported liking their job; half of those reported liking it "very much." Almost all youth reported being treated well at work, and almost two-thirds reported that they have opportunities to advance there; almost 60% have received a wage increase or promotion already. These early work experiences are just the first step toward regular paid employment, which more than 90% of out-of-school youth with disabilities were expected by their parents to achieve eventually.

A Slow Start toward Postsecondary Education

When out-of-school youth with disabilities were still in high school, about three-fourths had postsecondary education as a goal for their early postschool years, and 60% had parents who expected that they would pursue their educations after high school. Up to 2 years after high school, however, only one in three have been enrolled in any kind of postsecondary school or program since high school; one in five are enrolled in Wave 2. This rate of current postsecondary school enrollment is half the rate of same-age youth in the general population. Although the coming years may well see an increase in out-of-school youth with disabilities achieving their intended pursuit of postsecondary education, the early years after high school suggest they are not rushing to continue with school.

Two-year or junior colleges are the most common postsecondary schools attended by youth with disabilities; 20% have attended one at some time since leaving high school, and 10% are attending one currently. In fact, youth with disabilities are about as likely to be going to a 2-year or junior college as youth in the general population. Rates of attendance at 4-year colleges or universities tell a different story, however. Fewer than 1 in 10 youth with disabilities have attended such a school, and 6% are doing so in Wave 2, compared with 28% of same-age youth in the general population. About 5% of youth with disabilities attend postsecondary vocational, business, or technical schools.

When youth with disabilities do attend postsecondary school, almost three-fourths go full-time and about 8 in 10 are enrolled consistently, rather than a semester or quarter here and there. Further, about two-thirds of postsecondary students with disabilities pursue their studies without benefit of accommodations from their schools. As with accommodations from employers, by far the greatest reason for students' not receiving accommodations is that their postsecondary schools are unaware of their disabilities. In fact, about half of postsecondary students with disabilities reported that they do not consider themselves to have a disability, and another 7% acknowledged a disability but have not informed their schools regarding it. Only 40% of postsecondary students with disabilities have informed their schools of their disabilities. Thus, the 35% who receive accommodations are 88% of those whose schools are aware of their disabilities.

Independence Emerging on Several Dimensions

In their first few years out of high school, youth with disabilities demonstrate growing independence on many fronts. They are about as likely as youth in the general population to be living away from their parents' home; almost one-fourth do so, a significant increase from 2 years earlier. The ability of youth with disabilities to live independently is enhanced by the

sizable increase over time in the proportion of age-eligible youth with disabilities who have driving privileges; two-thirds can drive, whereas fewer than half could do so 2 years earlier. Personal financial management tools also are being used by more youth with disabilities; about one-third have personal checking accounts, and almost one in five have a credit card or charge account in their own name, significantly more youth than 2 years previously.

Despite these gains in some kinds of independence, in other areas there may be cause for concern. For example, 7% of 15- through 19-year-old out-of-school youth with disabilities reported being married or in a marriage-like relationship, and 8% reported having had or fathered a child; more than half of these very young parents are single. Although these rates of marriage and parenting are similar to those for the general population, they connote a kind of responsibility that may be difficult for young people to handle well. These challenges may be exacerbated by the fact that two-thirds of out-of-school youth with disabilities who have independent households earn less than $5,000 per year.

Leisure Activities and Social Interactions Are Changing

Leaving high school is associated with a reduction among youth with disabilities in pursuing a variety of passive activities with most of their leisure time, including watching TV or videos and using a computer. Sizable reductions in participation in organized groups and volunteer activities also are evident. In Wave 2, about one-fourth of out-of-school youth with disabilities belong to organized community groups, and a similar share take part in volunteer activities, down from 45% pursuing each activity in Wave 1. It appears that some of the time freed up by these reductions in leisure and organized activities is being invested in more frequent contacts with friends. Just over half of youth with disabilities reported seeing friends at least weekly outside of organized groups and any school they may attend, an increase from about one-third of youth seeing friends at least weekly 2 years earlier.

This shift away from the prosocial activities often associated with organized, community-focused groups and volunteerism toward a greater time investment in informal get-togethers with friends that is evident among out-of-school youth with disabilities may be worrisome. Earlier analyses from NLTS demonstrated that belonging to organized groups was strongly associated with more positive outcomes for youth with disabilities in their early postschool years, including greater postsecondary education enrollment and independent living (Wagner, Blackorby, Cameto, & Newman, 1993). Seeing friends often had quite the opposite relationships; those who saw friends more than 5 days a week were less likely to enroll in postsecondary education, independent of differences in their academic achievement or school completion status (Wagner, Blackorby, et al., 1993). Further tracking of the experience of out-of-school youth with disabilities represented in NLTS2 will reveal whether these changes in their social activities are sustained and whether they relate to postschool outcomes in the same ways identified in NLTS.

Citizenship: Indicators Are Mixed

NLTS2 has investigated both a positive indicator of citizenship—youth's being registered to vote—and a negative aspect—involvement with the criminal justice system. Findings suggest that youth with disabilities are as likely to be registered to vote as youth in the general population. Overall, 64% of 18- and 19-year-old out-of-school youth with disabilities were reported to have accepted the responsibility of citizenship that is inherent in registering to vote.

However, the 2-year period during which most of these out-of-school youth with disabilities left high school also has seen an increase in some kinds of involvement with the criminal justice system. About half of youth have been stopped by police for other than a traffic violation, and 16% have spent a night in jail, both significant increases in this 2-year period. Further, 29% of out-of-school youth with disabilities have been arrested, and one in five have been on probation or parole. Although these experiences are cause for concern for any youth, rates of arrest and being on probation or parole have not increased markedly in the 2 years during which most youth with disabilities left high school, and the arrest rate is not significantly different from that of same-age out-of-school youth in the general population.

Results Associated with Dropping Out of School

Almost three-fourths of youth with disabilities who have been out of secondary school up to 2 years finished high school; of those youth, 94% graduated with a regular diploma, according to parents, and the rest received a certificate of completion. However, 28% of out-of-school youth left high school without finishing. This has not been an irrevocable decision for the 2% of youth with disabilities who earned a GED within 2 years of leaving high school.

The difference in the high-school-leaving status of youth with disabilities is associated with marked differences in their experiences in their early postschool years. Those who dropped out are significantly less likely to be engaged in school, work, or preparation for work shortly after high school than are school completers; two-thirds of dropouts have been engaged in these activities, compared with almost seven out of eight school completers.

Not surprisingly, the forms of engagement among dropouts are much less likely to include postsecondary education than among school completers. In fact, controlling for other differences between dropouts and completers with disabilities, including their functional cognitive abilities and previous academic achievement, dropouts are 18 percentage points less likely to have enrolled in a 2- or 4-year college shortly after high school than are school completers. Because the absence of a high school diploma precludes them from attending a 4-year college, their postsecondary education largely is limited to vocational, business, or technical schools; 8% of dropouts have attended such schools, and 1% have attended a 2-year college.

The limitations in their education do not appear to have immediate negative impacts on the ability of dropouts with disabilities to find jobs. For example, the rate of holding a paid job since high school among both dropouts and school completers is about 85%; however, dropouts are much more likely to have work be their only form of engagement in the community, whereas completers are more likely to combine work with postsecondary education. Without postsecondary education and employment competing for time, dropouts with disabilities tend to work more hours per week (an average of 34 vs. 27 for school completers). Because dropouts and school completers earn quite similar hourly wages, the longer hours worked by dropouts result, in the short run, in higher total earnings, on average, than those of completers.

The higher earnings of dropouts are being used to support independent households and children to a greater degree than is evident among school completers. More than one-fourth of dropouts with disabilities are living independently with a spouse or partner, and 19% are parenting. These rates of independent living and parenting are more than four times those of youth with disabilities who completed high school. Yet dropouts are less likely than school completers to have such supports for independence as a driver's license or a checking account.

The social lives of youth with disabilities who did and did not finish high school are quite similar; their involvement in organized groups and volunteer activities and the frequency with which youth with disabilities see friends up to 2 years after leaving high school are not different. However, both the positive and negative aspects of citizenship differ significantly between the two groups. Dropouts with disabilities are much less likely than those who completed high school to be registered to vote (fewer than half are, compared with more than two-thirds of school completers). Of particular cause for concern is the much higher rate of criminal justice system involvement among dropouts with disabilities; more than half have been arrested, and nearly one-third have spent a night in jail, three times the rates of these experiences among youth with disabilities who finished high school. It is clear that not all of this large difference between the two groups in criminal justice system involvement results from the difference in their school-leaving status; they also differ in the prevalence of particular disabilities in the two groups, their academic histories, and some dimensions of their functioning. Nonetheless, controlling for other differences between them, dropouts are 10 percentage points more likely to have been arrested than youth with disabilities who finished high school.

In sum, dropouts with disabilities are finding some success in the employment arena shortly after high school; however, examination of other aspects of their lives reveals cause for concern. In the long run, the absence of a high school diploma and further postsecondary education is likely to have serious negative implications for the ability of youth who dropped out to find and keep jobs that pay a living wage. A criminal record also may limit the employability of many dropouts with disabilities. In addition to the stresses that are inherent in raising children, early parenting will put further economic pressure on working youth with disabilities who did not finish high school.

Disability Has Differential Effects across Outcome Domains

As with all aspects of the lives of youth with disabilities that are being investigated in NLTS2, differences across disability categories are dramatic. However, the categories of youth who stand out differ with the domain of experience being examined, resulting in markedly different patterns of experience for youth in particular disability categories, as noted below.

Youth with Learning Disabilities or Other Health Impairments

These two categories of youth have similar experiences in the early years after high school, and because those with learning disabilities are the largest disability category, this group of youth has a pattern of experience most like that of youth with disabilities as a whole, with a few exceptions. About three-fourths of out-of-school youth with learning disabilities or other health impairments have completed high school, almost all of those with a regular diploma. The large majority are engaged in school, work, or preparation for work, and they are among the most likely to be engaged in employment only. About one-third were expected by their parents "definitely" to go on to postsecondary education after high school, and about that many have done so within 2 years of leaving high school. Junior college is their typical pursuit. Youth with learning disabilities or other health impairments have experienced among the broadest changes in their leisure-time and friendship pursuits, with large reductions in passive leisure activities (e.g., watching television or using a computer) and large increases in the frequency of seeing friends. However, other aspects of their community and social activities are potentially troublesome.

Although these youth are among the most likely to be registered to vote, they also have experienced the largest declines in participation in prosocial organized groups and volunteer activities. Most troubling is that youth with other health impairments have experienced the only significant increase in arrest rates and, together with youth with learning disabilities, are surpassed only by youth with emotional disturbances in the likelihood of being involved with the criminal justice system. This uneven record of experiences across outcome domains testifies to the "floundering" many youth experience before finding solid footing in the adult world.

Youth with Emotional Disturbances

More than a decade ago, when NLTS reported on the early postschool experiences of youth with disabilities nationally, it noted that for youth with emotional disturbances, "their difficulties in transition are particularly troubling" (Wagner, 1991a, p. 11-3). A similar conclusion can be reached from NLTS2 findings. Youth with emotional disturbances are the most likely already to be out of secondary school, with 44% of those leaving school without finishing, the highest dropout rate of any category of youth with disabilities. Along with youth with mental retardation, school completers with emotional disturbances are the least likely to have graduated with a regular diploma. The challenges of being out of school without a high school diploma are compounded for many youth with emotional disturbances by the fact they are "on their own" in many other respects. Thirty-five percent no longer live with parents, the largest proportion of any category of youth, and they are the only group to have experienced a significant increase in the likelihood of living in "other" arrangements, including in criminal justice or mental health facilities, under legal guardianship, in foster care, or on the street. They also have experienced the largest increase in their rate of parenting, 10 percentage points, bringing to 11% the proportion of youth with emotional disturbances reported to have had or fathered a child.

One-third of these youth have not found a way to become engaged in their community since leaving high school; for those who have, employment is the usual mode of engagement. Although more than 6 in 10 youth with emotional disturbances have been employed at some time since leaving high school, only about half as many are working currently, attesting to the difficulty many of these youth have in keeping a job. Only about one in five have been enrolled in any kind of postsecondary education since leaving high school, indicating that few youth in this category are getting the education that might help them find and hold better and more stable jobs. Although youth with emotional disturbances are by far the most likely to be rated by parents as having low social skills, they also are among the most likely to see friends often, with the potentially negative consequences noted earlier. They also are among the least likely to take part in prosocial organized community groups or volunteer activities or to be registered to vote. Most troublesome, however, is that they far surpass any other group of youth in their involvement with the criminal justice system. More than three-fourths have been stopped by police other than for a traffic violation, 58% have been arrested at least once, and 43% have been on probation or parole, although these rates are not significantly higher than for these youth 2 years earlier. A pattern of early school leaving, low levels of social integration in the community, and criminal justice system involvement does not bode well for youth with emotional disturbances as they move further into their adult lives.

Youth with Mental Retardation or Multiple Disabilities

These are the categories of youth mostly likely to be reported to have low functional cognitive skills and to have difficulty communicating, functional limitations that can affect all aspects of life and set them apart from other youth with disabilities. For example, these categories of youth are among the least likely to be out of school as of summer 2003, consistent with their tendency to remain in high school until they reach age 21 (Wagner, 1991b). Along with youth with emotional disturbances, out-of-school youth with mental retardation or multiple disabilities are the least likely to have completed high school. Among completers, they are among the least likely to have graduated with a regular diploma. Their rates of engagement in school, work, or preparation for work shortly after high school are the lowest of all disability categories, yet youth with mental retardation are among the most likely to be living on their own and to be parenting. Few have tools to support that independence, including driving privileges or checking accounts.

The social lives of youth with mental retardation or multiple disabilities also are affected by their disabilities. They are among the least likely to see friends frequently outside of groups or school activities. In fact, independent of other differences in functioning between them, youth with multiple disabilities are 17 percentage points less likely to see friends often than are youth with learning disabilities, and when more functional domains are affected by their disabilities, the likelihood of frequent friendship interactions falls even lower. Youth with mental retardation and those with multiple disabilities also are among the least likely to take part in organized community groups or volunteer activities up to 2 years after leaving high school, and they are among the most likely to watch more than 6 hours of TV or videos per week.

Despite this pattern of having generally poorer outcomes than other categories of youth with disabilities, some youth with mental retardation or multiple disabilities are transitioning more effectively than others. For example, almost 6 in 10 youth in these categories have been engaged in the community since high school, including about one-third of youth with mental retardation and half of those with multiple disabilities who have worked for pay at some time since high school. About 15% of youth in each category have pursued their education beyond high school, although virtually none have enrolled in a 4-year college. And despite the pattern of limited social activity for youth in these categories as a whole, about one-fourth do belong to groups and/or volunteer; about 4 in 10 are registered to vote. Later NLTS2 analyses will investigate the extent to which youth in these and other disability categories access adult services to help improve their odds of a successful transition to adult roles and responsibilities.

Youth with Hearing or Visual Impairments

Youth with these sensory impairments are the most likely of all categories to experience academic success. Ninety percent or more finish high school, virtually all with a regular high school diploma. This high graduation rate prepares them to take advantage of postsecondary education opportunities more than youth in many other categories. They are among the most likely youth to be engaged in school, work, or preparation for work, and they are more likely than most to have postsecondary education participation be their mode of engagement. In fact, youth with hearing or visual impairments are more than twice as likely as youth with disabilities as a whole to have enrolled in a postsecondary school; about two-thirds have done so up to 2 years after high school. Further, they are the most likely to attend a 4-year college or

university; about 4 in 10 have enrolled in such schools, a rate four times that of youth with disabilities as a whole.

Youth with hearing or visual impairments also stand out with regard to their involvement in prosocial activities. Unlike youth with disabilities as a whole, youth with these sensory impairments show no significant decline in participation in organized community groups or volunteer activities; almost twice as many of them volunteer, for example, as youth with disabilities as a whole. They are as likely to be registered to vote as any other category of youth, and their rates of criminal justice system involvement are low. For example, the arrest rate of youth with hearing impairments is less than half and the rate for youth with visual impairments is one-fourth the rate for youth with learning disabilities. Their parenting rates are low; about 1% of out-of-school youth with hearing or visual impairments report having had or fathered a child.

Despite these similarities in the largely positive experiences of youth with hearing and visual impairments in the educational and citizenship domains, their experiences with friends and jobs differ. The communication challenges faced by youth with hearing impairments may help explain why they are significantly less likely than youth with disabilities as a whole to get together with friends frequently, a difference not observed for youth with visual impairments. However, in the employment domain, it is youth with hearing impairments who are more active. Although half or more of youth with hearing or visual impairments have worked since leaving high school, those with hearing impairments are as likely to be employed currently as youth with disabilities as a whole, whereas youth with visual impairments are among the least likely categories of youth to be employed currently. In fact, irrespective of other differences in disability, functioning, and demographics, youth with visual impairments are 21 percentage points less likely to be employed currently than youth with learning disabilities; there is no difference in the probability of being employed between youth with learning disabilities and those with hearing impairments. Some of the difference between employment rates of youth with hearing and visual impairments may be attributable to greater accessibility for youth with hearing impairments because they can drive; more than 80% of age-eligible youth with hearing impairments have driving privileges, compared with fewer than 20% of youth with visual impairments. As NLTS2 continues to assess the early adult experiences of out-of-school youth with disabilities, it will become clearer whether the postsecondary education acquired by youth with visual impairments helps them increase their participation in paid employment.

Demographic Differences Are Not Powerful

Youth with disabilities differ in many respects other than the nature of their disability, including such important characteristics as age, gender, household income, and race/ethnicity. However, these differences are not associated with strong or consistent differences across outcome domains, although there are some exceptions, as noted below.

Age

Most of the changes noted in the lives of youth with disabilities in a 2-year period have been experienced to similar degrees by the 88% of out-of-school youth with disabilities represented in this report who are 18 or 19 years old and by the smaller group of those who are 15 through 17. These three age groups (15- through 17-year-olds, 18-year-olds, and 19-year-olds) are equally likely to have been engaged since high school in school, work, or preparation for work.

However, interpreting this finding is not straightforward because age is intertwined with other differences between youth. For example, as a group, 19-year-olds have been out of school longer than younger peers, a potential advantage in terms of engagement in their communities. However, younger out-of-school youth have a different mix of disabilities, including more youth with speech impairments, for example, a group generally associated with more positive outcomes than youth with emotional disturbances, who are disproportionately represented among older youth.

Multivariate analyses of employment and postsecondary education rates disentangle these interrelationships and demonstrate that age does relate strongly to a higher likelihood of both employment and postsecondary education, independent of the influences of disability, functioning, and other demographic differences between youth. Nineteen-year-old youth with disabilities are 23 percentage points more likely than 17-year-olds to be employed at a given point in time, independent of other differences between them. In the postsecondary education domain, 19-year-olds with disabilities are 12 percentage points more likely than their 17-year-old peers to have been enrolled in a 2- or 4-year college, irrespective of the length of time they have been out of school or other differences between them. Age is unrelated to the likelihood of enrolling in a vocational, business, or technical school.

In the independence domain, 19-year-olds have experienced the largest drop over time in the proportion living with parents and the largest increase in having responsibility for personal financial management tools, including a checking account and a personal credit card or charge account. The only significant increases in earning driving privileges have occurred among 18- and 19-year-olds, who are more likely than younger peers to have earned those privileges, potentially giving them greater access to employment, educational, and other community opportunities. Somewhat surprisingly, age is not associated with the likelihood of parenting or of being involved with the criminal justice system; there are no differences in these risk factors across the three age groups of youth with disabilities. Although 19-year-olds show the greatest change in their leisure-time activities, age does not have an independent relationship with the likelihood that youth with disabilities see friends often. Neither are there age differences in the likelihood that youth participate in volunteer or organized community group activities. However, being registered to vote is more evident among 19- than 18-year-old youth with disabilities.

This pattern of findings suggests that more positive outcomes may continue to develop as youth with disabilities age and have a longer time out of high school in which to pursue their employment, education, or other goals.

Gender

Males predominate among out-of-school youth with disabilities (two-thirds are male), and their experiences differ from those of females with disabilities in many, although not all, respects. The genders do not differ in their school-leaving status, and they are equally likely to have been engaged in school, work, or preparation for work since leaving high school. However, the boys and girls are somewhat different in their engagement in the community. Although there is no relationship between gender and current employment, independent of disability and other differences between youth, girls with disabilities are 6 percentage points more likely to have

been enrolled in a 2- or 4-year college since high school than are boys, controlling for other differences between them.

In the social domain, differential changes over time are apparent across genders. For example, in Wave 1, girls were much less likely than boys to get together with friends frequently outside of class or organized group activities. However, a large increase over time for girls has resulted in the two genders being equally likely to spend time with friends frequently in Wave 2. In contrast, the significant increase in the likelihood of being stopped and questioned by police other than for a traffic violation and of spending a night in jail that is evident among youth with disabilities as a whole occurs solely among boys, resulting in boys being significantly more likely than girls to have stayed overnight in jail.

Most aspects of independence are similar across genders, including residential arrangements, having driving privileges, and using personal financial management tools. However, some gender differences are apparent. Girls with disabilities are significantly less likely than boys to be single; about one-fourth are engaged, married, or in a marriage-like relationship. Further, girls who are living independently are significantly more likely than boys to be supporting themselves on less than $5,000 per year. About one in eight girls with disabilities also have had a child. Experiences of poverty and childbearing at an early age may stack the deck against some girls with disabilities in making a successful transition to self-sufficiency in early adulthood.

Household Income

Youth with disabilities who come from households with different income levels are similar in several aspects of their early postschool experiences. For example, the leisure-time use and social lives of out-of-school youth with disabilities have not changed differentially with household income, nor have many aspects of their independence, including their residential arrangements or parenting status. Income also has no independent relationship with arrest rates, irrespective of other differences between youth.

However, there are several indications that youth with disabilities who have more economic resources are having more positive experiences in their early postschool years than peers with fewer economic advantages. For example, wealthier youth with disabilities are more likely than low-income peers to have earned driving privileges (perhaps because they are more likely to have access to a car) and to have a personal checking or charge account or credit card. These aspects of independence may support more ready access to employment and other opportunities. In fact, wealthier youth with disabilities are more likely to be engaged in school, work, or preparation for work; whereas 93% of youth with disabilities from families with incomes of more than $50,000 a year are engaged in such activities after high school, 70% of youth from families with household incomes of $25,000 or less a year are thus engaged. This difference results largely from a difference in their mode of engagement; youth in the highest income group are more likely to have been engaged in postsecondary education and employment than youth from families in the lowest income group. However, this difference is not related to income alone. Multivariate analyses suggest that having a better-educated head of household, which tends to be more common among higher-income households, outweighs income itself in helping explain the variation in the likelihood that youth with disabilities will enroll in 2- or 4-year colleges up to 2 years after leaving high school.

Race/Ethnicity

The differences in early postschool outcomes of youth with disabilities who have different racial/ethnic backgrounds are similar in some respects to those noted for youth from different income groups. There are no differences across racial/ethnic groups in the likelihood of being engaged in school, work, or preparation for work shortly after high school; enrolling in college or a vocational, business, or technical school; living independently; having active friendships; having had or fathered a child; or ever having been arrested. However, white youth with disabilities are more likely than others to have driving privileges and a personal checking account. More importantly, a significant difference is apparent in the employment domain. Independent of other differences between them, African-American youth with disabilities are at a 16-percentage-point disadvantage relative to white youth in their rate of current employment. Further longitudinal analysis will be needed to determine whether the fairly equal rates of postsecondary education enrollment noted here among white and minority youth eventually will reduce or eliminate the differential likelihood of their employment.

The look at the postschool experiences of youth with disabilities provided in this report reaffirms the great diversity in the experiences of youth with disabilities. Most have finished high school, become engaged in their communities, see friends regularly, and show signs of emerging independence; but on every dimension, it is evident that some youth are struggling because of their disability, poverty, the absence of a high school education, or other factors. Yet it is important to be cautious in assuming either success or failure in the transition to adulthood from this very early period after high school. Much has changed for the youth with disabilities represented in this report in the 2-year period during which most left high school; much can change in the coming years as well. NLTS2 will continue to describe the experiences of youth with disabilities as they age and to investigate the programs and experiences during secondary school and the early transition years that are associated with positive outcomes in young adulthood. Additional reports also will document changes in the early postschool experiences of youth with disabilities that have occurred in the 15 years between NLTS and NLTS2.

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Appendix A

NLTS2 SAMPLING, DATA COLLECTION, AND ANALYSIS PROCEDURES

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

- Sampling local education agencies (LEAs) and students
- Data sources and response rates
- Combining data from parents and youth
- Weighting the data
- Estimation and use of standard errors
- Unweighted and weighted sample sizes
- Calculating statistical significance
- Multivariate analysis methods
- Measurement and reporting issues.

Sample Overview

The NLTS2 sample was constructed in two stages. A stratified random sample of 3,634 LEAs was selected from the universe of approximately 12,000 LEAs that serve students receiving special education in at least one grade from 7th through 12th grades. These LEAs and 77 state-supported special schools that served primarily students with hearing and vision impairments and multiple disabilities were invited to participate in the study, with the intention of recruiting 497 LEAs and as many special schools as possible from which to select the target sample of about 12,000 students. The target LEA sample was reached; 501 LEAs and 38 special schools 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 NLTS2 age range who were receiving special education from each LEA[1] 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 year, findings will 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 of 11,276 students were selected and eligible to participate in NLTS2.

Details of the LEA and student samples are provided below.

[1] LEAs were instructed to include on the roster any student for which 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.

LEA Sample

Defining the Universe of LEAs

The NLTS2 sample includes only LEAs that have teachers, students, administrators, and operating schools—that is, "operating LEAs." It excludes 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 NLTS2 age range, which would be unlikely to have students with disabilities.

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

Stratification

The NLTS2 LEA sample was 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 sample, to improve comparisons with the findings of other research, and to make 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:

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 was 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 by 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 four categories serving approximately equal numbers of students:

- **Very large** (estimated[2] 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)
- **Small** (estimated enrollment from 11 to 1,621 in grades 7 through 12).

[2] 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.

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% of the student population in grades 7 through 12:

- **High** (0% to 13% Orshansky)
- **Medium** (14% to 24% Orshansky)
- **Low** (25% to 43% Orshansky)
- **Very low** (more than 43% Orshansky).

The three variables generate a 64-cell grid into which the universe of LEAs was arrayed.

Sample Size

On the basis of an analysis of LEAs' estimated enrollment across LEA size and estimated sampling fractions for each disability category, 497 LEAs (and as many state-sponsored special schools as would participate) was considered sufficient to generate the student sample. Taking into account the rate at which LEAs were expected to refuse to participate, a sample of 3,635 LEAs was invited to participate, from which 497 participating LEAs might be recruited. A total of 501 LEAs actually provided students for the sample, 101% of the target number needed and 14% of those invited. Analyses of the region, size, and wealth of the LEA sample, both weighted and unweighted, confirmed that that the weighted LEA sample closely resembled the LEA universe with respect to those variables.

In addition to ensuring that the LEA sample matched 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.

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.

Student Sample

Determining the size of the NLTS2 student sample took into account the duration of the study, desired levels of precision, and assumptions regarding attrition and response rates. Analyses determined that approximately three students would need to be sampled for each student who would have a parent/youth interview in Wave 5 of NLTS2 data collection.

The NLTS2 sample design called for findings to be generalizable to students receiving special education as a whole and for the 12 special education disability categories currently in use and reported in this document. Standard errors were to be no more than 3.6%, except for the low-incidence categories of traumatic brain injury and deaf-blindness. Thus, by sampling 1,250 students per disability category (with the two exceptions noted) 402 students per category were expected to have a parent or youth interview in year 9. Assuming a 50% sampling efficiency (which is likely to be exceeded for most disability categories), 402 students would achieve a standard error of estimate of slightly less than 3.6%. All students with traumatic brain injury or with deaf-blindness in participating LEAs and special schools were selected. Students were disproportionately sampled by age to assure that there would be an adequate number of students who were age 24 or older at the conclusion of the study. Among the eligible students, 40.2% will be 24 or older as of the final interview.

LEAs and special schools were contacted to obtain their agreement to participate in the study and request rosters of students receiving special education who were ages 13 through 16 on December 1, 2000 and in at least 7th grade.[3] Requests for rosters specified that they contain the names and addresses of students receiving special education under the jurisdiction of the LEA, the disability category of each student, and the students' birthdates or ages. Some LEAs 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 NLTS2 age range, 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.

Data Sources

Data are reported here for the subset of NLTS2 sample members who: (1) have data from the Wave 1 parent telephone interview or mail survey (2001); (2) have data from the Wave 2 parent/youth telephone interview (2003); and (3) were no longer in secondary school or receiving secondary school instruction at the time of the Wave 2 parent/youth interview. All data are drawn from the Wave 1 parent interviews or Wave 2 parent/youth interviews,

[3] Students who were designated as being in ungraded programs also were sampled if they met the age criteria.

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% 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. Exhibit A-1 reports the responses to the telephone and mail surveys.

Overall, 91% of respondents reported that they were parents of sample members (biological, adoptive, or step), and 1% were foster parents. Six percent were relatives other than parents, 2% were nonrelative legal guardians, and fewer than 1% reported other relationships to sample members.

Exhibit A-1
RESPONSE RATES FOR NLTS2 WAVE 1 PARENT/GUARDIAN TELEPHONE INTERVIEW AND MAIL SURVEY

	Number	Percentage
Total eligible sample	11,276	100.0
Respondents		
Completed telephone interview	8,672	76.9
Partial telephone interview completed	300	2.7
Complete mail questionnaire	258	2.3
Total respondents	9230	81.9
Total nonrespondents	2,046	18.1

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 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 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 using 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:

> *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 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 after repeated attempts, parents were contacted again and asked to complete Parent Part 2 in lieu of Youth Part 2.

Exhibit A-2 reports the sample members for whom there are data from the Wave 2 Parent Part 1 and Parent Part 2 telephone interviews and the Youth Part 2 telephone/mail survey.

Exhibit A-2
RESPONSE RATES FOR NLTS2 WAVE 2 PARENT/YOUTH DATA COLLECTION

	Number	Percentage
Total eligible sample	8,210	100.0
Respondents		
Completed Parent Part 1 telephone interview	6,859	83.5
Completed Parent Part 2 telephone interview	2,962	36.1
Completed Youth Part 2 telephone interview or mail questionnaire	3,360	41.9
Total respondents with Part 1 and either Parent or Youth Part 2	6,322	77.0
Total nonrespondents (no parent or youth data)	1,351	16.5

Combining Parent and Youth Data

Youth Part 2 of the interview contains many items that were asked only of youth because they focus on youth's perspectives or attitudes (e.g., job satisfaction, self-concept). However, the majority of the interview items that were in Youth Part 2 also were included in Parent Part 2 so that data would be available for them, regardless of whether a parent or youth completed the interview or the mail questionnaire. Thus, in preparing the data for analysis, responses to these overlapping items from parents and youth were combined—i.e., data for many Part 2 items combine responses from parents and youth in the proportions with which they completed Part 2 of the interviews, indicated in Exhibit A-2.

There also is a relatively small set of items that appeared in Parent Part 1 as well as Youth Part 2. These were considered critical variables for which the maximum amount of data would be needed; they were included in Part 1 to avoid the risk that a Part 2 would not be completed with either the parent or youth. However, a small number of these also were included in Youth Part 2 because a youth was potentially the more knowledgeable respondent. In such cases, the youth response was used when combining parent and youth data.

Combining data across respondents raises the question of whether parent and youth responses would concur—i.e., would the same findings result if parent responses were reported instead of youth responses. Exhibit A-3 reports the level of congruence in parent and youth responses to four items related to key outcomes of interest. However, a high degree of congruence gives confidence that accurate information is being collected, regardless of who provided Part 2 responses.

When both parents and youth were asked whether the youth belongs to an organized community group, currently works 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 68% to 87% of the time. The greatest congruence (87%) is noted regarding youth's current employment, with high congruence (79%) also evident regarding wages for that employment. There is somewhat less, although still relatively high, agreement regarding employment in the preceding 2 years (74%). Parents and youth were least likely to agree on whether youth belonged to an organized group in the community. This item could be expected to have greater discrepancy than those dealing with employment because parents could be less aware of youth's social or leisure time activities than of employment, the evidence of which would be visible in the wages earned and spent.

Exhibit A-3
CONGRUENCE OF PARENT AND YOUTH RESPONSES TO KEY ITEMS

	Percentage with:		
	Congruent Responses	Parent Answering Yes (Higher), Youth No (Lower)	Parent Answering No (Lower), Youth Yes (Higher)
Youth currently working for pay	86.9	5.7	7.5
Current hourly wage	79.1	5.5	15.4
Youth worked for pay in past 2 years	73.6	7.6	18.9
Youth belongs to an organized group in the community	68.5	4.4	27.1

It is impossible to determine the cause of discrepant responses. Complete congruence would not be expected, even with both respondents answering accurately, because Parent Part 1 could have been completed well before the subsequent Part 2 interview during the 7-month interview period; 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). Although it is not possible to tell which of two discrepant responses is correct, it is noteworthy that with the exception of current employment, discrepant cases are more likely to result from a positive response from youth when parents responded negatively (e.g., youth reported higher wages or a higher rate of group membership than parents). Thus, for some items, youth for whom data were collected through Youth Part 2 may appear to have more positive experiences than those for whom data were collected through Parent Part 2 because of the source of the data, in addition to or instead of actual differences in their experiences. Again, this difference does not necessarily imply inaccuracies in the data, but it does affirm the difference in the knowledge and perspectives of parents and youth.

Weighting Respondents with Both Wave 1 Parent and Wave 2 Parent/Youth Data

The percentages and means reported in the data tables are estimates of the true values for the population of youth with disabilities in the NLTS2 age range. The estimates are calculated from responses for sample members for whom there are both Wave 1 parent and Wave 2 parent/youth data. 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).

Exhibit A-4 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, which would result in an unweighted value of 60% participating. However, this statistic 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 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 87%. The percentages in all NLTS2 tables are similarly weighted population estimates, whereas the sample sizes are the actual number of cases on which the weighted estimates are based (similar to the 10 cases in Exhibit A-4).

Exhibit A-4
EXAMPLE OF WEIGHTED PERCENTAGE CALCULATION

	A	B	C	D
Disability Category	Number in Sample	Participated in Group Activities	Example Weight for Category	Weighted Value for Category
Learning disability	1	1	5.5	5.5
Speech/language impairment	1	1	2.2	2.2
Mental retardation	1	1	1.1	1.1
Emotional disturbance	1	0	.9	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
TOTAL	10	6	10	8.7
	Unweighted sample percentage = 60% (Column B total divided by Column A total)		Weighted population estimate = 87% (Column D total divided by Column C total)	

The youth in LEAs and state schools with both Wave 1 parent and Wave 2 parent/youth data are weighted to represent the universe of youth with disabilities in LEAs and state schools. The weighting process involved three phases, each with multiple steps.

In the first phase, weights were calculated that, when applied to each student on the rosters of the participating LEAs, would project to the universe of students in all eligible LEAs. The steps in the first phase were as follows:

- QED data was used to obtain counts of the number of students (without regard to disability) in the universe by strata (defined by size, poverty, and region) and within strata by ethnicity and urbanicity.
- LEA weights (denoted W1) were calculated, such that the weighted sum of the number of students on the rosters of the participating LEAs equaled the number of students in the universe in each stratum.
- The W1 weights were raked (using Deming's algorithm), yielding weights denoted W2, which approximated the number of students in the universe (as marginals) by size, poverty level, region, ethnicity, and urbanicity. As an example of the meaning of the W2 weights, consider that the weighted sum over all participating LEAs of the number of Hispanic students on the rosters of those LEAs would approximately equal the number of Hispanic students in the universe of LEAs.

In the second phase, the number of students with disabilities in the universe was estimated by disability category and within disability category, by LEA size, poverty, region, and ethnicity. The steps in the second phase were as follows:

- Data from the rosters of the participating LEAs was used to obtain counts of the total number of students with disabilities in those LEAs by disability and age.
- Initial estimates of the number of students in the universe by disability, age, and strata were obtained by multiplying the number of students on the participating LEAs rosters (by disability and age) by W2 and summing over all participating LEAs in that stratum.
- OSEP data was used to obtain counts of the number of students with disabilities in the universe by disability and within disability by age (13 to 15.9, and 16 or older) and ethnicity (non-Hispanic Caucasian, non-Hispanic black, non-Hispanic other, and Hispanic).
- Initial estimates of the number of students in the universe by disability, age, and strata were refined by adjusting them to equal the Office of Special Education Programs (OSEP) counts by disability and age.
- For the state schools, the number of students by disability and age was estimated by multiplying the number of students with that disability and age on the rosters by the inverse of the proportion of state schools that submitted rosters.

In the third phase, the weights were calculated for responding students so that the weighted sum of those weights equaled the number of students in the universe by disability, LEA size, poverty, and region, and ethnicity. The steps in the third phase were as follows:

- Initial student weights (denoted W3) were calculated by multiplying the W2 weights by the ratio of the number of students on the rosters of participating LEAs (by stratum, disability, and age) to the number of completed interviews (by stratum, disability, and age). A student was considered to be a completion if that student had completed all questionnaires required to be considered to be a respondent.
- The initial student weights were raked (using Deming's algorithm), yielding weights denoted W4, which approximated the number of students with disabilities in the universe by disability and within disability (as marginals) by LEA size, poverty, region and ethnicity.
- The adjustments resulting from the raking used to generate W4 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 strata could not differ by more than a factor of 2 from the average weight over all size strata. These constraints substantially increased the efficiency of the sample at the cost of introducing a small amount of weighting bias (discussed below).
- 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 2000-2001 school year (Office of Special Education Programs, 2001a). This last step was accomplished by using the actual disability class to which the student belonged, rather than the class from which the student had been originally sampled, thereby adjusting for a few students who had been misclassified by their LEA. Weights of the deaf-blind were set to be equal since the sample was too small to support separate estimates by the stratification variables.

The imposition of constraints on the adjusted weights increased sampling efficiency at the cost of introducing a small amount of bias. The average efficiency increased from 43.4% to 67.1%; the largest increases in sampling efficiency occurred for youth with multiple handicaps (from 25.4% to 81.0%) and for those with autism (from 30.0% to 61.1%). Biases introduced by the imposition of constraints on the student weights generally were very small. The largest bias in size distribution was for youth with multiply handicapped students. The proportion in the four size stratum changed from 24.3%, 29.6%, 28.8% and 16.5% to 23.7%, 33.6%, 22.1%, and 19.8%. The second largest bias in size distribution was for youth with autism. The proportion in the four size stratum changed from 24.6%, 25.9%, 28.6%, and 20.9% to 22.3%, 30.1%, 25.3%, and 22.3%. All other changes in the size distribution were 4.1% or less, and the average absolute change was only 0.13%. Biases for the poverty and region distributions are considerably smaller.

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 ranged demarcated by the estimate, plus or minus the standard error 95% of the time. For example, if the cohort 2 estimate for youth's current employment rate is 29%, with a standard error of 1.8 (as reported in Exhibit 5-7), one can be 95% confident that the true current employment rate for the population is between 27.2% and 30.8%.

Because the NLTS2 sample is both stratified and clustered, calculating standard errors by formula is not straightforward. Standard errors for means and proportions were estimated using pseudo-replication, 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 were 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.

Although the procedure of pseudo-replication is less unwieldy than development of formulas for calculating standard errors, it is not easily implemented using the Statistical Analysis System (SAS), the analysis program used for NLTS2, and it is computationally expensive. In the past, it was possible to develop straightforward estimates of standard errors using the effective sample size.

When respondents are independent and identically distributed, the effective sample size for a weighted sample of N respondents can be approximated as

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

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*.

NLTS2 respondents are not independent of each other because they are clustered in LEAs, and the intracluster correlation is not zero. However, the intracluster correlation traditionally has been quite small so that the formula for the effective sample size shown above has worked well. To be conservative, however, the initial estimate was multiplied by a "safety factor" that ensures that the standard error of estimate is not underestimated.

To determine the adequacy of fit of the variance estimate based on the effective sample size and to estimate the required safety factor, 24 questions with 95 categorical and 2 continuous responses were selected. Standard errors of estimates were calculated for each response category

and the mean response to each question for each disability group using both pseudoreplication and the formula involving effective sample size. A safety factor of 1.25 resulted in the effective sample size standard error estimate underestimating the pseudo-replicate standard error estimate for 92% of the categorical responses and 89% of the mean responses. Because the pseudoreplicate estimates of standard error are themselves estimates of the true standard error, and are therefore subject to sampling variability, this was considered an adequate margin of safety. All standard errors in Wave 1 are 3.0% or less, except for categories of deaf-blindness, traumatic brain injury, and visual impairments, where sample sizes are small. For these disability categories, the standard errors were at most 4.9%, 4.9%, and 3.5% for dichotomous variables.

Unweighted and Weighted Sample Sizes

As indicated above, standard errors accompany all estimates reported in the descriptive data tables. How close an estimate comes to a true population value is influenced by the size of the sample on which the estimate is based. Larger samples yield estimates with smaller standard errors, indicating that those estimates are closer to true population values than estimates with larger standard errors based on smaller samples.

The actual, or "unweighted" sample sizes for each variable reported in the descriptive data tables are included in Appendix C. However, some readers may be interested in determining the number of youth in the nation represented by a particular estimate (e.g., if 22% of youth are employed at a given time, how many youth in the country are employed?). A first step in determining these "weighted" sample sizes involves multiplying the percentage estimate by the actual number of youth in the nation represented by that estimate (see example below). However, 95% of the time, the true population value is likely to diverge from that estimate by as much as the amount of the standard error. Therefore, it is more appropriate to use the standard error to calculate a range in the number of youth represented by an estimate, rather than relying on the single value resulting from multiplying the estimate by the size of the population it represents.

For example, as depicted in Exhibit A-5, NLTS2 findings indicate that 25.1% of youth with learning disabilities are currently employed. The standard error accompanying that estimate is 2.1, indicating that the true current employment rate for the population is likely to fall between 23% and 27.2%. There are 1,130,539 youth with learning disabilities in the NLTS2 age range. Multiplying the percentages by this population size yields a single-point estimate of 283,765 and a range of 260,024 to 307,507, within which the actual population size will fall, with 95% confidence.

Exhibit A-5
EXAMPLE OF CALCULATING WEIGHTED SAMPLE SIZES

A	B	C	D	E	F
Percentage Estimate	Standard Error	Range around Estimate (Column A Plus or Minus Column B)	Population Size	Single-point Weighted Population Affected (Column A x Column D)	Range in Weighted Population Affected (Column C x Column D)
25.1	2.1	23.0 to 27.2	1,130,539	283,765	260,024 to 307,507

Because percentage estimates are provided not only for the full sample of youth with disabilities but also for youth who differ in primary disability category, readers must have the actual population size for each of these subgroups to calculate weighted sample sizes for some estimates. These population sizes are presented in Exhibit A-6.

Exhibit A-6
POPULATION SIZES OF GROUPS REPRESENTED BY NLTS2

Groups	Number
All youth with disabilities	1,828,790
Disability category:	
Learning disability	1,130,539
Speech/language impairment	76,590
Mental retardation	213,552
Emotional disturbance	203,937
Hearing impairment	22,001
Visual impairment	8,013
Orthopedic impairment	21,006
Other health impairment	98,197
Autism	14,637
Traumatic brain injury	5,113
Multiple disabilities	34,865
Deaf-blindness	340

Calculating Significance Levels

In general, references in the text of the report to differences between groups highlight only differences that are statistically significant with at least 95% confidence (denoted as $p<.05$). Beyond the differences highlighted in the text, readers may want to compare percentages or means for specific subgroups to determine, for example, whether the difference in the percentage of students who are male between students with learning disabilities and those with hearing impairments is greater than would be expected to occur by chance. To calculate whether the difference between percentages is statistically significant, the squared difference between the two percentages of interest is divided by the sum of the two squared standard errors. If this product is larger than 3.84, the difference is statistically significant at the .05 level—i.e., it would occur by chance fewer than 5 times in 100. Presented as a formula, a difference in percentages is statistically significant at the .05 level if:

$$\frac{(P_1 P_2)^2}{SE_1^{\,2} + SE_2^{\,2}} > 1.96^2$$

where P_1 and SE_1 are the first percentage and its standard error and P_2 and SE_2 are the second percentage and the standard error. If the product of this calculation is 6.63 to 10.79, the significance level is .01, and products of 10.8 or greater are significant at the .001 level.

Multivariate Analysis Methods

Logistic regression analyses are used in this report to assess the independent relationships between outcome measures and characteristics of individual youth, their households, and their experiences. This is the appropriate multivariate analysis procedure to use when a dependent variable is dichotomous (i.e., whether youth see friends at least weekly, are currently employed). It results in a calculation such as: log (probability of arrest/no arrest) = $a + b_1X_1 + b_2X_2 + ... + b_nX_n$]. This procedure allows the modeling of the simultaneous influence of independent variables on the dependent variable and provides estimates of model fit. For ease of interpretation, coefficients of logistic regression analyses are transformed into differences in the probabilities of the dependent variable occurring given a specified increment of difference in the independent variables.

NLTS2 multivariate analyses are unweighted. In general, results are reported for analyses that include the full set of individual and household factors simultaneously. In reporting the explained variation for logistical regression analyses, an r^2 can be calculated for dichotomous variables; it is much less useful than for continuous variables owing to the near constancy of variance over wide ranges of underlying probabilities of success. Many alternative pseudo r^2 statistics have been proposed to measure "goodness of fit" for logistic regression models, but most of these are quite complex and difficult to interpret. This report uses a statistic referred to as "predictive improvement" (PI). PI is scaled from 0 to 1, like r^2 is easier to interpret than pseudo r^2 statistics, and heuristically represents the portion of the maximum possible

improvement in predictive ability associated with the independent variables in a logistic regression.[4] PI is calculated in the following way:

$$PI = 1 - (e_0 + e_1)$$

Where

e_0 is the model's "rate of error" in predicting observations that actually have a value of 1 on the dependent variable This is obtained by taking the mean of the values predicted by the model for those observations.

and

e_1 is 1 model's rate of error in predicting observations that actually have a value of 0 on the dependent variable. This is obtained by taking 1 minus the mean of the values predicted by the model for those observations.

This simple statistic represents the percentage of improvement in predictive power that a specific logistic model gives over a logistic model that includes only a constant term.[5] For a model that predicts no better than chance, PI has a value of 0. As a model's predictive power improves, the value of PI increases so that if a model were able to predict every observation perfectly, PI would have a value of 1.

In order to maximize the number of cases used in multivariate analyses, missing values were imputed for key independent variables. Missing values for particular variables in the Wave 1 parent or Wave 2 parent/youth interviews occur when a respondent refused to answer or did not know the answer to a given item. Multivariate analyses exclude cases for which there is

[4] The PI statistic was developed by Harold Javitz.

[5] More specifically, consider an experiment in which two logistic models are used to predict the probability of a positive outcome. One of these models includes only a constant, and the other includes a variety of explanatory (independent) variables. After fitting the model, the data set is divided into two groups—individuals with a positive outcome and individuals with a negative outcome. A large number of individuals (say 1,000) are selected from the first group randomly and with replacement. The same number of individuals are selected from the second group randomly and with replacement. Using the logistic model that includes only a constant term, the experimenter estimates the probability of a positive outcome for each of these 2,000 selections. (When the model only includes a constant term, this probability will always equal the proportion of positive outcomes in the original dataset.) Once this probability is estimated for an individual, the experimenter flips a coin with that same probability for heads. If the coin comes up heads and the individual actually had a positive outcome, or if the coin comes up tails and the individual actually had a negative outcome, then the experimenter scores a success; otherwise the experimenter scores a failure. Using the logistic model with only a constant term, the overall proportion of successes for these 2,000 randomly selected individuals will be approximately 50%. The experimenter now repeats this process using the logistic model with one or more explanatory variables. (In this case, the estimated probability of success will vary from person to person, and therefore the coin that the experimenter flips will have probability of a heads that also varies from person to person.) The overall proportion of successes for the same 2,000 randomly selected individuals will typically be greater than 50% (depending on the extent to which the explanatory variables improve predictive accuracy). Suppose that the overall proportion of successes is 74%. Then the use of the explanatory variables has increased the proportion of correct guesses from 50% to 74%. This is an improvement of 24%. Since the maximum improvement is 50% (i.e., improving predictive accuracy from 50% to 100%), the percent improvement is 24% x 2 = 48%. It can be shown mathematically that this is the same value as would be obtained by using the formula for PI given above.

missing data for any variable included in them, reducing the power of the analyses to detect significant relationships between independent and dependent variables.

Thus, it can be beneficial to impute values on key variables for youth who otherwise would be excluded from analyses because of missing data. Imputation procedures involve assigning a value for a youth with missing data that is the best prediction for that youth given what else is known about him or her. Although there are a variety of procedures for imputation, NLTS2 has employed a straightforward assignment of mean values that are calculated for a subset of youth who resemble the youth with missing values on specified dimensions that are relevant to the variable in question. For example, a student who is missing a value for an item that is included in the scale measuring functional cognitive abilities was assigned the mean value on the missing item that was calculated for all other youth who share his or her disability category and number of functional domains affected by disability. These criteria for subsetting youth for purposes of imputation were selected because they relate significantly to variation in functional abilities.

Although imputation can be a significant help in maintaining the analytic sample size, it also reduces the amount of variation in the variables chosen for imputation, thus reducing the strength of their relationships to other variables. Therefore, no dependent variables included imputed values. In selecting independent variables for imputation, careful judgment was used in weighing the trade offs between maintaining sample size and maintaining maximum variability and selecting only those that have a fairly limited number of missing values. Exhibit A-7 identifies the independent variables for which missing values were imputed, the criteria for imputation, and the number and percentage of cases across the multivariate analyses that had imputed values for each variable. For a given variable, the models with the smallest number of imputed values are those with a dependent variable that came from the same data source (i.e., missing data resulted from item nonresponse), whereas a larger number of values were imputed for models addressing variables from a different data source.

Exhibit A-7
IMPUTATION OF MISSING VALUES

Variable Name	Criteria for Assigning Mean Values	Percentage of Cases with Assigned Values Across Multivariate Analyses
Self-care skills scale	Mean value of youth with same disability category and number of domains with functional limitation	< .1%
Functional cognitive skills scale	Mean value of youth with same disability category and number of domains with functional limitation	(< .1%)
Number of domains in which youth experiences functional limitations	Mean value of youth with same disability category	14.8% to 19.3%
Household income	Mean value of youth with same disability category, head of household education, and race/ethnicity	3.0% to 3.7%

Measurement and Reporting Issues

The chapters in this report provide information on specific variables included in analyses. However, several general points about 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 NLTS2 age range receiving special education services in the 2000-01 school year under the auspices of participating LEAs and state-supported special schools. In data tables included in this report, students are 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 (Exhibit A-8), criteria and methods for assigning students to categories vary from state-to-state and even between districts within states. Thus, there is the potential for substantial variation in the nature and severity of disabilities included in categories (see for example, MacMillan & Siperstein, 2002), 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 by their school or district. Therefore, it is appropriate to conclude that these descriptive data are nationally generalizable to youth in the NLTS2 age range who were classified as having a particular primary disability in the 2000-01 school year.

The exception to reliance on school or district category assignment involves students with deaf-blindness. District variation in assigning students with both hearing and visual impairments to the category of deaf-blindness results in many students with those dual disabilities being assigned to other primary disability categories, most often hearing impairment, visual impairment, and multiple disabilities. Because of these classification differences, national estimates suggest that there were 3,196 students with deaf-blindness who were ages 12 to 17 in 1999 (National Technical Assistance Center, 1999), whereas the federal child count indicated that 681 were classified with deaf-blindness as their primary disability (Office of Special Education Programs, 2001).

Exhibit A-8
DEFINITIONS OF DISABILITIES[6]

Autism: A developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance as defined below.

Deafness: A hearing impairment so severe that the child cannot understand what is being said even with a hearing aid.

Deaf-Blindness: A combination of hearing and visual impairments causing such severe communication, developmental, and educational problems that the child cannot be accommodated in either a program specifically for the deaf or a program specifically for the blind.

Emotional Disturbance[7]: A condition exhibiting one or more of the following characteristics, displayed over a long period of time and to a marked degree that adversely affects a child's educational performance:

- An inability to learn that cannot be explained by intellectual, sensory, or health factors
- An inability to build or maintain satisfactory interpersonal relationships with peers or teachers
- Inappropriate types of behavior or feelings under normal circumstances
- A general pervasive mood of unhappiness or depression
- A tendency to develop physical symptoms or fears associated with personal or school problems.

This term includes schizophrenia, but does not include students who are socially maladjusted, unless they have a serious emotional disturbance.

Hearing impairment: An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness as listed above.

Mental retardation: Significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance.

Multiple disabilities: A combination of impairments (such as mental retardation-blindness, or mental retardation-physical disabilities) that causes such severe educational problems that the child cannot be accommodated in a special education program solely for one of the impairments. The term does not include deaf-blindness.

Orthopedic impairment: A severe orthopedic impairment that adversely affects educational performance. The term includes impairments such as amputation, absence of a limb, cerebral palsy, poliomyelitis, and bone tuberculosis.

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[6] From ERIC Digests (1998); definitions are taken from P.L. 105-17, the Individuals with Disabilities Education Act Amendments of 1997 (IDEA'97).

[7] IDEA '97 changed "serious emotional disturbance" to "emotional disturbance." The change has no substantive or legal significance. It is intended strictly to eliminate any negative connotation of the term "serious."

Exhibit A-8
DEFINITIONS OF DISABILITIES (Continued)

Other health impairment: Having limited strength, vitality, or alertness due to chronic or acute health problems such as a heart condition, rheumatic fever, asthma, hemophilia, and leukemia, which adversely affect educational performance.[8]

Specific Learning Disability: A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. This term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. This term does not include children who have learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; or environmental, cultural or economic disadvantage.

Speech or language impairment: A communication disorder such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a child's educational performance.

Traumatic brain injury: An acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma. As with autism, traumatic brain injury (TBI) was added as a separate category of disability in 1990 under P.L. 101-476.

Visual impairment, including blindness: An impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

To describe the characteristics and experiences of the larger body of youth with deaf-blindness more accurately and precisely, students who were reported by parents or by schools or school districts[9] as having both a hearing and a visual impairment were assigned to the deaf-blindness category for purposes of NLTS2 reporting, regardless of the primary disability category assigned by the school or school district. This increased the number of youth with deaf-blindness for whom parent data were collected from 24 who were categorized by their school or district as having deaf-blindness as a primary disability to 166. The number of students reassigned to the deaf-blindness category and their original designation of primary disability are indicated in Exhibit A-9. Because there still are relatively few members of the deaf-blindness disability category, for purposes of multivariate analyses, they are included with the category of multiple disabilities.

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[8] OSEP guidelines indicate that "children with attention deficit disorder (ADD), where ADD is a chronic or acute health problem resulting in limited alertness, may be considered disabled under Part B solely on the basis of this disorder under the 'other health impaired' category in situations where special education and related services are needed because of the ADD" (Davila, 1991).

[9] Some special schools and school districts reported secondary disabilities for students. Thus, for example, a student with visual impairment as his or her primary disability category also could have been reported as having a hearing impairment as a secondary disability.

Exhibit A-9
ORIGINAL PRIMARY DISABILITY CATEGORY OF YOUTH ASSIGNED TO DEAF-BLINDNESS CATEGORY FOR NLTS2 REPORTING PURPOSES

Original Primary Disability Category	Number
Deaf-blindness	24
Visual impairment	46
Hearing impairment	43
Multiple disabilities	31
Orthopedic impairment	7
Mental retardation	6
Traumatic brain injury	4
Other health impairment	3
Speech/language impairment	1
Autism	1
Total	166

Comparisons with the general population of students. In cases in which databases for the general population of youth are publicly available (e.g., the National Longitudinal Survey of Youth), comparisons have been calculated from those databases for youth who match in age to those included in NLTS2. However, some comparisons have been made using published data. For some of these comparisons, differences in samples (e.g., ages of youth) or measurement (e.g., question wording on surveys) reduce the direct comparability of NLTS2 and general population data. Where these limitations affect the comparisons, they are pointed out in the text and the implications for the comparisons are noted.

Reporting statistics. Statistics are not reported for groups with fewer than 35 members. Statistics with a decimal of .5 are rounded to the nearest even number.

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Appendix B

FACTORS EXPECTED TO RELATE TO ACHIEVEMENTS OF YOUTH WITH DISABILITIES

Much of the information provided in this report is descriptive—findings highlight the experiences of youth with disabilities in their early years after high school. However, the report also identifies factors that relate to variations in the following key outcomes of youth in those years: participation in any postsecondary education since high school, participation in a 2- or 4-year college since high school, participation in a vocational or trade school since high school, current paid employment outside the home, and seeing friends at least weekly outside of school or organized group activities. These experiences reflect a complex interplay of many factors over time. Some factors are intrinsic to youth themselves; some are characteristics of their family environment; and some involve their attitudes and behaviors and their experiences before leaving school. The importance of a particular factor and the ways such factors intertwine may differ with the outcome being considered. For example, income differences may be apparent in postsecondary education participation (favoring those from higher-income households) but not be apparent for youth's friendship interactions. To untangle the interrelated factors that relate to youth outcomes, logistic regression analysis techniques have been used to estimate the magnitude and direction of relationships for numerous factors, statistically holding constant the other factors in the analysis.

This appendix presents the characteristics of youth (aspects of their disability and functioning and demographic factors), their households (household demographics and family expectations and support for education), and youth's attitudes, behaviors, and experiences that are included in logistic regression analyses because research suggests they relate to the outcomes of out-of-school youth with disabilities addressed in this report. Taken together, they address the question: "Which youth do well and which struggle—i.e., what individual and household characteristics and experiences are associated with variations in the achievements of youth with disabilities in their early years after high school?"

Disability Characteristics

In considering the variations in the achievements of youth in their early years after secondary school, it is important to understand the impact of disability, as related to:

- **Disability category.** The nature of a particular youth's disability can powerfully condition his or her experiences, with particular disabilities having stronger impacts on some outcomes than others. For example, secondary school youth with orthopedic or visual impairments have been shown to do well in school (Blackorby, Chorost, Garza & Newman, 2003), but those with visual impairments are challenged in holding jobs (Cameto, Levine, Wagner, & Marder, 2003), and those with orthopedic impairments are less likely than others to get out to see friends (Marder, Wagner, & Sumi, 2003). To assess the impact of particular disabilities, dichotomous variables are included in analyses that distinguish youth according to the federally defined special education disability

categories in use for secondary-school-age students (please see Appendix A, Exhibit A-8).[1]

The assignment of youth to a disability category is based on the primary disability designated by the youth's school or district in the 2000-01 school year. Although there are federal guidelines regarding making disability category assignments, criteria and methods for assigning students to categories vary widely. Therefore, NLTS2 category designations should be interpreted as describing those reported to have a particular disability, rather than those who have that disability.

As noted in Chapter 2, two-thirds of out-of-school youth with disabilities in the NLTS2 age range are classified as having a learning disability. Youth with mental retardation and emotional disturbances make up 8% and 14% of youth, respectively. Another 4% of youth are classified as having other health impairments, and 2% are identified as having speech impairments. The seven remaining disability categories each account for 1% or fewer of youth and, together, make up about 4% of out-of-school youth with disabilities. The nature of a youth's disability is hypothesized to account for much of the variation in outcomes, with youth in such categories as learning disability and speech impairment generally experiencing more positive outcomes than, for example, youth in categories such as multiple disabilities or mental retardation.

- **Attention deficit disorder/attention deficit hyperactivity disorder (ADD/ADHD).** According to parents' reports, 36% of youth with disabilities receiving special education services in secondary school have been diagnosed with ADD/ADHD, including 76% of those in the other health impairment category, the category in which youth with ADD/ADHD as a primary disability generally are included. However, ADD/ADHD also is a secondary disability for many youth in other disability categories, including 63% of those with emotional disturbances and 32% of those with learning disabilities (Wagner, Marder, & Cardoso, 2003). Although ADD/ADHD is not a separately designated disability category under IDEA '97, the behaviors that often characterize the disorder—distractability, poor impulse control, excess energy—can have a negative impact on the ability of youth to succeed in school and in the postschool years (Forehand, Wierson, Frame, Kempton, & Armistead, 1991; Reeve, 1994; Zentall, 1993). Thus, having ADD/ADHD is expected to exert its own influence on achievements of youth with disabilities, independent of the effects of being in a specific primary disability category. However, the relationship may not always be negative; among secondary school youth with disabilities, those with ADHD have a higher likelihood of having a paid job than youth with learning disabilities, for example, independent of other differences between them (Cameto, Levine, et al., 2003).
- **Number of functional domains influenced by disability.** The number of functional domains affected by disability is indicative of the potential impact of disability on the outcomes youth may achieve. To assess the breadth of functioning affected by youth's

[1] For analysis purposes, the deaf-blind category was combined with the multiple disability category. In multivariate analyses, dichotomous variables such as these statistically contrast the effects of being in a category that is included in the analyses with being in a comparison category. Learning disability is the comparison category in NLTS2 multivariate analyses because it is the largest category and, therefore, most closely represents the experiences of students with disabilities as a whole.

disabilities, parents were asked to report whether youth experience limitations in six areas: general health; vision; use of arms, hands, legs, and feet; speech production; understanding of speech; and participation in bidirectional communication. Parents of youth with disabilities report that half have problems in at least one area, whereas 8% have problems in four or more of these areas (Wagner, Blackorby, Marder, & Levine, 2003). Negative relationships between the number of domains affected by disability and holding a paid job and seeing friends regularly have been demonstrated for youth with disabilities during high school (Cameto, Levine, et al., 2003; Marder, Wagner, & Sumi, 2003); similar relationships are expected for out-of-school youth with disabilities.

In addition to these indicators of disability type and breadth, NLTS2 findings demonstrate the considerable variation in several kinds of skills among youth who share a primary disability category designation (Cameto, Marder, Cadwallader, & Wagner, 2003; Wagner, et al., 2003). Prior research for NLTS also showed that differences in functional skills strongly relate to youths' outcomes in several arenas (D'Amico, 1991; Newman, 1991; Wagner, 1991a). Hence, NLTS2 analyses include variables that distinguish the level of functioning of youth with disabilities in the areas noted below. Although each of these measures is an indicator within an outcome domain, as described in Chapter 1, they have not been chosen for multivariate analyses. Instead, they are used as independent variables in explaining variation in other outcomes across domains.[2]

- **Self-care skills.** Higher self-care abilities are expected to relate to more positive outcomes in all domains because for each of the outcomes, physical functioning is important (e.g., attending college classes, working, getting out to see friends). To assess the independence of youth in caring for their fundamental physical needs, parents of youth with disabilities were asked to rate how well youth can feed and dress themselves without help on a 4-point scale from "not at all well" to "very well." A summative scale of abilities ranges from 2 (both skills done "not at all well") to 8 (both skills done "very well"). Despite the fact that, according to parents, virtually all youth (94%) have a high self-care skills scale score during high school (Cameto, Levine, et al., 2003), NLTS2 research on outcomes of secondary school students with disabilities show that scores on this scale are significantly related to a higher likelihood of seeing friends at least weekly (Marder et al., 2003) and holding a paid job during high school (Cameto, Levine, et al., 2003), independent of other differences between youth.
- **Functional cognitive skills.** To assess functional cognitive skills, parents were asked to use the same 4-point scale to evaluate their children regarding four skills that often are used in daily activities: reading and understanding common signs, telling time on a clock with hands (i.e., an analog clock), counting change, and looking up telephone numbers and using the telephone. A scale of general functional cognitive abilities was constructed by summing responses to the four items; it ranges from 4 (all skills done "not at all well") to 16 (all skills done "very well"). Overall, about three-fourths (78%) of out-of-school youth with disabilities youth score high on this scale (a score of 15 or 16), and a small percentage (about 2%) score low (a score of 4 to 8) on the functional cognitive skills scale. As an indicator of the ability to process information that is important to daily functioning, higher functional cognitive skills are expected to relate strongly to better

[2] Values for the skills scales are reported in the chapters dealing with the outcome domains to which they pertain.

outcomes across the outcome domains, an expectation born out in NLTS2 analyses of outcomes of secondary school students with disabilities (Wagner, Marder, Blackorby, et al., 2003).

- **Social skills.** The ability to interact effectively with others is crucial to success at school, at home, and in the community. Hence, higher social skills are expected to relate to higher achievement across the outcome domains. Using items from the Social Skills Rating System (SSRS; Gresham & Elliot, 1990), parents of youth with disabilities were asked to report how often their sons or daughters demonstrate each of the following nine aspects of social competence: makes friends easily; starts conversations rather than waiting for others to start; seems confident in social situations, such as parties or group outings; joins group activities, such as a group having lunch together, without being told to do so; speaks in an appropriate tone at home; avoids situations that are likely to result in trouble; controls his or her temper when arguing with peers other than siblings; ends disagreements with parent calmly; receives criticism well. Possible responses were "never," "sometimes," or "very often." An overall measure of general social skills was created by summing all nine items, yielding scores that range from 9 (parents indicated "never" to all items) to 27 (parents indicated "very often" to all items). Among out-of-school youth with disabilities, 16% have high social skills, and 22% have low skills. Higher social skills have been shown to relate to significantly more positive social adjustment (Marder, et al., 2003) and employment outcomes (Cameto, Levine, et al., 2003) among secondary school students with disabilities.

Individual and Household Demographic Characteristics

Although the factors noted above suggest that the nature of a youth's disability and its functional implications can be a powerful influence on his or her experiences, other fundamental characteristics also help shape outcomes. During late adolescence, a single year of age can make a major difference in both competence and independence. Gender is a defining human characteristic at any age, and race/ethnicity background can be associated with rich cultural traditions, patterns of relationships within families and communities, and strong group identification. All of these factors can generate important differences in values, perspectives, expectations, and practices.

- **Age.** Out-of-school youth with disabilities in NLTS2 were ages 15 through 19 when Wave 2 interview data were collected about them. Older youth are expected to acquire more experience in such aspects of independence as employment (D'Amico, 1991) and postsecondary education (Butler-Nalin & Wagner, 1991), although not social interactions with friends. Because the age distribution of youth is related to school leaving status (i.e., youth 17 years old or younger are less likely to have completed high school than older youth—see Chapter 2), multivariate analyses are required to disentangle the effects of age from those of disability.
- **Gender.** In the general population, differences in the achievements of young men and of young women both in school and in the workplace are notable (National Center for Education Statistics, 2002). Important differences have been noted for youth with disabilities regarding aspects of academics (Wagner, 1992), independence (D'Amico, 1991), and social adjustment (Newman, 1991; Wagner, Cadwallader, & Marder, 2003),

favoring males. Whereas youth in the general population are split about evenly between boys and girls, almost two-thirds of youth with disabilities in the NLTS2 age range are boys. Further, it also is clear that gender is intertwined with the nature of youth's disabilities, with males accounting for a much higher proportion of some disability categories (e.g., autism, emotional disturbances) than others (e.g., hearing or visual impairments) (Marder, Levine, & Wagner, 2003). Including both gender and disability in multivariate analyses will enable their independent relationships to outcomes to be identified.

- **Racial/ethnic background.** Research has documented the relative disadvantage minority youth experience in education and employment domains (National Center for Education Statistics, 2002), as has research on secondary school students with disabilities (Cameto, Levine, et al., 2003) and out-of-school youth with disabilities (D'Amico, 1991; Wagner, 1991a, 1991b). A similar pattern was expected to emerge in the analyses of postschool experiences of youth with disabilities reported here. Overall, 64% of youth with disabilities are white, 21% are African American, 13% are Hispanic, and 3% have other or multiple racial/ethnic backgrounds. However, this distribution varies across disability categories, with the categories of mental retardation, emotional disturbance, and autism having particularly large percentages of African Americans and particularly small percentages of Hispanic students (Marder, Levine, & Wagner, 2003). Again, multivariate analyses permit the relationships of these factors to outcomes for youth with disabilities to be assessed independently.

Although the variables described above were expected to do much to help illuminate important differences in the experiences of youth with disabilities, focusing on these variables alone would mistakenly imply that youth outcomes are determined solely by somewhat immutable characteristics that young people bring with them to their postschool experiences, and would ignore the important role of household context in shaping the experiences of youth. The following demographic characteristics of the households of youth with disabilities were expected to relate to their achievements in the ways noted below.

- **Household income.** Poverty has been shown to have serious negative consequences for children and youth as a whole (Duncan & Brooks-Gunn, 1997) and for the achievements of youth with disabilities in secondary school (Newman, 1991; Wagner, 1991a; Blackorby et al., 2003; Marder, et al. 2003) and beyond (Wagner, Blackorby, Cameto, & Newman, 1993). A similar pattern was expected for NLTS2 analyses. One-fourth of youth with disabilities live in poverty, a higher rate than in the general population (Marder, Levine, Wagner, & Cardoso, 2003). However, the incomes of families of out-of-school youth with disabilities range widely, with 17% living in households with annual incomes of $15,000 or less and 6% living in households with incomes of more than $75,000. Because poverty is often characteristic of the households of children and youth of color, including both household income and the racial/ethnic background of youth with disabilities in analyses will help disentangle their interrelationships.
- **Head of household's education.** Prior research has shown strong relationships between the educational level of the head of a child's household and the child's performance in school and accomplishments later in life (Choy, 2002; Horn & Nunez, 2000). Because head of household education often is associated with household income

and racial/ethnic differences, including these factors together in analyses will help sort out their interrelationships in understanding variations in early postschool outcomes.

Family Support and Expectations

In addition to the demographic characteristics of households, the dynamic relationships between youth and the adults in their lives can shape perceptions in important ways. One of the crucial forms in which such relationships are expressed is in the expectations parents hold regarding their children's future; expectations can be communicated in myriad ways, helping to guide youth into those futures. Research has demonstrated that having clear, consistent, and high expectations for academic performance plays a key role in student achievement for the general population (Thorkildsen & Stein, 1998). Similar relationships have been found for students with disabilities (Blackorby, Chorost, et al., 2003; Wagner, et al., 1993); they also have been found to influence the employment of youth with disabilities during high school (Cameto, Levine, et al., 2003), and are expected to emerge in NLTS2 analyses of postschool experiences. Parents were asked to report their expectations that their adolescent children with disabilities will "attend school after high school" and "get a paid job." Expectations for youth are generally high. Overall, 60% were expected by parents to attend postsecondary school and 97% to get a paid job.

Youth's Attitudes, Behaviors, and Experiences

Youth with disabilities are far from a "clean slate" when they reach their postschool years. They bring to their experiences in those years attitudes, behaviors, and experiences from earlier encounters in and out of school that help shape their trajectory into early adulthood, including the following:

- **School leaving status.** Whether youth with disabilities completed secondary school or left school without doing so is expected to relate powerfully to the likelihood that they go on to postsecondary education (Butler-Nalin & Wagner, 1991) and to their ability to get a job; the frequency of friendship interactions also could be affected, although a direction of relationship was not hypothesized.
- **Length of time out of high school.** As noted in Chapter 2, youth with disabilities have been out of secondary school from a few days up to about 2 years. It was expected that being out of school longer would result in a higher likelihood that youth have participated in some kind of postsecondary education and have gained experience that would contribute to their ability to get a job; more time out of school also was expected to relate to a lower likelihood of frequent friendship interactions as youth spend their time on other pursuits.
- **Retention at grade level.** The intention in making low-performing students repeat a grade often is to provide an opportunity for them to master material missed in their first exposure to it at a given grade level. Although public policy is shifting against the practice of "social promotion" of underachieving students, research on the effects of grade retention provides little consistent evidence that it benefits students academically (Holmes, 1989); to the contrary, grade retention is linked to higher rates of dropping out of school (Roderick, Nagaoka, Bacon, & Easton, 2000) and poor social adjustment and employment outcomes after high school (Jimerson, 1999). NLTS2 analyses include a

measure of parents' reports of whether youth have ever been retained at grade level in analyses of postsecondary education participation.

- **Previous working experience.** Work experience in high school has been shown to relate positively to gaining employment following high school (Wagner, Blackorby, et al., 1993). A similar relationship was expected in NLTS2 analyses. Parents in Wave 1 interviews were asked "At any time during the past 12 months, did (youth) work for any pay, other than work around the house or a school-sponsored work-study job? That could include being a babysitter or working for a neighbor."
- **Competition between the demands of work and those of postsecondary education.** One hypothesis for the NLTS2 postschool outcomes analyses is that working or going to postsecondary school could limit time for youth to spend on other activities (i.e., that youth who go to school might be less likely to work or see friends regularly). Thus, a measure of whether out-of-school youth are employed is included in the analyses of postsecondary education participation and friendship interactions, and a measure of current postsecondary education participation is included in analyses of employment and friendship interactions. To measure current employment, parents and youth were asked in Wave 2, "Does/do (youth/you) have a paid job now, other than work around the house?" Postsecondary education participation was assessed through a series of three questions: "Are you going to a [(1) 2-year college; (2) 4-year college; or (3) vocational, business, or technical school] now?"

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Appendix C

UNWEIGHTED SAMPLE SIZES

Exhibit C-1
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS WITH WAVE 2 YOUTH WITH DISABILITIES ONLY: EXHIBITS 2-1, 2-3, 2-5, 3-1, 3-3, 4-1, 4-2, 4-5, 4-8, 4-9, 5-5, 5-8, 5-10, 5-20, 5-21, 6-1, 6-6, AND 6-7

Exhibit Number/Contents	Sample Size
Exhibit 2-1	
2002-03 school year	639
2001-02 school year	469
2000-01 school year	110
Exhibit 2-3	
Self-care abilities	1,252
Functional cognitive skills	1,209
Social skills	1,092
Communication ability	1,255
Health	1,259
Exhibit 2-5	
Gender	1,262
Age	1,262
Race/ethnicity	1,262
Household income	1,029
Exhibit 3-1	1,262
Exhibit 3-3	
Low functional cognitive skills	53
Low self-care skills	33
Medium functional cognitive skills	254
Medium self-care skills	137
High functional cognitive skills	912
High self-care skills	1,053
Exhibit 4-1	1,053
Expectations for:	
Any postsecondary education	1,195
Technical/trade school program completion	1,157
2-year college graduation	1,164
4-year college graduation	1,138
Exhibit 4-2	
Goals of:	
Any postsecondary education	531
Postsecondary vocational program	531
2- or 4-year college	531
Exhibit 4-5	
Enrolled since high school in:	
Any postsecondary education	972
Postsecondary vocational/ business/technical school	952
2-year college	950
4-year college	958
Currently enrolled in:	
Any postsecondary education	1,006
Postsecondary vocational/ business/technical school	946
2-year college	948
4-year college	956

Exhibit Number/Contents	Sample Size
Exhibit 4-8	640
Exhibit 4-9	
Perceived disability and informed school	255
Receives services/accommodations from school	257
Perceived sufficiency of services/accommodations	135
Think receiving enough services/accommodations	135
Exhibit 5-5	1,015
Exhibit 5-8	628
Exhibit 5-10	
Youth likes job	485
Satisfaction with aspects of job	476
Worked at least 6 months and has received promotion or pay increase	278
Exhibit 5-20	
Time to find work	257
Who helped find work	627
Exhibit 5-21	
Looking for work	304
What done to find work	199
Exhibit 6-1	
Earn driving license	1,185
Live independently	1,159
Be financially self-sufficient	1,168
Have an independence transition goal	510
Exhibit 6-6	
Living arrangements	902
Marital status	1,092
Household income	829
Parenting status	1,071
Exhibit 6-7	
Living arrangements of parenting youth	61
Living arrangements of nonparenting youth	799
Marital status of parenting youth	62
Marital status of nonparenting youth	987
School completion status of parenting youth	62
School completion status of nonparenting youth	922

Exhibit C-2
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS WITH ALL YOUTH WITH DISABILITIES, WAVES 1 AND 2: EXHIBITS 5-3, 5-6, 5-7, 5-9, 6-4, 6-5, 7-1 TO 7-4

	Wave 1	Wave 2
Exhibit 5-3	1,215	1,178
Exhibit 5-6	677	748
Exhibit 5-7	333	626
Exhibit 5-9	540	672
Exhibit 6-4	1,256	1,257
Exhibit 6-5		
Driving privileges	1,189	1,109
Financial management tools	1,089	1,083
Exhibit 7-1		
Time use	1,192	958
Television watching	1,157	854
Exhibit 7-2		
Sees friends	1,192	991
Has computer and communicates electronically	1,081	1,059
Exhibit 7-3		
Community group membership	1,243	1,101
Volunteer/community service activities	1,227	1,061
Exhibit 7-4		
Ever stopped by police	1,219	1,151
Ever spent night in jail	1,218	1,123
Ever arrested	1,219	1,134
Ever on probation or parole	1,219	1,127

Exhibit C-3
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS FOR DISABILITY CATEGORIES: EXHIBITS 2-2, 2-4, 3-4, 3-5 4-4, 4-7, 5-1, 5-2, 5-4, 6-2, 6-8 TO 6-10, AND 7-5 TO 7-9

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabilities
Exhibit 2-2											
Out of school	630	608	625	575	641	518	688	731	766	264	666
Year of school leaving	164	91	89	171	138	88	93	167	71	54	78
Completed high school	167	90	87	176	136	88	93	172	70	57	72
Completers receiving regular diploma	121	67	58	97	118	81	80	120	55	40	46
Exhibit 2-4											
Self-care skills	171	91	89	182	139	87	92	175	73	60	77
Functional cognitive skills	166	89	85	171	133	86	91	171	69	58	76
Social skills	149	79	79	156	119	80	90	160	57	54	59
Communication ability	171	84	90	178	136	87	93	173	72	59	78
Health	171	85	89	178	136	87	92	174	73	59	77
Exhibit 3-4	168	90	86	172	136	88	92	172	72	58	73
Exhibit 3-5	149	76	50	134	106	75	63	147	45	45	45
Exhibit 4-4											
Expectation for:											
Any postsecondary education	162	87	83	171	133	86	89	165	71	58	74
Technical/trade program completion	156	85	81	165	129	82	87	160	70	57	71
2-year college completion	154	85	81	166	131	84	88	162	70	56	72
4-year college completion	151	82	82	162	128	83	86	159	66	54	71
Goals to attend:											
Any postsecondary education	76	<35	42	40	73	49	37	78	42	<35	<35
Technical/trade program	76	<35	42	40	73	49	37	78	42	<35	<35
2- or 4-year college completion	76	<35	42	40	73	49	37	78	42	<35	<35
Exhibit 4-7											
Enrolled since high school in:											
Any postsecondary education	133	73	64	152	87	80	75	145	51	43	60
Technical/trade program completion	132	73	64	149	75	80	74	144	51	43	59
2-year college completion	133	73	63	149	78	80	74	144	48	42	58
4-year college completion	132	73	<35	149	79	80	75	145	50	43	59
Exhibit 5-1	167	88	83	177	135	87	92	172	71	60	74
Exhibit 5-2	76	<35	42	40	73	49	38	78	42	<35	<35
Exhibit 5-4	166/164	82/88	88/81	175/165	133/123	85/86	90/89	173/170	73/68	59/56	76/75

Sample sizes are presented in the following format: Wave 1/Wave 2.
NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).

Exhibit C-3
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS FOR DISABILITY CATEGORIES: EXHIBITS 2-2, 2-4, 3-4, 3-5 4-4, 4-7, 5-1, 5-2, 5-4, 6-2, 6-8 TO 6-10, AND 7-5 TO 7-9 (Concluded)

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabilities/ Deaf-blindness
Exhibit 6-2											
Earn driving privileges	162	86	83	170	134	85	89	165	71	58	74
Live independently	160	87	82	171	135	84	88	164	70	58	73
Be financially self-sufficient	159	85	83	170	133	83	89	163	71	57	74
Have independence transition goal	76	33	42	40	73	49	37	78	42	20	30
Exhibit 6-8	171/171	92/92	89/90	183/178	138/139	88/89	94/95	176/176	73/73	59/60	78/78
Exhibit 6-9											
Driving privileges	162/150	79/76	88/75	170/154	134/117	85/84	88/86	168/157	69/70	57/54	74/72
Financial management tools	151/148	73/74	83/73	149/148	127/115	77/83	83/84	159/154	58/68	49/53	67/69
Exhibit 6-10											
Independent living arrangements	123	64	53	135	83	80	73	133	55	41	52
Marital status	149	74	72	156	115	84	84	152	69	53	70
Household income	115	55	53	118	102	58	66	124	44	40	44
Parenting status	149	74	72	153	101	85	82	156		54	71
Exhibit 7-5	165/127	79/71	87/71	166/118	132/101	85/74	90/72	171/140	70/63	59/45	74/64
Exhibit 7-6											
Sees friends	164/139	80/70	87/71	167/123	132/105	84/75	90/78	172/144	69/62	59/49	74/63
Has computer and communicates by electronically	143/138	72/72	75/72	145/144	124/110	81/81	84/85	161/155	64/67	46/50	73/71
Exhibit 7-7											
Community group membership	166/149	89/74	89/75	179/152	138/117	87/84	93/85	175/157	73/69	60/54	78/71
Volunteer/community service activity	166/145	87/73	87/73	176/148	136/113	86/77	92/81	172/150	73/66	60/53	77/68
Exhibit 7-8	121	59	65	119	94	70	75	130	52	42	54
Exhibit 7-9											
Ever stopped by police	167/151	82/78	87/79	174/174	136/120	/85	90/88	173/165	NA/70	59/53	78/74
Ever spent night in jail	166/150	82/77	87/77	174/165	NA/117	85/85	90/86	173/157	NA/70	59/53	78/72
Ever arrested	167/151	82/77	87/77	174/169	136/118	85/85	90/86	173/161	73/70	59/53	78/73
Ever on probation or parole	167/151	82/77	87/77	174/165	136/117	NA/84	90/86	173/161	NA	NA/53	78/72

Sample sizes are presented in the following format: Wave 1/Wave 2.

NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).

Exhibit C-4
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY SCHOOL-LEAVING STATUS: EXHIBITS 3-2, 4-3, 4-6, 5-3, 5-11, 5-12, 6-11 TO 6-13, AND 7-10 TO 7-13

	School Completers		Dropouts	
	Wave 1	Wave 2	Wave 1	Wave 2
Exhibit 3-2	NA	895	NA	327
Exhibit 4-3				
Expectations for:				
Postsecondary education	NA	856	NA	302
Technical/trade school completion	NA	822	NA	298
2-year college completion	NA	835	NA	292
4-year college completion	NA	814	NA	288
Goals of:				
Any postsecondary education	439	NA	77	NA
Postsecondary vocational education	439	NA	77	NA
2-year or 4-year college	439	NA	77	NA
Exhibit 4-6				
Any postsecondary education	702	NA	261	NA
Vocational/business/technical school	684	NA	260	NA
2-year college	683	NA	260	NA
4-year college	689	NA	0	NA
Exhibit 5-3	863	854	315	305
Exhibit 5-11	262	466	67	156
Exhibit 5-12	399	511	133	156
Exhibit 6-11	891	893	325	325
Exhibit 6-12				
Driving privileges	862	813	296	278
Financial management tools	826	803	316	263
Exhibit 6-13				
Living arrangements of independent youth	NA	673	NA	220
Marital status	NA	806	NA	269
Parenting status	NA	780	NA	274
Exhibit 7-10	856	720	303	227
Exhibit 7-11				
Sees friends	855	746	304	233
Has computer and communicates electronically	732	785	266	258
Exhibit 7-12				
Community group membership	885	809	320	276
Volunteer/community service activities	875	771	316	274
Exhibit 7-13				
Ever stopped by police	866	828	315	300
Ever spent night in jail	866	821	315	285
Ever arrested	866	824	315	287

NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).

Exhibit C-5
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY AGE: EXHIBITS 2-6, 5-13, 6-14, 6-15, AND 7-14 TO 7-16

	Age		
	15 through 17	18	19
Exhibit 2-6			
Out of school	4,113	1,690	1,035
Year of school leaving	169	545	577
Completed high school	159	529	566
Completers receiving regular diploma	70	380	466
Exhibit 5-13	NA/68	139/251	171/307
Exhibit 6-14	171/173	525/526	560/558
Exhibit 6-15			
Driving privileges	132/151	517/468	540/490
Financial management tools	33/136	514/463	542/484
Exhibit 7-14			
Time use	157/134	505/411	530/413
Television watching	152/118	489/366	516/370
Exhibit 7-15			
Sees friends	158/131	505/421	529/439
Has computer and communicates electronically	143/146	453/445	485/468
Exhibit 7-16			
Community group membership	169/151	521/464	553/486
Volunteer/community service activity	162/145	516/447	549/469

Sample sizes are presented in the following format: Wave 1/Wave 2.

NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).

Exhibit C-6
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY GENDER: EXHIBITS 5-14 TO 5-16, 6-16, 6-17, AND 7-17 TO 7-20

	Males		Females	
	Wave 1	Wave 2	Wave 1	Wave 2
Exhibit 5-14	458	505	219	243
Exhibit 5-15	236	421	197	205
Exhibit 5-16	346	452	194	220
Exhibit 6-16				
Driving privileges	771	723	418	386
Financial management tools	701	708	388	275
Exhibit 6-17				
Living arrangements of independent youth	NA	583	NA	319
Household income	NA	544	NA	285
Marital status	NA	806	NA	269
Parenting status	789	699	419	372
Exhibit 7-17	770	609	422	349
Exhibit 7-18				
Sees friends	772	642	420	349
Has computer and communicates electronically	693	686	389	373
Exhibit 7-19				
Community group membership	807	715	436	386
Volunteer/community service activity	798	684	429	367
Exhibit 7-20				
Ever stopped by police	791	719	424	388
Ever arrested	795	424	723	388
Ever spent night in jail	794	721	424	388

NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).

Exhibit C-7
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY INCOME AND RACE/ETHNICITY: EXHIBITS 5-17 TO 5-19, 6-3, 6-18 TO 6-20, AND 7-21 TO 7-24

	Income			Race/Ethnicity		
	Low	Medium	High	White	African American	Hispanic
Exhibit 5-17	147/178	171/200	272/301	513/539	103/127	47/65
Exhibit 5-18	55/151	87/171	154/244	267/444	42/111	NA/57
Exhibit 5-19	105/166	141/153	230272	431/484	65/114	36/59
Exhibit 6-3 (Indep)	368	331	459	808	238	125
Exhibit 6-18	339	305	422	843	249	127
Exhibit 6-19						
Driving privileges	319/309	285/278	404/422	803/748	231/219	117/111
Financial management tools	289/299	268/272	376/283	736/734	213/211	107/106
Exhibit 6-20	339/339	304/305	422/422	842/843	248/249	127/127
Exhibit 7-21	325/275	287/243	402/342	804/635	229/194	122/100
Exhibit 7-22						
Sees friends	327/280	286/254	401/351	805/665	228/196	122/101
Has computer and communicates electronically	262/290	268/268	389/380	758/723	186/204	104/103
Exhibit 7-23						
Community group membership	337/307	299/278	416/386	834/740	244/219	127/110
Volunteer/community service activity	329/289	297/268	413/369	825/709	238/213	125/107
Exhibit 7-24						
Registered to vote	240	237	321	606	176	85
Stopped by police	331/307	292/279	406/386	820/745	234/220	123/110
Spent night in jail	330/308	293/280	409/388	821/747	236/220	123/110
Been arrested	331/308	293/280	409/389	821/749	237/220	123/110
Been on probation/ parole	331/307	293/280	409/389	821/749	237/219	123/110

Sample sizes are presented in the following format: Wave 1/Wave 2.
NA=Not applicable (e.g., was not asked of age group) or not available (e.g., too few cases in a cell to report separately).