

## 5. CHANGES IN SELECTED OUTCOMES OF YOUTH WITH DISABILITIES

“Improving results for infants, toddlers, children and youth with disabilities ages birth through 21” is the mission of OSEP (Office of Special Education Programs, 2002). Comparisons between the achievements of youth with disabilities in 1987 and in 2001 provide an important perspective on the extent to which improvements are occurring for one age group—15- through 17-year-olds. This section presents comparisons of achievements of this age group of youth in five domains:

- School engagement
- Extracurricular participation
- Employment
- Social adjustment
- Independence.

### School Engagement

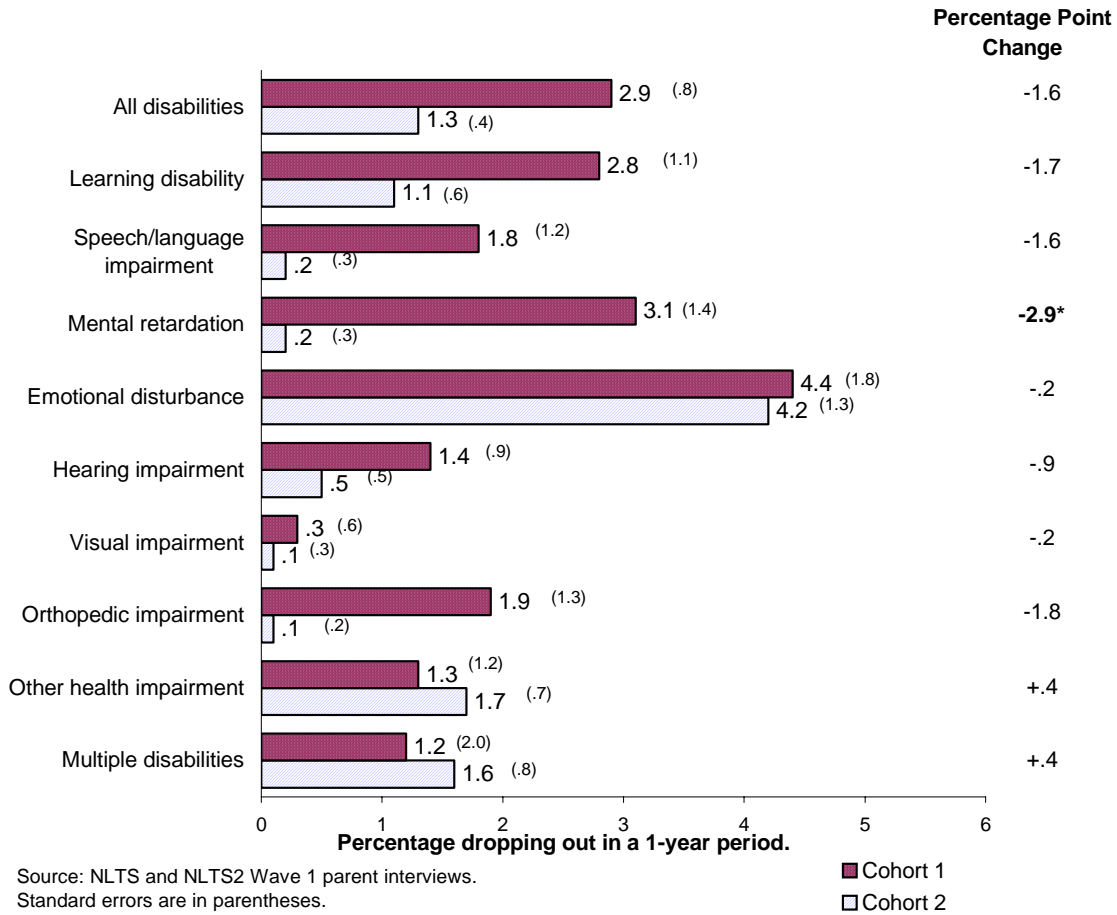
The importance of a high school diploma as an entry requirement for much postsecondary education, and training has increased to meet the rising demands of the U.S. labor market for highly skilled workers. Yet almost a half-million youth leave high school without graduating each year (Kaufman, Klein, & Frase, 1999). Nonetheless, the high school dropout rate in the general population has declined somewhat; in 1972, the 1-year dropout rate indicated that 6.1% of students had dropped out of school in the preceding year, compared with 4.8% of students in 2000 (Kaufman, Alt, & Chapman, 2001).

Given that a similar small decline occurred among youth with disabilities (Exhibit 5-1),<sup>1</sup> for the group overall, the rate of 1% in 2001 was significantly lower than for the general population (4.8%,  $p < .001$ ). However, the only statistically significant decline occurred for youth with mental retardation (3 percentage points,  $p < .05$ ).

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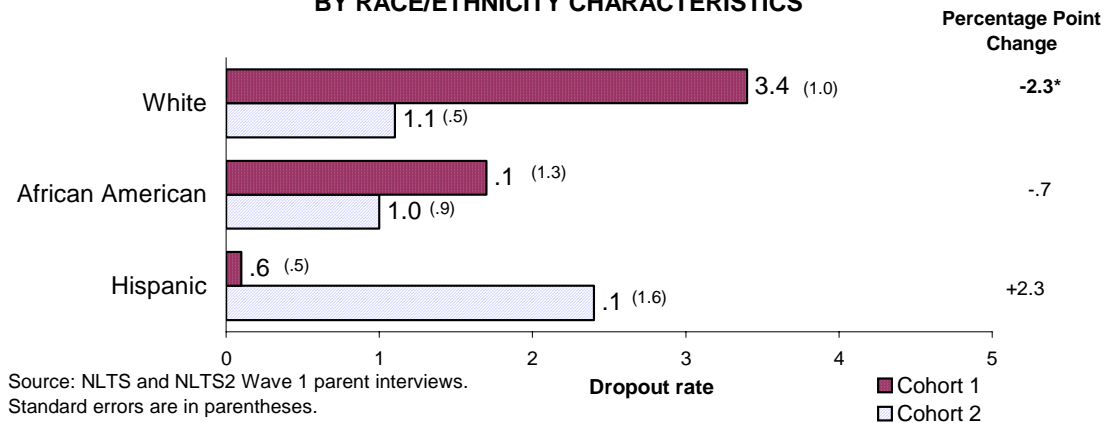
<sup>1</sup> The dropout rate for cohort 1 is the percentage of youth who were in school in the 1985-86 school year, were not in school at the time of the interview (August through November 1987), and whose parent indicated that they had dropped out. This created a period in which youth could have dropped out that ranged from 3 to 13 months. For cohort 2, the dropout rate is the percentage of youth who were in school in October of the 2000-2001 school year, were not in school at the time of the interview (May through September 2001), and whose parent said they had dropped out. This created a period in which youth could have dropped out that ranged from 7 to 12 months. Both periods are referred to as a “1-year rate.”

**Exhibit 5-1**  
**CHANGES IN DROPOUT RATES, BY DISABILITY CATEGORY**



There were no significant differences in the dropout rate between boys or girls or youth who differed in household income levels. However, youth with different racial/ethnic backgrounds experienced changes in the dropout rate differently (Exhibit 5-2). A significant decline in the

**Exhibit 5-2**  
**CHANGES IN DROPOUT RATES OF YOUTH WITH DISABILITIES, BY RACE/ETHNICITY CHARACTERISTICS**



dropout rate was apparent only for white youth (2 percentage points,  $p < .05$ ), whereas an increase of the same magnitude for Hispanic youth did not attain statistical significance for that smaller group.

## **Extracurricular Participation**

This section focuses on two aspects of extracurricular involvement—participation by youth with disabilities in groups and in volunteer or community service. The social, psychological, and educational benefits of extracurricular activities are well known. Reflecting the importance of extracurricular activities for students with disabilities, the Individuals with Disabilities Education Act Amendments of 1997 requires Individual Educational Programs (IEPs) to address student participation in extracurricular and nonacademic activities (P.L. 105-17, 614 111 Stat.84). Presence and participation in the community, including extracurricular activities, is one of the primary outcome domains for assessing the well-being of youth with disabilities posited by the National Center on Educational Outcomes (NCEO, 1994). Participation in organized groups during secondary school has been correlated with higher levels of self-esteem, increased student engagement, more expressed satisfaction with school, improved academic performance, and increased likelihood of school completion (Gerber, 1996; Mahoney & Cairns, 1997; Marsh, 1992).

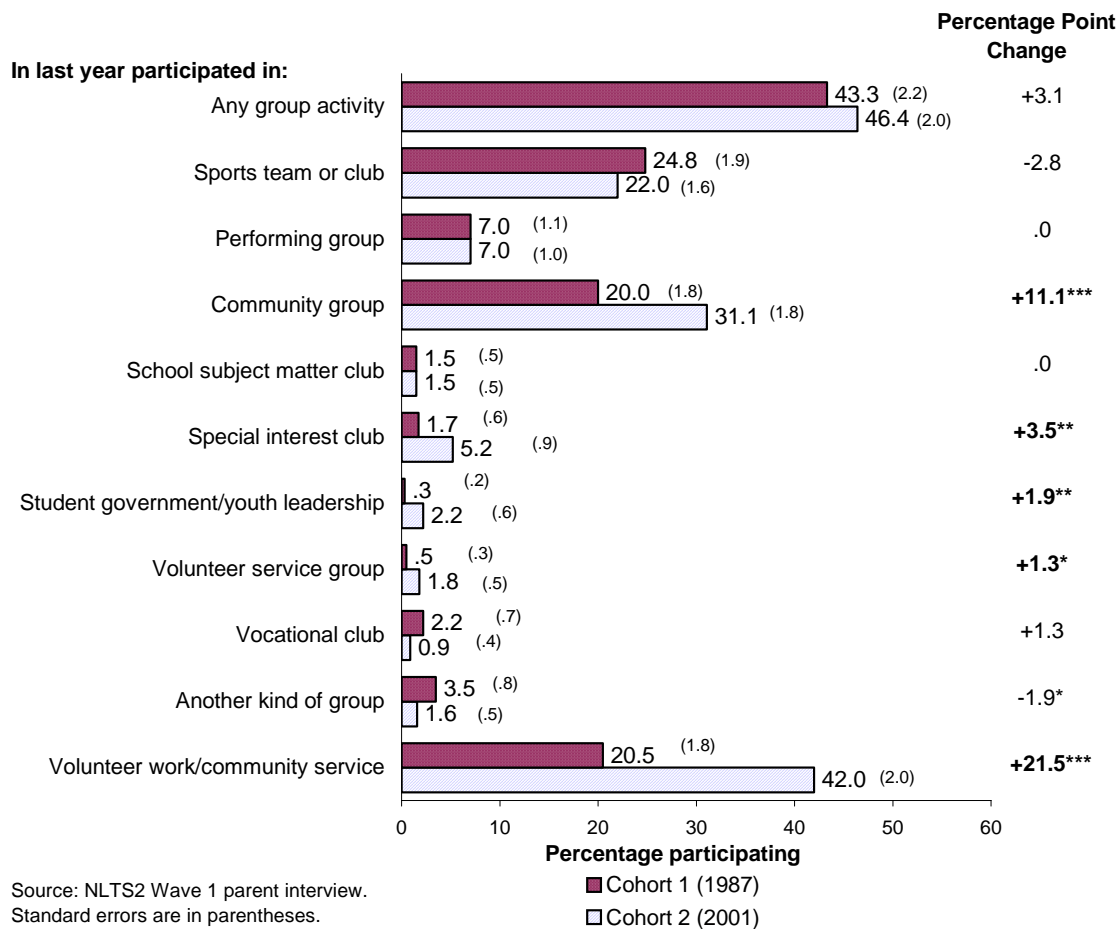
In addition to recognizing the value of extracurricular activity in general, during the last decade, student involvement in volunteer/community service activities has received increasing emphasis (NCES, 1999). Participation in volunteer activities has been linked to increased engagement in democratic processes, lowered likelihood of dropping out, improved transition from school to work, and improved educational attitudes and performance (Brandeis University, 1999; Conrad & Hedin, 1991; Kraft, 1996; NCES, 1997; Shumer, 1994).

To learn about the participation of youth with disabilities in group activities, parents of youth in both cohorts were asked to report on youth's participation in organized school or community groups during the preceding year. According to parent reports, group participation remained stable over time (Exhibit 5-3), with 43% and 46% of youth in the two cohorts participating in any type of organized group activity. This rate of participation in group activities was somewhat lower for youth with disabilities in cohort 2 than for those in the general population (59%, National Survey of America's Families—NSAF, 1999).

Reflecting their wide-ranging interests, youth in both cohorts belonged to a variety of types of groups. Sports teams were the most popular type of group activity in cohort 1, with 25% of youth with disabilities participating—a rate that did not change markedly over time. Participation in sports teams also was stable for youth in the general population, although at a rate about twice as high as for youth with disabilities—52% in 1988 (NCES, 1993) and 49% in 1999 (NSAF, 1999).

Community groups, such as scouting and religious or political groups, surpassed team sports to become the most popular activity in cohort 2; with almost one-third of youth with disabilities participating in them. Community group participation showed the greatest gains over time (11 percentage points,  $p < .001$ ). Although in both cohorts many more youth participated in sports teams and community groups than other types of groups, several other types of groups showed increased participation over time as well. Special interest clubs, such as photography or computer clubs

**Exhibit 5-3**  
**CHANGES IN THE EXTRACURRICULAR PARTICIPATION OF YOUTH**  
**WITH DISABILITIES, BY COHORT**



showed a 4-percentage-point gain in attendance ( $p < .01$ ), student government experienced a 2-percentage-point gain ( $p < .01$ ), and volunteer service groups gained 1 percentage point ( $p < .05$ ).

Volunteer/community service participation, whether or not as part of group membership, more than doubled over time, with 42% having volunteered or done other forms of community service in 2001, compared with 21% in 1987 ( $p < .001$ ). During the period between the two cohorts, the number of schools promoting community service opportunities almost tripled, with 27% of high schools offering community service opportunities to their students in 1984, compared with 80% in 1999 (Newmann & Rutter, 1985; Skinner & Chapman, 1999). The large increase in volunteer activity experienced by youth with disabilities may, in part, reflect this greater emphasis on volunteerism by schools. Some change may also result from differences in item wording and placement in the parent interviews for the two cohorts. In cohort 1, the question about volunteer “work” was included after the section of questions focusing on employment, whereas in cohort 2, a question focusing on “volunteer or community service activities” was included in the section on after-school and extracurricular activities. The broader

definition in cohort 2 may have prompted a larger percentage of parents to consider their child's activities as "volunteer or community service" than as "volunteer work." The degree to which this difference in wording affects the comparison between cohorts is unknown.

### **Disability Differences in Changes in Extracurricular Participation**

Although participation in organized groups differed by disability category in both cohorts, the range in participation among those in the different disability groups narrowed over time (Exhibit 5-4). The 28-percentage-point difference between those with the highest and lowest levels of participation in cohort 1 (youth with visual impairments and those with multiple disabilities,  $p < .001$ ) had narrowed to a 10-percentage-point difference by 2001 (youth with hearing impairments and those with mental retardation,  $p < .01$ ).

Youth in three disability categories experienced significant changes in group participation. Significantly fewer youth with visual impairments were group members in cohort 2 than in cohort 1 (13-percentage-point decrease,  $p < .05$ ), which resulted in this group no longer being most likely to participate in organized groups. Youth with multiple disabilities or other health impairments experienced significant gains in group participation over time (15 percentage points,  $p < .05$  and  $p < .01$ ).

Change in participation in various types of organized groups differed widely by disability category. Youth with other health impairments experienced significant gains in membership in nearly all types of groups, including being the only group that was significantly more likely to be sports team members in cohort 2 than in cohort 1 (11 percentage points,  $p < .01$ ). With the exception of youth with visual impairments, all youth experienced significant increases in community group participation, ranging from a 9-percentage-point gain ( $p < .05$ ) for those with learning disabilities to a 20-percentage-point gain for those with multiple disabilities ( $p < .001$ ). Special interest group membership significantly increased for youth in four disability categories, those with learning disabilities or hearing, orthopedic, or other health impairments (3 to 8 percentage points,  $p < .05$  and  $.001$ ). Those with other health impairments and learning disabilities were the only groups to experience significant increases in participation in student government (2 percentage points,  $p < .01$  and  $p < .05$ ). Membership in performing groups, subject matter clubs, and other kinds of groups remained fairly stable over time for all disability groups.

Youth in all disability categories experienced highly significant increases in volunteer/community service participation, ranging from a 17-percentage-point increase for those with visual impairments ( $p < .01$ ) to a 36-percentage-point increase for those with other health impairments ( $p < .001$ ).

**Exhibit 5-4**  
**CHANGES IN EXTRACURRICULAR PARTICIPATION, BY DISABILITY CATEGORY**

|   | Learning Disability | Speech/<br>Language Impairment | Mental Retardation | Emotional Disturbance | Hearing Impairment | Visual Impairment | Orthopedic Impairment | Other Health Impairment | Multiple Disabilities |
|---|---------------------|--------------------------------|--------------------|-----------------------|--------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Percentage taking part in the past year in: |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Any organized group activity                |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1                                    | 48.3<br>(3.4)       | 50.4<br>(4.5)                  | 32.0<br>(3.4)      | 33.0<br>(3.8)         | 54.9<br>(3.6)      | 57.5<br>(5.0)     | 38.4<br>(4.5)         | 36.2<br>(4.8)           | 29.6<br>(6.1)         |
| Cohort 2                                    | 48.1<br>(3.1)       | 52.4<br>(3.4)                  | 40.0<br>(3.1)      | 40.5<br>(3.0)         | 52.7<br>(3.4)      | 44.2<br>(4.3)     | 47.0<br>(3.4)         | 50.9<br>(2.6)           | 44.7<br>(3.2)         |
| Percentage point change                     | +2                  | +2.0                           | +8.0               | +7.5                  | -2.2               | <b>-13.3*</b>     | +8.6                  | <b>+14.7**</b>          | <b>+15.1*</b>         |
| Sports team                                 |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1                                    | 28.8<br>(3.1)       | 26.9<br>(4.0)                  | 15.8<br>(2.7)      | 19.0<br>(3.2)         | 36.6<br>(3.5)      | 24.4<br>(4.3)     | 15.9<br>(3.4)         | 11.0<br>(3.1)           | 18.5<br>(5.2)         |
| Cohort 2                                    | 23.6<br>(2.6)       | 27.8<br>(3.0)                  | 20.7<br>(2.5)      | 14.0<br>(2.2)         | 29.3<br>(3.1)      | 16.2<br>(3.2)     | 14.9<br>(2.5)         | 22.3<br>(2.2)           | 19.9<br>(2.6)         |
| Percentage point change                     | -5.2                | +9                             | +4.9               | -5.0                  | -7.3               | -8.2              | -1.0                  | <b>+11.3**</b>          | +1.4                  |
| Community group                             |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1                                    | 22.3<br>(2.9)       | 22.3<br>(3.8)                  | 15.5<br>(2.7)      | 14.5<br>(2.8)         | 21.0<br>(2.9)      | 24.8<br>(4.3)     | 20.8<br>(3.8)         | 19.7<br>(4.0)           | 9.2<br>(3.9)          |
| Cohort 2                                    | 31.3<br>(3.0)       | 35.1<br>(3.3)                  | 28.0<br>(2.8)      | 29.1<br>(2.8)         | 34.0<br>(3.2)      | 28.1<br>(3.9)     | 33.0<br>(3.2)         | 38.7<br>(2.5)           | 29.0<br>(2.9)         |
| Percentage point change                     | <b>+9.0*</b>        | <b>+12.8*</b>                  | <b>+12.5**</b>     | <b>+14.6***</b>       | <b>+13.0**</b>     | +3.3              | <b>+12.2*</b>         | <b>+19.0***</b>         | <b>+19.8***</b>       |
| Special interest group                      |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1                                    | 1.8<br>(.9)         | 3.0<br>(1.5)                   | .8<br>(.7)         | 1.6<br>(1.0)          | 2.4<br>(1.1)       | 4.6<br>(2.1)      | 1.4<br>(1.1)          | .8<br>(.9)              | 1.7<br>(1.7)          |
| Cohort 2                                    | 5.2<br>(1.4)        | 5.1<br>(1.5)                   | 4.2<br>(1.3)       | 3.8<br>(1.2)          | 9.4<br>(2.0)       | 9.2<br>(2.5)      | 9.7<br>(2.0)          | 7.3<br>(1.4)            | 5.0<br>(1.4)          |
| Percentage point change                     | <b>+3.4*</b>        | +1.9                           | +2.1               | +2.2                  | <b>+7.0**</b>      | +4.6              | <b>+8.3***</b>        | <b>+6.5***</b>          | +3.3                  |

**Exhibit 5-4**  
**CHANGES IN EXTRACURRICULAR PARTICIPATION, BY DISABILITY CATEGORY (Concluded)**

|  | Learning Disability | Speech/<br>Language Impairment | Mental Retardation | Emotional Disturbance | Hearing Impairment | Visual Impairment | Orthopedic Impairment | Other Health Impairment | Multiple Disabilities |
|--|---------------------|--------------------------------|--------------------|-----------------------|--------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Percentage taking part in the past year in:              |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Student government/leadership development group          |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | .2<br>(.3)          | 3.0<br>(1.5)                   | .0<br>(.0)         | .0<br>(.0)            | 1.5<br>(.9)        | 2.2<br>(1.5)      | .7<br>(.8)            | .0<br>(.0)              | .0<br>(.0)            |
| Cohort 2   | 2.6<br>(1.0)        | 3.7<br>(1.3)                   | .9<br>(.6)         | .8<br>(.6)            | 3.4<br>(1.2)       | 3.8<br>(1.6)      | 2.1<br>(1.0)          | 1.9<br>(.7)             | .8<br>(1.0)           |
| Percentage point change                                  | <b>+2.4*</b>        | <b>+.7</b>                     | <b>+.9</b>         | <b>+.8</b>            | <b>+1.9</b>        | <b>+1.6</b>       | <b>+1.4</b>           | <b>+1.9**</b>           | <b>+.8</b>            |
| Volunteer service group                                  |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | .3<br>(.4)          | 0<br>(.0)                      | 1.0<br>(.7)        | .3<br>(.4)            | .7<br>(.6)         | 3.1<br>(1.7)      | 1.1<br>(1.0)          | 2.1<br>(1.4)            | .1<br>(.4)            |
| Cohort 2   | 1.7<br>(.8)         | 3.1<br>(1.2)                   | 1.3<br>(.7)        | 1.7<br>(.8)           | 2.9<br>(1.1)       | 1.6<br>(1.1)      | 2.2<br>(1.0)          | 2.8<br>(.9)             | 2.9<br>(1.1)          |
| Percentage point change                                  | <b>+1.4</b>         | <b>+3.1**</b>                  | <b>+.3</b>         | <b>+1.4</b>           | <b>+2.2</b>        | <b>-1.5</b>       | <b>+1.1</b>           | <b>+.7</b>              | <b>+2.8</b>           |
| Percentage who had done volunteer work/community service |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 24.0<br>(2.9)       | 17.4<br>(3.4)                  | 12.0<br>(2.4)      | 19.0<br>(3.2)         | 19.8<br>(2.9)      | 26.6<br>(4.5)     | 15.5<br>(3.4)         | 12.1<br>(3.3)           | 7.2<br>(3.5)          |
| Cohort 2   | 43.5<br>(3.0)       | 49.8<br>(3.4)                  | 36.6<br>(3.0)      | 36.0<br>(3.0)         | 46.8<br>(3.4)      | 43.3<br>(4.3)     | 41.4<br>(3.4)         | 47.7<br>(2.6)           | 34.3<br>(3.4)         |
| Percentage point change                                  | <b>+19.5***</b>     | <b>-32.4***</b>                | <b>+24.6***</b>    | <b>+17.0***</b>       | <b>+27.0***</b>    | <b>+16.7**</b>    | <b>+25.9***</b>       | <b>+35.6***</b>         | <b>+27.1***</b>       |

Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

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

## Demographic Differences in Changes in Extracurricular Participation

**Gender.** Boys' and girls' overall participation in organized groups did not differ markedly over time or between genders. Nor were there significant differences between genders or changes across cohorts regarding membership in sports teams, school subject matter clubs, volunteer service groups, or vocational clubs.

**Exhibit 5-5  
CHANGES IN EXTRACURRICULAR  
PARTICIPATION, BY GENDER**

|  | Boys            | Girls           |
|--|-----------------|-----------------|
| Percentage taking part in the past year in:              |                 |                 |
| Community group  |                 |                 |
| Cohort 1   | 19.1<br>(1.4)   | 21.8<br>(3.2)   |
| Cohort 2   | 28.5<br>(2.2)   | 36.3<br>(3.3)   |
| Percentage point change                                  | <b>+9.4***</b>  | <b>+14.5***</b> |
| Special interest club                                    |                 |                 |
| Cohort 1   | 1.6<br>(.7)     | 1.7<br>(1.0)    |
| Cohort 2   | 4.9<br>(1.1)    | 5.7<br>(1.6)    |
| Percentage point change                                  | <b>+3.3*</b>    | <b>+4.0*</b>    |
| Student government/leadership development group          |                 |                 |
| Cohort 1   | .3<br>(.3)      | .3<br>(.4)      |
| Cohort 2   | 1.0<br>(.5)     | 4.5<br>(1.4)    |
| Percentage point change                                  | <b>+7</b>       | <b>+4.2**</b>   |
| Percentage who had done volunteer work/community service |                 |                 |
| Cohort 1   | 20.5<br>(2.2)   | 20.5<br>(3.1)   |
| Cohort 2   | 41.6<br>(2.4)   | 42.8<br>(3.3)   |
| Percentage point change                                  | <b>+21.1***</b> | <b>+22.3***</b> |

Source: NLTS and NLTS2 Wave 1 parent interviews.  
Standard errors are in parentheses.  
Statistically significant difference in a two-tailed test at the following levels: \* p<.05, \*\* p<.01, \*\*\* p<.001.

However, both genders increased their membership in community groups (Exhibit 5-5), with a 9-percentage-point increase for boys (p<.001) and a 14-percentage-point increase for girls (p<.001). The larger increase for girls resulted in their becoming significantly more likely to be community group members than boys (36% vs. 28%, p<.05). Similarly, participation in student leadership significantly increased only for girls (4 percentage points, p<.01), again resulting in girls becoming more likely than boys to be student government members (4.5% vs. 1%, p<.05). Both genders also increased their participation in special interest clubs (3 and 4 percentage points for boys and girls, respectively, p<.05).

The rate of participation in volunteer work significantly increased between 1987 and 2001 for both genders, with little difference between them in the amount of increase or the level of volunteer involvement in either cohort.

### Household income.

Membership in an organized group did not change markedly between cohorts for youth from families with high, medium or low incomes (Exhibit 5-6). Youth from higher-

income families in cohort 2 continued to be more likely to be group participants than were their peers from lower income families (52% vs. 39%, p<.01). Those at all income levels significantly



**Exhibit 5-6**  
**CHANGES IN EXTRACURRICULAR PARTICIPATION,**  
**BY INCOME AND RACE/ETHNICITY**

|  | Income          |                 |                 | Race/Ethnicity  |                  |                |
|--|-----------------|-----------------|-----------------|-----------------|------------------|----------------|
|  | Low             | Medium          | High            | White           | African American | Hispanic       |
| Percentage taking part in the past year in:              |                 |                 |                 |                 |                  |                |
| Any organized group activity                             |                 |                 |                 |                 |                  |                |
| Cohort 1   | 35.2<br>(4.2)   | 41.1<br>(4.2)   | 56.4<br>(3.6)   | 46.9<br>(2.7)   | 39.3<br>(4.6)    | 29.0<br>(7.2)  |
| Cohort 2   | 39.0<br>(3.2)   | 49.7<br>(3.8)   | 51.5<br>(3.8)   | 49.4<br>(2.7)   | 46.4<br>(4.6)    | 36.3<br>(5.1)  |
| Percentage point change                                  | +3.8            | +8.6            | -4.9            | +2.5            | +7.1             | +7.3           |
| Community group  |                 |                 |                 |                 |                  |                |
| Cohort 1   | 17.1<br>(3.3)   | 17.6<br>(3.2)   | 26.3<br>(3.2)   | 20.9<br>(2.2)   | 21.9<br>(3.9)    | 5.4<br>(3.6)   |
| Cohort 2   | 25.9<br>(2.9)   | 33.0<br>(3.6)   | 36.4<br>(3.6)   | 34.2<br>(2.5)   | 32.2<br>(4.2)    | 21.1<br>(4.1)  |
| Percentage point change                                  | <b>+8.8*</b>    | <b>+15.4**</b>  | <b>+10.1*</b>   | <b>+13.3***</b> | +10.3            | <b>+15.7**</b> |
| Special interest club                                    |                 |                 |                 |                 |                  |                |
| Cohort 1   | .6<br>(.7)      | 2.1<br>(1.2)    | 1.4<br>(.9)     | 2.0<br>(.8)     | 1.1<br>(1.0)     | .9<br>(1.5)    |
| Cohort 2   | 3.0<br>(1.1)    | 6.0<br>(1.8)    | 6.4<br>(1.9)    | 6.9<br>(1.3)    | 1.8<br>(1.2)     | 3.1<br>(1.7)   |
| Percentage point change                                  | +2.4            | +3.9            | <b>+5.0*</b>    | <b>+4.9**</b>   | +7.7             | +2.2           |
| Student government/youth leadership                      |                 |                 |                 |                 |                  |                |
| Cohort 1   | .2<br>(.4)      | .1<br>(.3)      | .3<br>(.4)      | .2<br>(.2)      | .3<br>(.5)       | 1.4<br>(1.9)   |
| Cohort 2   | 1.7<br>(.9)     | 2.7<br>(1.2)    | 2.3<br>(1.1)    | 2.5<br>(.8)     | 2.3<br>(1.4)     | 1.0<br>(1.0)   |
| Percentage point change                                  | +1.5            | <b>+2.6*</b>    | +2.0            | <b>+2.3**</b>   | +2.0             | -.4            |
| Volunteer service group                                  |                 |                 |                 |                 |                  |                |
| Cohort 1   | .1<br>(.3)      | .6<br>(.7)      | .9<br>(.7)      | .5<br>(.4)      | .5<br>(.7)       | .1<br>(.5)     |
| Cohort 2   | .2<br>(.3)      | 1.9<br>(1.0)    | 3.3<br>(1.4)    | 2.1<br>(.7)     | 1.0<br>(.9)      | 1.6<br>(1.3)   |
| Percentage point change                                  | +1.1            | +1.3            | +2.4            | <b>+1.6*</b>    | +5.5             | +1.5           |
| Another kind of group                                    |                 |                 |                 |                 |                  |                |
| Cohort 1   | 4.3<br>(1.8)    | 1.8<br>(1.1)    | 5.3<br>(1.6)    | 3.6<br>(1.0)    | 2.4<br>(1.4)     | 5.1<br>(3.5)   |
| Cohort 2   | 2.2<br>(1.0)    | 2.3<br>(1.1)    | .8<br>(.7)      | 1.8<br>(.7)     | 1.3<br>(1.0)     | 1.3<br>(1.1)   |
| Percentage point change                                  | -2.1            | +5.5            | <b>-4.5**</b>   | -1.8            | -1.1             | -3.8           |
| Percentage who had done volunteer work/community service |                 |                 |                 |                 |                  |                |
| Cohort 1   | 14.7<br>(3.2)   | 22.1<br>(3.5)   | 29.1<br>(3.3)   | 24.9<br>(2.4)   | 9.8<br>(2.8)     | 13.4<br>(5.4)  |
| Cohort 2   | 33.1<br>(3.1)   | 42.5<br>(3.8)   | 52.9<br>(3.8)   | 47.3<br>(2.6)   | 32.5<br>(4.2)    | 31.6<br>(4.7)  |
| Percentage point change                                  | <b>+18.4***</b> | <b>+20.4***</b> | <b>+23.8***</b> | <b>+22.4***</b> | <b>+22.7***</b>  | <b>+18.2*</b>  |

Source: NLTS and NLTS2 Wave 1 parent interviews. Standard errors are in parentheses.

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

increased their membership in community groups, with those from medium-income families experiencing the largest gains (9 to 15 percentage points,  $p < .05$  and  $.01$ ). Changes in participation in special interest clubs, student government, and other types of groups were less consistent across family income levels; with only those from higher income families experiencing changes in their special interest club and other group membership (a 5-percentage point-gain,  $p < .05$ , and a 4-percentage-point decline,  $p < .01$ ). Only those from medium-income families significantly increased their participation in student leadership groups (3 percentage points,  $p < .05$ ). Membership in sports teams, performing groups, subject matter clubs, and vocational clubs remained stable over time for youth at all income levels.

Youth at all income levels experienced significant increases in their participation in volunteer work/community service (18 to 24 percentage points,  $p < .001$ ). Those from higher-income families remained significantly more likely to engage in such activities than did their peers from lower income families (53% vs. 33%,  $p < .001$ ). It is notable that this increase was not associated with an increase in involvement in volunteer groups, suggesting that individual volunteer activities, rather than group activities, were an important part of students' volunteerism.

**Race/ethnicity.** White youth with disabilities experienced significant gains in membership in several types of groups. They were the only group with significantly greater participation in 2001 than in 1987 in special interest groups, student government, and volunteer groups (2 and 5 percentage points,  $p < .01$  and  $.05$ ). White and Hispanic youth were the only racial/ethnic groups to experience increases in community group participation (13 and 16 percentage points,  $p < .001$ ). Membership in sports teams, performing groups, subject matter clubs, and vocational clubs remained stable over time for youth in all racial/ethnic groups.

Although youth in all ethnic/racial groups experienced significant increases in their involvement in volunteer activities (18 to 23 percentage points,  $p < .05$ ,  $p < .001$ ), white youth remained the most likely to volunteer (47% compared with 33% for African American and 32% for Hispanic youth,  $p < .01$ ).

## **Employment**

Work always has been part of the lives of many youth in the United States (Kerschner, 2000). In recent years, approximately 80% of youth reported holding jobs at some point during high school (Commission on Behavioral and Social Sciences and Education, 1998). Entry into the labor market often begins earlier than high school, with approximately half of youth ages 12 and 13 and nearly two-thirds of youth ages 14 or 15 reporting that they work (Rothstein & Herz, 2000). With the majority of youth working at some time in their middle- or high-school years, youth employment has become the norm in American society.

**Exhibit 5-7**  
**CHANGES IN EMPLOYMENT CHARACTERISTICS**  
**OF YOUTH WITH DISABILITIES**

|   | Cohort 1      | Cohort 2      | Percentage<br>Point<br>Change |
|---|---------------|---------------|-------------------------------|
| Percentage in the last year with:                       |               |               |                               |
| A paid job outside the home                             | 51.0<br>(2.2) | 60.2<br>(2.0) | <b>+9.2**</b>                 |
| A work-study job  | 9.5<br>(1.3)  | 15.2<br>(1.6) | <b>+5.7**</b>                 |
| Percentage with a paid job currently                    | 36.3<br>(2.1) | 29.0<br>(1.8) | <b>-7.3**</b>                 |
| Percentage of employed youth currently working:         |               |               |                               |
| 8 hours or less per week                                | 26.0<br>(3.5) | 31.3<br>(2.6) | +5.3                          |
| 8.1 to 16 hours per week                                | 13.9<br>(2.8) | 27.4<br>(2.5) | <b>+13.5***</b>               |
| More than 16 hours per week                             | 60.1<br>(3.9) | 41.2<br>(2.8) | <b>-18.9***</b>               |
| Percentage earning at their current or most recent job: |               |               |                               |
| Less than minimum wage                                  | 32.2<br>(3.7) | 9.0<br>(2.5)  | <b>-23.2***</b>               |
| Minimum wage  | 26.4<br>(3.5) | 23.1<br>(3.7) | -3.3                          |
| More than minimum wage                                  | 41.4<br>(4.0) | 67.9<br>(4.2) | <b>+26.5***</b>               |

Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

Statistically significant difference in a two-tailed test at the following levels:

\* p<.05, \*\* p<.01, \*\*\* p<.001.

Work was more likely to be part of the lives of youth with disabilities in 2001 than in 1987 (Exhibit 5-7). Six in ten youth in cohort 2 had worked for pay outside the home in the preceding year, a rate quite similar to that of the general population of youth (63%, Udry, 1998). This was a 9-percentage-point increase over the 1-year employment rate of cohort 1 (51%, p<.01). The rate at which youth held work-study jobs also increased, by almost 6 percentage points (p<.01). Somewhat surprisingly, however, the rate at which cohort 2 youth were working at a given point in time declined by 7 percentage points relative to cohort 1 (29% vs. 36%, p<.01), suggesting that cohort 2 youth may have been more likely to engage in summer, seasonal, or sporadic employment (e.g., babysitting).

Not only did the employment rates change over time, so did the characteristics of the jobs held by youth. In 2001, youth with disabilities tended to work fewer hours than their peers in 1987. For example, 41% of cohort 2 youth worked more than 16 hours per week, a rate similar to the general population (46%, Udry, 1998). This compares with 60% of those in cohort 1 working more than 16 hours per week (p<.001). In light of concerns raised regarding the potential negative consequences of students working long hours (National Research Council, 1998), this reduction in work hours could benefit youth with disabilities. Cohort 2 youth also tended to be better paid; 68% earned more than the minimum wage, whereas only 41% had done so in 1987.

## **Disability Differences in Changes in Employment**

Gains in employment in the preceding year were experienced primarily by youth with learning disabilities and speech, orthopedic, or other health impairments (Exhibit 5-8), ranging from 10 to 17 percentage points ( $p < .05$  and  $.01$ ). In contrast, increases in work-study employment occurred primarily among youth with mental retardation, emotional disturbances, or multiple disabilities (14 to 18 percentage points,  $p < .05$  and  $.001$ ). Changes in the rate of current employment generally were small, with the exception of a 16-percentage-point drop among youth with emotional disturbances ( $p < .01$ ). Reductions in the percentage of youth working more than 16 hours per week were evident for five categories, ranging from 17 to 29 percentage points ( $p < .05$  and  $.01$  for youth with learning disabilities, mental retardation, emotional disturbances, and orthopedic and other health impairments). The proportion of youth earning more than the minimum wage was 19 to 48 percentage points higher for cohort 2 than cohort 1, with the differences being statistically significant for all categories except mental retardation. In 1987, with one exception (learning disabilities), about one-third or fewer in each group earned the minimum wage. In 2001, from more than one-half (youth with visual or orthopedic impairments) to almost three-fourths (youth with speech impairments) earned more than the minimum wage.

## **Demographic Differences in Changes in Employment**

**Gender.** Girls were more commonly the beneficiaries of increases in paid employment during the past year, with their gain of 14 percentage points being double that of boys (Exhibit 5-9). Thus, the gender gap narrowed from 12 percentage points in 1987 (55% for boys vs. 43% for girls,  $p < .05$ ), to 5 percentage points in 2001—no longer a significant difference. Work-study employment showed approximately the same increase for boys and girls. However, current paid employment rates declined almost twice as much for boys as for girls. Reductions in hours worked and increases in pay were similar for boys and girls.

**Exhibit 5-8**  
**CHANGES IN EMPLOYMENT CHARACTERISTICS, BY COHORT AND DISABILITY CATEGORY**

|  | Learning Disability | Speech/<br>Language Impairment | Mental Retardation | Emotional Disturbance | Hearing Impairment | Visual Impairment | Orthopedic Impairment | Other Health Impairment | Multiple Disabilities |
|--|---------------------|--------------------------------|--------------------|-----------------------|--------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Percentage of youth who in the past year had:            |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| A paid job outside the home                              |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 57.1<br>(3.3)       | 42.5<br>(4.4)                  | 31.9<br>(3.4)      | 61.7<br>(3.9)         | 44.5<br>(3.6)      | 35.6<br>(4.8)     | 18.3<br>(3.6)         | 38.4<br>(4.9)           | 15.2<br>(4.8)         |
| Cohort 2   | 67.2<br>(2.9)       | 59.5<br>(3.4)                  | 38.2<br>(3.1)      | 60.5<br>(3.1)         | 52.1<br>(3.5)      | 39.6<br>(4.2)     | 31.3<br>(3.3)         | 55.7<br>(2.6)           | 24.0<br>(2.8)         |
| Percentage point change                                  | <b>+10.1*</b>       | <b>+17.0**</b>                 | +6.3               | -1.2                  | +7.6               | +4.0              | <b>+13.0**</b>        | <b>+17.3**</b>          | +8.8                  |
| A work-study job   |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 8.4<br>(1.9)        | 6.0<br>(2.1)                   | 15.7<br>(2.7)      | 5.5<br>(1.9)          | 11.9<br>(2.4)      | 12.6<br>(3.4)     | 14.4<br>(3.3)         | 13.6<br>(3.5)           | 14.7<br>(4.8)         |
| Cohort 2   | 10.2<br>(2.0)       | 9.0<br>(2.2)                   | 33.8<br>(3.3)      | 19.5<br>(2.7)         | 18.0<br>(2.9)      | 21.5<br>(3.8)     | 16.8<br>(2.9)         | 17.2<br>(2.1)           | 29.7<br>(3.4)         |
| Percentage point change                                  | +2.4                | +3.0                           | <b>+18.1***</b>    | <b>14.0***</b>        | +6.1               | +8.9              | +2.4                  | +3.6                    | <b>+15.0*</b>         |
| Percentage of youth currently employed                   |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 42.0<br>(3.3)       | 28.2<br>(4.0)                  | 21.4<br>(3.0)      | 40.5<br>(4.0)         | 32.3<br>(3.4)      | 22.0<br>(4.2)     | 9.6<br>(2.7)          | 29.2<br>(4.6)           | 9.2<br>(3.9)          |
| Cohort 2   | 34.1<br>(2.9)       | 31.3<br>(3.2)                  | 14.1<br>(2.2)      | 24.7<br>(2.7)         | 28.2<br>(3.1)      | 16.7<br>(3.2)     | 11.0<br>(2.2)         | 26.7<br>(2.3)           | 10.6<br>(2.0)         |
| Percentage point change                                  | -7.9                | +3.1                           | -7.3               | <b>-15.8**</b>        | -4.1               | -5.3              | +1.4                  | -2.5                    | +1.4                  |
| Percentage currently working more than 16 hours per week |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 61.2<br>(5.2)       | 57.3<br>(8.9)                  | 51.9<br>(8.3)      | 62.7<br>(6.5)         | 53.4<br>(6.7)      | 60.1<br>(9.8)     | 52.2<br>(10.8)        | 61.1<br>(9.9)           | --                    |
| Cohort 2   | 42.7<br>(3.9)       | 39.8<br>(4.7)                  | 27.1<br>(4.9)      | 46.4<br>(4.3)         | 43.0<br>(5.0)      | 39.8<br>(7.6)     | 23.5<br>(5.9)         | 36.4<br>(3.5)           | --                    |
| Percentage point change                                  | <b>-16.9**</b>      | -17.5                          | <b>-24.8*</b>      | <b>-18.3*</b>         | -10.4              | -20.3             | <b>-28.7*</b>         | <b>-24.7*</b>           |                       |

**Exhibit 5-8**  
**CHANGES IN EMPLOYMENT CHARACTERISTICS, BY COHORT AND DISABILITY CATEGORY (Concluded)**

|   | Learning Disability | Speech/<br>Language Impairment | Mental Retardation | Emotional Disturbance | Hearing Impairment | Visual Impairment | Orthopedic Impairment | Other Health Impairment | Multiple Disabilities |
|---|---------------------|--------------------------------|--------------------|-----------------------|--------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Percentage earning more than minimum wage at their current or most recent job |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1  | 44.0<br>(5.3)       | 35.5<br>(8.5)                  | 37.7<br>(8.1)      | 33.7<br>(6.4)         | 32.2<br>(6.5)      | 17.3<br>(8.0)     | 25.2<br>(9.2)         | 27.1<br>(9.0)           | --                    |
| Cohort 2  | 68.1<br>(5.5)       | 72.9<br>(6.0)                  | 58.9<br>(9.1)      | 67.1<br>(6.8)         | 69.6<br>(7.0)      | 54.0<br>(15.0)    | 53.3<br>(10.5)        | 74.8<br>(4.8)           | --                    |
| Percentage point change   | <b>+24.1**</b>      | <b>+37.4***</b>                | +18.8              | <b>+33.4***</b>       | <b>+37.4***</b>    | <b>+45.4*</b>     | <b>+31.5*</b>         | <b>+47.7***</b>         |                       |

Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

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

--Too few to report separately.

**Exhibit 5-9  
CHANGES IN EMPLOYMENT  
CHARACTERISTICS, BY GENDER**

|   | Boys            | Girls          |
|---|-----------------|----------------|
| Percentage who in the past year had:  |                 |                |
| A paid job outside the home   |                 |                |
| Cohort 1  | 54.6<br>(2.7)   | 43.0<br>(3.8)  |
| Cohort 2  | 61.9<br>(2.3)   | 56.7<br>(3.3)  |
| Percentage point change   | <b>+7.3*</b>    | <b>+13.7**</b> |
| A work-study job  |                 |                |
| Cohort 1  | 9.0<br>(1.6)    | 10.6<br>(2.4)  |
| Cohort 2  | 14.8<br>(1.9)   | 16.2<br>(2.7)  |
| Percentage point change   | <b>+5.8*</b>    | +5.6           |
| Percentage of youth currently employed  |                 |                |
| Cohort 1  | 39.4<br>(2.7)   | 29.5<br>(3.5)  |
| Cohort 2  | 30.7<br>(2.3)   | 25.4<br>(3.0)  |
| Percentage point change   | <b>-8.7*</b>    | -4.1           |
| Percentage currently working more than 16 hours per week                          |                 |                |
| Cohort 1  | 61.3<br>(4.5)   | 56.4<br>(7.9)  |
| Cohort 2  | 44.8<br>(3.4)   | 33.3<br>(4.7)  |
| Percentage point change   | <b>-16.2**</b>  | <b>-19.5*</b>  |
| Percentage earning more than the minimum wage in their current or most recent job |                 |                |
| Cohort 1  | 44.4<br>(4.6)   | 32.7<br>(7.5)  |
| Cohort 2  | 72.5<br>(4.8)   | 57.4<br>(7.9)  |
| Percentage point change   | <b>+28.1***</b> | <b>+24.7*</b>  |

Source: NLTS and NLTS2 Wave 1 parent interviews.  
Standard errors are in parentheses.  
Statistically significant difference in a two-tailed test at the following levels: \* p<.05, \*\* p<.01, \*\*\* p<.001.

**Household income.**

Differences in employment were noted for youth who differed in the income levels of their households and in their racial/ethnic backgrounds (Exhibit 5-10). Although youth in all income levels experienced changes in the same direction, the magnitude of changes was different. For example, all categories showed gains in the employment rate in the preceding year; however, only the 13-percentage-point difference for youth in the middle income category was large enough to attain statistical significance. Similarly, reductions in the current employment rate were significant only for youth in the lowest income group, and the reduction in work hours was significant only for youth in the highest income group. Increased wages also were greatest for the middle and highest income groups.

**Race/ethnicity.** Increases in the 1-year employment rate were markedly larger for African American (15 percentage points) and Hispanic youth (17 percentage points), resulting in a narrowing of the gap in employment rates between those groups and white youth. Nonetheless, white youth still were significantly more likely to have been employed in the last year than their African American or Hispanic counterparts (50% and 43%, p<.001). In contrast, white youth were the only group to have a significant increase in wages,

resulting in a widening of the wage gap between white and African American youth over time. White youth also experienced a significant increase in work-study employment and a reduction in work hours that were not shared by other groups.

**Exhibit 5-10**  
**CHANGES IN EMPLOYMENT CHARACTERISTICS, BY INCOME AND RACE/ETHNICITY**

|   | Income        |                |                 | Race/Ethnicity  |                  |                |
|---|---------------|----------------|-----------------|-----------------|------------------|----------------|
|   | Lowest        | Medium         | Highest         | White           | African American | Hispanic       |
| Percentage of youth who in the past year had:                                 |               |                |                 |                 |                  |                |
| A paid job outside the home   |               |                |                 |                 |                  |                |
| Cohort 1  | 38.7<br>(4.3) | 53.4<br>(4.2)  | 61.9<br>(3.6)   | 60.5<br>(2.7)   | 34.4<br>(4.5)    | 26.0<br>(6.9)  |
| Cohort 2  | 47.5<br>(3.3) | 66.6<br>(3.6)  | 69.8<br>(3.5)   | 69.2<br>(2.4)   | 49.6<br>(4.6)    | 43.2<br>(5.1)  |
| Percentage point change   | +8.8          | <b>+13.2*</b>  | +7.9            | <b>+8.7*</b>    | <b>+15.2*</b>    | <b>+17.2*</b>  |
| A work-study job  |               |                |                 |                 |                  |                |
| Cohort 1  | 14.6<br>(3.2) | 5.4<br>(1.9)   | 8.9<br>(2.1)    | 8.1<br>(1.5)    | 13.3<br>(3.2)    | 8.8<br>(4.5)   |
| Cohort 2  | 19.0<br>(2.8) | 13.8<br>(2.7)  | 14.0<br>(2.6)   | 15.3<br>(2.0)   | 18.0<br>(3.7)    | 13.1<br>(3.6)  |
| Percentage point change   | +4.6          | +8.4           | +5.1            | <b>+7.2**</b>   | +4.7             | +4.3           |
| Percentage of youth currently employed  |               |                |                 |                 |                  |                |
| Cohort 1  | 27.7<br>(4.0) | 36.1<br>(4.1)  | 46.9<br>(3.7)   | 44.7<br>(2.7)   | 23.7<br>(4.0)    | 14.0<br>(5.5)  |
| Cohort 2  | 16.5<br>(2.5) | 33.5<br>(3.6)  | 38.3<br>(3.7)   | 36.0<br>(2.5)   | 18.9<br>(3.6)    | 18.2<br>(3.9)  |
| Percentage point change   | <b>-11.2*</b> | -2.6           | -8.6            | -8.7            | -4.8             | +4.2           |
| Percentage currently working more than 16 hours                               |               |                |                 |                 |                  |                |
| Cohort 1  | 59.9<br>(9.2) | 60.0<br>(7.3)  | 58.6<br>(5.8)   | 59.6<br>(4.3)   | 70.0<br>(10.6)   | 52.0<br>(18.2) |
| Cohort 2  | 41.8<br>(5.0) | 43.9<br>(5.2)  | 39.4<br>(4.6)   | 38.8<br>(3.4)   | 46.6<br>(6.9)    | 46.4<br>(8.5)  |
| Percentage point change   | -18.1         | -16.1          | <b>-19.2**</b>  | <b>-20.2***</b> | -23.4            | +5.6           |
| Percentage earning more than minimum wage at their current or most recent job |               |                |                 |                 |                  |                |
| Cohort 1  | 43.4<br>(9.6) | 34.4<br>(7.1)  | 46.3<br>(5.9)   | 41.8<br>(4.3)   | 40.3<br>(11.9)   | 28.1<br>(17.3) |
| Cohort 2  | 54.1<br>(9.0) | 65.9<br>(7.8)  | 74.8<br>(5.7)   | 72.1<br>(4.6)   | 52.4<br>(12.5)   | 58.5<br>(15.2) |
| Percentage point change   | +10.7         | <b>+31.5**</b> | <b>+28.5***</b> | <b>+30.3***</b> | +12.1            | +30.4          |

Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

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

## Independence

Independently engaging in managing one's own money and performing various household chores or responsibilities are measures of growth toward adulthood. Comparisons of the performance of these activities between youth with disabilities in 1987 and 2001 provide one



perspective on how independent youth in the 15- through 17-year-old group have become over this time period.

Parents were asked whether youth had money about which they made their own decisions. They also were asked to rate on a four-point scale, from “never” to “always,” how often youth performed various household chores on their own, including fixing breakfast, straightening up their living areas, doing laundry, and buying items from a store. Combining the scores for the four household activities produced a household responsibilities scale score ranging from 4 (all of them done “never”) to 16 (all of them done “always”).

Exhibit 5-11 shows the changes in independent decision-making about money and the

frequency of performing typical household tasks. Although youth with disabilities became more independent managing money, no significant changes were reported in independent performance of household chores. Youth having money about which they made their own decisions increased significantly, from 76% to 84% ( $p < .01$ ) and may be associated with working more.

| <b>Exhibit 5-11<br/>CHANGES IN THE INDEPENDENCE OF<br/>YOUTH WITH DISABILITIES</b>  |               |               |               |
|---|---------------|---------------|---------------|
|   | Cohort 1      | Cohort 2      | Change        |
| Percentage who had money about which they made their own decisions  | 76.0<br>(2.0) | 84.2<br>(2.0) | <b>+8.2**</b> |
| Percentage whose household responsibilities scale score (range = 4 to 16) was:  |               |               |               |
| Low (4 to 8)  | 27.6<br>(2.1) | 32.2<br>(1.8) | +4.6          |
| Medium (9 to 14)  | 64.3<br>(2.2) | 59.1<br>(1.9) | -5.2          |
| High (15 or 16)   | 8.1<br>(1.3)  | 8.5<br>(.8)   | +4            |
| Average household responsibilities scale score  | 10.3<br>(.1)  | 10.1<br>(.1)  | -.2           |
| Source: NLTS and NLTS2 Wave 1 parent interviews.<br>Standard errors are in parentheses.<br>Statistically significant difference in a two-tailed test at the following level: ** $p < .01$ . |               |               |               |

### **Disability Differences in Changes in Independence**

The percentage of youth having money about which they made decisions increased significantly from 1987 to 2001 for youth with mental retardation, other health impairments, or multiple disabilities (Exhibit 5-12). The percentage of youth with mental retardation or other health impairments who handled money independently increased from about

62% to 79% and 84%, respectively ( $p < .001$ ), bringing them up to the percentage of most other disability groups. Money management among youth with multiple disabilities also increased, from fewer than half to 65% having money about which they made decisions ( $p < .05$ ). These changes markedly reduced the differences between categories, from a range of 34 percentage points (48% to 82%) for cohort 1 to 23 percentage points (65% to 88%) for cohort 2.

**Exhibit 5-12**  
**CHANGES IN INDEPENDENCE OF YOUTH WITH DISABILITIES, BY DISABILITY CATEGORY**

|  | Learning Disability | Speech/<br>Language Impairment | Mental Retardation | Emotional Disturbance | Hearing Impairment | Visual Impairment | Orthopedic Impairment | Other Health Impairment | Multiple Disabilities |
|--|---------------------|--------------------------------|--------------------|-----------------------|--------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Percentage with money about which they made decisions      |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 80.1<br>(2.8)       | 75.9<br>(3.9)                  | 63.0<br>(3.7)      | 78.7<br>(3.5)         | 81.7<br>(2.8)      | 77.0<br>(4.3)     | 70.9<br>(4.3)         | 62.2<br>(5.0)           | 48.1<br>(6.7)         |
| Cohort 2   | 86.2<br>(2.1)       | 83.0<br>(2.6)                  | 79.2<br>(2.6)      | 83.5<br>(2.3)         | 87.8<br>(2.2)      | 79.1<br>(3.5)     | 77.5<br>(2.9)         | 84.0<br>(1.9)           | 65.3<br>(3.1)         |
| Percentage point change                                    | +6.1                | +7.1                           | <b>+16.2***</b>    | +4.8                  | +6.1               | +2.1              | +6.6                  | <b>+21.8***</b>         | <b>+17.2*</b>         |
| Percentage with household responsibilities scale score of: |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Low  |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 22.8<br>(3.0)       | 22.2<br>(3.8)                  | 39.4<br>(3.8)      | 31.0<br>(4.0)         | 19.2<br>(3.0)      | 33.4<br>(4.9)     | 53.4<br>(4.8)         | 31.1<br>(4.8)           | 72.4<br>(6.6)         |
| Cohort 2   | 26.9<br>(2.7)       | 29.3<br>(3.0)                  | 43.3<br>(3.0)      | 36.5<br>(2.9)         | 24.6<br>(2.9)      | 39.0<br>(4.2)     | 62.5<br>(3.3)         | 42.2<br>(2.5)           | 60.4<br>(3.1)         |
| Percentage point change                                    | +4.1                | +7.1                           | +3.9               | +5.5                  | +5.4               | +5.6              | +9.1                  | <b>+11.1*</b>           | -12.0                 |
| High   |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 8.9<br>(2.0)        | 11.9<br>(3.0)                  | 6.3<br>(1.9)       | 6.2<br>(2.1)          | 8.1<br>(2.1)       | 5.5<br>(2.4)      | 6.1<br>(2.3)          | 7.6<br>(2.8)            | 1.0<br>(1.5)          |
| Cohort 2   | 9.1<br>(1.7)        | 6.8<br>(1.7)                   | 9.5<br>(1.8)       | 7.9<br>(1.6)          | 10.8<br>(2.1)      | 4.8<br>(1.8)      | 5.0<br>(1.5)          | 3.8<br>(.9)             | 3.1<br>(1.1)          |
| Percentage point change                                    | +2                  | -5.1                           | +3.2               | +1.7                  | +2.7               | -.7               | -1.1                  | -3.8                    | +2.1                  |
| Average household responsibilities scale score             |                     |                                |                    |                       |                    |                   |                       |                         |                       |
| Cohort 1   | 10.6<br>(.2)        | 10.7<br>(.3)                   | 9.6<br>(.2)        | 9.9<br>(.2)           | 10.9<br>(.2)       | 10.0<br>(.3)      | 8.6<br>(.3)           | 10.1<br>(.3)            | 7.1<br>(.4)           |
| Cohort 2   | 10.4<br>(.2)        | 10.2<br>(.2)                   | 9.5<br>(.2)        | 9.9<br>(.2)           | 10.8<br>(.2)       | 9.5<br>(.3)       | 7.9<br>(.2)           | 9.4<br>(.1)             | 7.9<br>(.2)           |
| Change in scale score                                      | -2                  | -5                             | -.1                | 0                     | -.1                | -.5               | -.7                   | <b>-.7*</b>             | +8                    |

Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

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

Although there was a slight increase in the percentage of youth performing in the low range on household chores between 1987 and 2001, this increase was significant only for youth with other health impairments (11 percentage points,  $p < .05$ ) resulting in a decrease in the average score of almost one point ( $p < .05$ ).

### Demographic Differences in Changes in Independence

| <b>Exhibit 5-13<br/>CHANGES IN INDEPENDENCE,<br/>BY GENDER</b> |               |                |
|--|---------------|----------------|
|  | Boys          | Girls          |
| Percentage with money about which they made decisions          |               |                |
| Cohort 1   | 78.2<br>(2.3) | 71.1<br>(3.6)  |
| Cohort 2   | 83.8<br>(1.8) | 85.0<br>(2.4)  |
| Percentage point change  | +5.6          | <b>+13.9**</b> |
| Percentage with household responsibility scale score of:       |               |                |
| Low  |               |                |
| Cohort 1   | 31.1<br>(2.6) | 19.9<br>(3.2)  |
| Cohort 2   | 35.8<br>(2.3) | 24.9<br>(2.9)  |
| Change in scale score  | +4.7          | +5.0           |
| High   |               |                |
| Cohort 1   | 6.3<br>(1.4)  | 12.1<br>(2.6)  |
| Cohort 2   | 6.0<br>(1.1)  | 13.6<br>(2.3)  |
| Change in scale score  | -.3           | +1.5           |
| Average household responsibility scale score                   |               |                |
| Cohort 1   | 10.0<br>(.2)  | 11.0<br>(.2)   |
| Cohort 2   | 9.8<br>(.1)   | 10.8<br>(.2)   |
| Change in scale score  | -.2           | -.2            |

Source: NLTS and NLTS2 Wave 1 parent interviews.  
Standard errors are in parentheses.  
Statistically significant difference in a two-tailed test at the following levels: \*\*  $p < .01$ .

**Gender.** Girls showed significant gains in having money about which they made decisions (Exhibit 5-13); 71% of girls in cohort 1 were managing money, compared with 85% in cohort 2 ( $p < .01$ ).

**Household income.** Changes in independence were found for youth who differed in the income levels of their households and their racial/ethnic backgrounds (Exhibit 5-14). Only youth in the highest income group experienced significant changes. This group experienced an 8 percentage point gain, to 92% ( $p < .05$ ) of youth having money about which they made decisions. Their average household responsibility scale score also dropped significantly (.6 points,  $p < .05$ ), with the loss coming from those with higher scores (5 percentage points,  $p < .05$ ).

**Race/ethnicity.** Significantly greater independence with money was experienced by white (8 percentage points,  $p < .01$ ) and African American youth (13 percentage points,  $p < .05$ ). More than 85% of African American and white youth made decisions about money.

**Exhibit 5-14**  
**CHANGES IN YOUTH'S INDEPENDENCE, BY INCOME AND RACE/ETHNICITY**

|  | Income        |               |               | Race/Ethnicity |                  |               |
|--|---------------|---------------|---------------|----------------|------------------|---------------|
|  | Low           | Medium        | High          | White          | African American | Hispanic      |
| Percentage with money about which they made decisions    |               |               |               |                |                  |               |
| Cohort 1   | 71.6<br>(4.2) | 76.5<br>(3.7) | 82.8<br>(2.8) | 79.9<br>(2.3)  | 72.4<br>(4.3)    | 56.2<br>(7.9) |
| Cohort 2   | 77.2<br>(2.8) | 83.7<br>(2.8) | 91.6<br>(2.1) | 88.3<br>(1.7)  | 85.4<br>(3.2)    | 69.8<br>(4.6) |
| Percentage point change                                  | +5.4          | +7.2          | <b>+8.8*</b>  | <b>+8.4**</b>  | <b>+13.0*</b>    | +13.6         |
| Percentage with household responsibility scale score of: |               |               |               |                |                  |               |
| Low  |               |               |               |                |                  |               |
| Cohort 1   | 32.6<br>(4.4) | 26.5<br>(3.9) | 22.8<br>(3.2) | 30.1<br>(2.6)  | 23.1<br>(4.2)    | 23.4<br>(7.1) |
| Cohort 2   | 37.1<br>(3.2) | 30.5<br>(3.5) | 29.2<br>(3.4) | 32.7<br>(2.3)  | 26.8<br>(3.8)    | 40.2<br>(5.4) |
| Change in scale score                                    | +4.5          | +4.0          | +6.2          | +2.6           | +3.7             | +16.8         |
| High   |               |               |               |                |                  |               |
| Cohort 1   | 10.5<br>(2.9) | 6.1<br>(2.1)  | 6.9<br>(1.9)  | 6.2<br>(1.4)   | 15.4<br>(3.6)    | 2.0<br>(2.4)  |
| Cohort 2   | 6.7<br>(1.6)  | 10.2<br>(2.3) | 8.2<br>(2.0)  | 6.9<br>(1.3)   | 12.1<br>(2.8)    | 9.4<br>(3.2)  |
| Change in scale score                                    | -3.8          | +4.1          | +1.3          | +7             | -3.3             | +7.4          |
| Average household responsibility scale score             |               |               |               |                |                  |               |
| Cohort 1   | 10.2<br>(.3)  | 10.3<br>(.2)  | 10.4<br>(.2)  | 10.0<br>(.2)   | 10.9<br>(.3)     | 10.6<br>(.5)  |
| Cohort 2   | 9.8<br>(.2)   | 10.2<br>(.2)  | 10.2<br>(.2)  | 10.0<br>(.1)   | 10.5<br>(.3)     | 9.9<br>(.3)   |
| Change in scale score                                    | -.4           | -.1           | -.2           | 0              | -.4              | -.7           |

Source: NLTS and NLTS2 Wave 1 parent interviews.

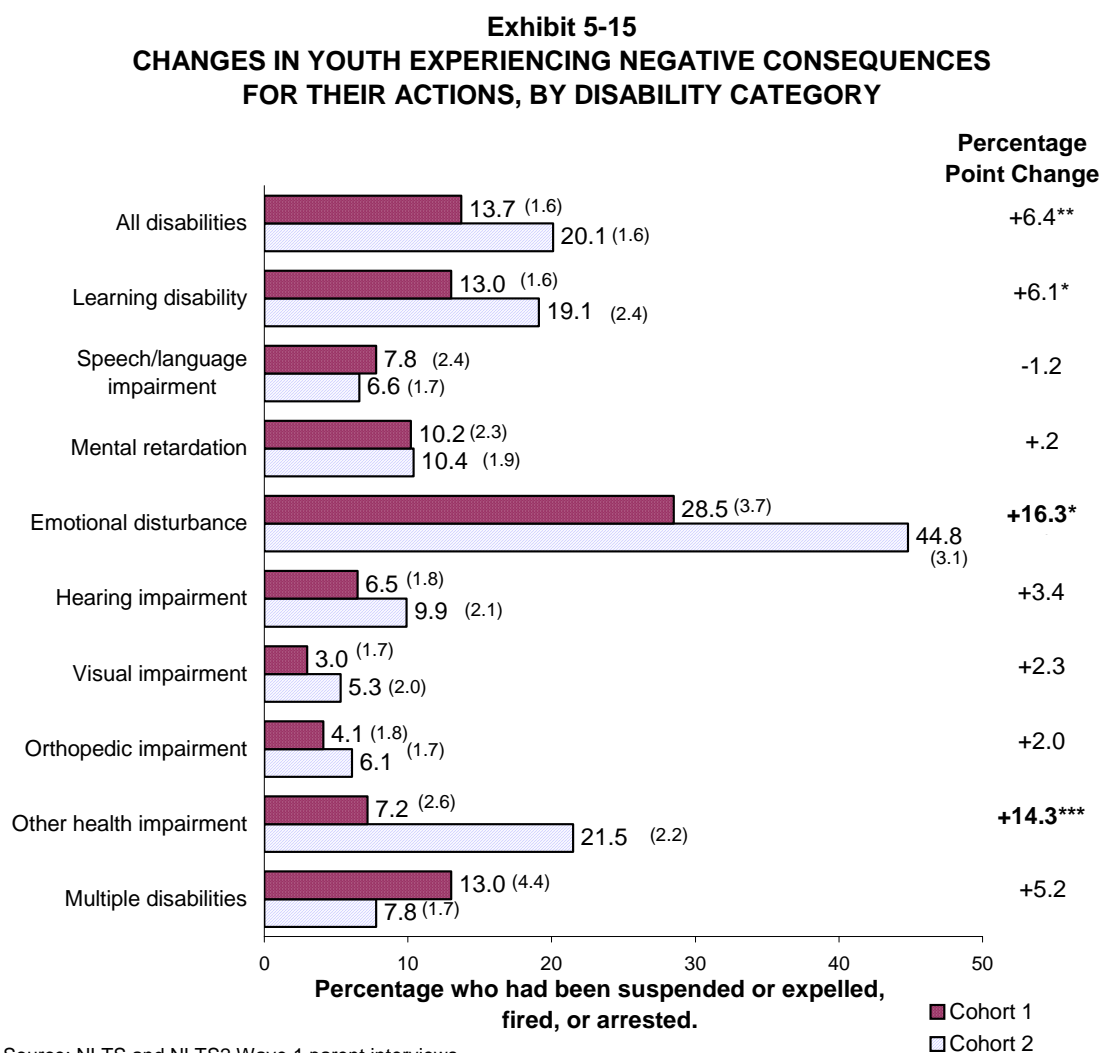
Standard errors are in parentheses.

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

## Social Adjustment

In their adolescent years, many youth, both with and without disabilities, engage in behaviors designed to exhibit their independence and test the limits of adult authority. Although many youth engage in problem behaviors without serious negative consequences, the behavior of some youth goes so far as to violate social norms and cause serious negative consequences for them. Four such consequences were assessed in NLTS and NLTS2—the extent to which youth ever had been suspended or expelled from school, fired from a job, or arrested.<sup>2</sup>

The rate at which youth with disabilities had experienced any of these negative consequences increased significantly (Exhibit 5-15). Whereas in 1987, 14% of youth with disabilities had



Source: NLTS and NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

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

<sup>2</sup> The data archiving process of NLTS incorporated the constructed dichotomous variable indicating whether youth had ever experienced expulsion, suspension, arrest, or being fired from a job. The individual variables that make up that construct were not archived. Thus, the cohorts cannot be compared in regard to individual consequences, only in regard to whether they had experienced any one or more that one of them.

experienced one or more of the negative consequences considered in NLTS, 20% of youth in 2001 had had such experiences ( $p < .01$ ). The increase in experiencing negative consequences was concentrated particularly among youth with emotional disturbances and other health impairments, among whom the rates of increase were 16 and 14 percentage points, respectively ( $p < .01$  and  $.001$ ). However, even though their rates of increase were similar, the extent to which youth with emotional disturbances experienced negative consequences was significantly higher at both times than for youth with other health impairments or those in any other disability category.

Increases in rates of experiencing negative consequences occurred similarly for boys and girls with disabilities, about 6 percentage points (Exhibit 5-16), which left boys with a higher rate of such experiences in 2001 than girls (23% vs. 14%,  $p < .01$ ). The largest increases occurred among youth in the upper income group and among white youth, 9 and 8 percentage points, respectively ( $p < .05$  and  $.01$ ). Rates of experiencing negative consequences were quite similar

across income and racial/ethnic groups in 2001.

**Exhibit 5-16**  
**CHANGES IN YOUTH EXPERIENCING NEGATIVE CONSEQUENCES FOR THEIR BEHAVIOR, BY DEMOGRAPHIC CHARACTERISTICS**

|   | Cohort 1      | Cohort 2      | Percentage Point Change |
|---|---------------|---------------|-------------------------|
| Youth who were:                         |               |               |                         |
| Male                                    | 16.2<br>(2.0) | 22.9<br>(2.1) | <b>+6.7*</b>            |
| Female                                  | 8.1<br>(2.1)  | 14.5<br>(2.4) | <b>+6.4*</b>            |
| Youth whose household income group was: |               |               |                         |
| Lowest                                  | 13.2<br>(3.1) | 19.6<br>(2.6) | +6.4                    |
| Medium                                  | 16.0<br>(3.1) | 21.8<br>(3.2) | +5.8                    |
| Highest                                 | 11.3<br>(2.3) | 20.2<br>(3.0) | <b>+8.9*</b>            |
| Youth who were:                         |               |               |                         |
| White                                   | 12.5<br>(1.8) | 20.4<br>(2.1) | <b>+7.9**</b>           |
| African American                        | 15.0<br>(3.4) | 17.3<br>(3.5) | +2.3                    |
| Hispanic                                | 15.9<br>(5.9) | 19.4<br>(4.0) | +3.5                    |

Source: NLTS and NLTS2 Wave 1 parent interviews.  
Standard errors are in parentheses.  
Statistically significant difference in a two-tailed test at the following levels: \*  $p < .05$ , \*\*  $p < .01$ .

### Summary

Examining changes in a range of outcomes for youth with disabilities from 1987 to 2001 does not yield a consistent or unequivocal “good news” or “bad news” story. The mix of changes shows progress on some dimensions or for some groups, yet little change or even change in an undesirable direction for some measures of achievements.

On the academic front, the 1-year dropout rate for youth with disabilities was cut in half over this period, with the rate in 2001 for youth with disabilities being significantly lower than the rate in the general population. However, only youth with mental retardation experienced a significant decline.

Extracurricular activity in general did not increase between the two cohorts of youth with disabilities, but increases were evident for some kinds of activities. Most notable were increases in volunteer or community service activities, which more than doubled over time. However, rates of extracurricular activity for youth with disabilities remained below that of the general population.

A mix of changes also was evident regarding youth employment. The 1-year paid employment rate increased, with significantly more youth holding paid jobs in the previous year in 2001 than 1987. This increase brought the overall 1-year employment rate for youth with disabilities (60%) in line with that of the general population of youth (63%). It is unknown how much of this increase resulted from different economic conditions in the two periods, a greater interest in or preparation for employment on the part of youth, or other factors.

Employment experiences also changed for many youth with disabilities, with an increase in work study jobs, a decline in the average number of hours worked per week, and significant improvements in pay. In 2001, two-thirds of youth with disabilities were earning more than the minimum wage, half again as many as had done so in 1987. However, a decline in the rate of current employment suggests that youth also had more sporadic work experiences, rather than continuous employment.

Two measures of the independence of youth showed changes in opposite directions, with more youth with disabilities having money about which to make decisions and slightly more youth scoring in the low range on responsibility for the set of household chores examined in NLTS2. Both findings are consistent with the increase in employment, which could yield income for working youth to manage and reduce time available for household activities. Increases in participation in activities such as community service also could leave less time for household chores. Alternatively, changes in the social context, such as an increase in the workforce participation of mothers, could have contributed to changes in chores youth with disabilities were held accountable for at home.

There is cause for concern in the finding that the rate at which youth with disabilities experienced the negative consequences of suspension or expulsion from school, being fired from a job, or arrested increased over time. By 2001, one in five youth with disabilities had experienced one or more of these consequences of their behavior, up 6 percentage points from 1987.

But as is always true, given the important differences within the population of youth with disabilities, these changes in outcomes did not affect all youth equally, and most categories of youth experienced changes that were inconsistent in direction. For example, youth with other health impairments had a sizable increase in their overall level of extracurricular group participation and volunteerism, increases in employment and pay, and increases in their responsibility for managing money of their own—all of which bode well for their future. Yet they, along with youth with emotional disturbances, had sizable increases in the rate at which they experienced negative consequences for their behavior.

Similarly, youth with mental retardation had the only significant decrease in the dropout rate, and the largest rate of increase in holding a work study job, yet they were the only disability category not to experience a significant increase in earning more than the minimum wage. Youth with visual impairments were the only group to experience a significant decline in their overall rate of participation in extracurricular activities and were among the few groups to show no increase in the work-study or 1-year or current paid employment rates. Yet youth with visual impairments who were working had large gains in earnings.

Other group differences were apparent as well. Girls with disabilities experienced much larger increases in participation in some kinds of extracurricular activities than boys, particularly community groups and leadership or student government organizations. With greater change over time, the participation of girls in these activities in 2001 significantly exceeded that of boys.

Girls also had larger increases in employment than boys, and the gap in employment rates between the genders that favored boys in 1987 had been closed for the most part by 2001. A larger increase in employment among girls was mirrored in a larger increase in having money about which to make their own decisions. Yet, despite significant increases in the proportion of girls with disabilities who earned more than the minimum wage, boys still were more likely than girls to meet or exceed the minimum wage.

Improvements in employment outcomes over time were least apparent for lower-income youth with disabilities. They experienced no significant gains in 1-year or work study employment rates, nor did they share in the large gains in pay that were evident for other income groups. In addition, they had the largest decline in current employment rates. Upper income youth showed negative changes in other areas. Specifically, between 1987 and 2001 the percentage of upper-income youth who had been suspended or expelled from school, fired from a job, or arrested increased from 11% to 20%.

Youth with different racial/ethnic backgrounds also experienced different kinds of changes in outcomes. Although all groups experienced gains in 1-year employment rates, white youth had the only significant increase in pay and the only significant decline in the dropout rate. On the negative side, white youth accounted for virtually all of the gain in the percentage of youth that had experienced negative consequences for their behavior.

This chapter presents the first analysis of changes in outcomes of youth with disabilities between 1987 and 2001, at which time virtually all of the youth were in school. Future research will focus on changes in other outcomes of in-school youth, as well as youth's outcomes during the early post-high-school years.