
**August 2004**

# Wave 1 Wave 2 Overview

**Prepared for:**

Dr. Lisa Holden-Pitt
Office of Special Education Programs
U.S. Department of Education

SRI Project P10656

SEELS has been funded with federal funds from the U.S. Department of Education, Office of Special Education Programs, under contract number ED-00-CO-0017. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.


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Dr. Lisa Holden-Pitt
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**Prepared by:**

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## ACKNOWLEDGMENTS

The comprehensiveness and scale of the Special Education Elementary Longitudinal Study (SEELS) makes it a daunting undertaking that is made possible only by the contributions of a large team. The authors' sincere thanks go to:

- Lisa Holden-Pitt, Judy Holt and Lou Danielson of the Office of Special Education Programs, U. S. Department of Education for their leadership and guidance in helping make SEELS and the OSEP longitudinal studies program such a valuable asset to our field.
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But none of the contributions made by the SEELS team would be meaningful without the generosity of the more than 9,000 students with disabilities whose stories we tell. Our hats are off to them and to their parents and guardians and to the educators who serve them for their time, openness, and insights.

## CONTENTS

## EXHIBITS

# 1. As Time Goes By: Short-term Changes in the Experiences of Elementary and Middle School Students with Disabilities *By Jose Blackorby and Mary Wagner*

Rapid change has become a fact of life in American society. Technological developments have created a continuous evolution in such aspects of our lives as communication, recreation and entertainment, access to information, and requirements for job skills. Economic fluctuations in recent years also have caused changes in the employment status of many adults and, consequently, in the financial well-being of their households. Dramatic events, such as the terrorist attacks of September 11, 2001, can change the social and political landscape almost overnight, changes that are felt by individuals in many ways.

In addition to changes resulting from factors such as these, school-age children experience changes that do not affect adults. For example, the far-reaching education reforms embodied in the No Child Left Behind Act of 2001 (NCLB) have changed many students' school experiences. For example, an increased emphasis on accountability for improving students' educational performance has led some schools to change instructional priorities and activities to focus more directly on content and skills required for success on standardized tests. The expectation in the law that students with disabilities will participate in standardized testing to the maximum extent possible may lead to some students' taking part in such tests for the first time.

Beyond these changes in their school environments, the growth and development that children experience with each passing year creates changes that can affect children physically, emotionally, and cognitively, with repercussions in all aspects of their lives, particularly in such volatile periods as early adolescence.

Since 2002, a series of reports[1] have documented the characteristics, experiences, and outcomes of elementary and middle school students with disabilities by using data from the first wave of data collection for the Special Education Elementary Longitudinal Study (SEELS), which is sponsored by the Office of Special Education Programs of the U.S. Department of Education and is being conducted by SRI International (SRI). SEELS includes a sample of more than 11,000 students who were ages 6 through 12 and receiving special education in the first or higher grades on September 1, 1999. When their parents were first interviewed in the summer of 2000, students were ages 6 through 13.

[1] These reports include Wagner, Marder, et al., 2002; Wagner & Blackorby, 2002; Blackorby, Wagner, Cadwallader, et al., 2002; Wagner, Cadwallader, et al., 2002; Blackorby, Wagner, Cameto, Marder, et al., 2004; Blackorby, Wagner, Cameto, Davies, et al., 2004). Reports can be found at www.seels.net.

Information about them was first obtained from staff in the schools they attended in the spring of the 2000-01 school years, when students were ages 7 through 14 and in first through ninth grades or in ungraded programs. Also that year, direct assessments of students' reading and mathematics abilities and in-person interviews were conducted with SEELS students.[2]

The second wave of data collection for SEELS was conducted in the spring of the 2001-02 school year, when parents were interviewed again, surveys were conducted again with school staff, and students participated in assessments and in-person interviews for the second time. Students were ages 8 through 15 in Wave 2.

The time period between Waves 1 and 2 (2 years in the case of parent interviews and 1 year for school surveys and direct assessments) provides an opportunity to examine short-term changes in many aspects of the lives of students with disabilities that first were described in Wave 1. This report describes these changes over time by comparing information reported in Wave 2 with the "baseline" information reported in Wave 1 for students for whom information is available for both waves. The report addresses the following questions:

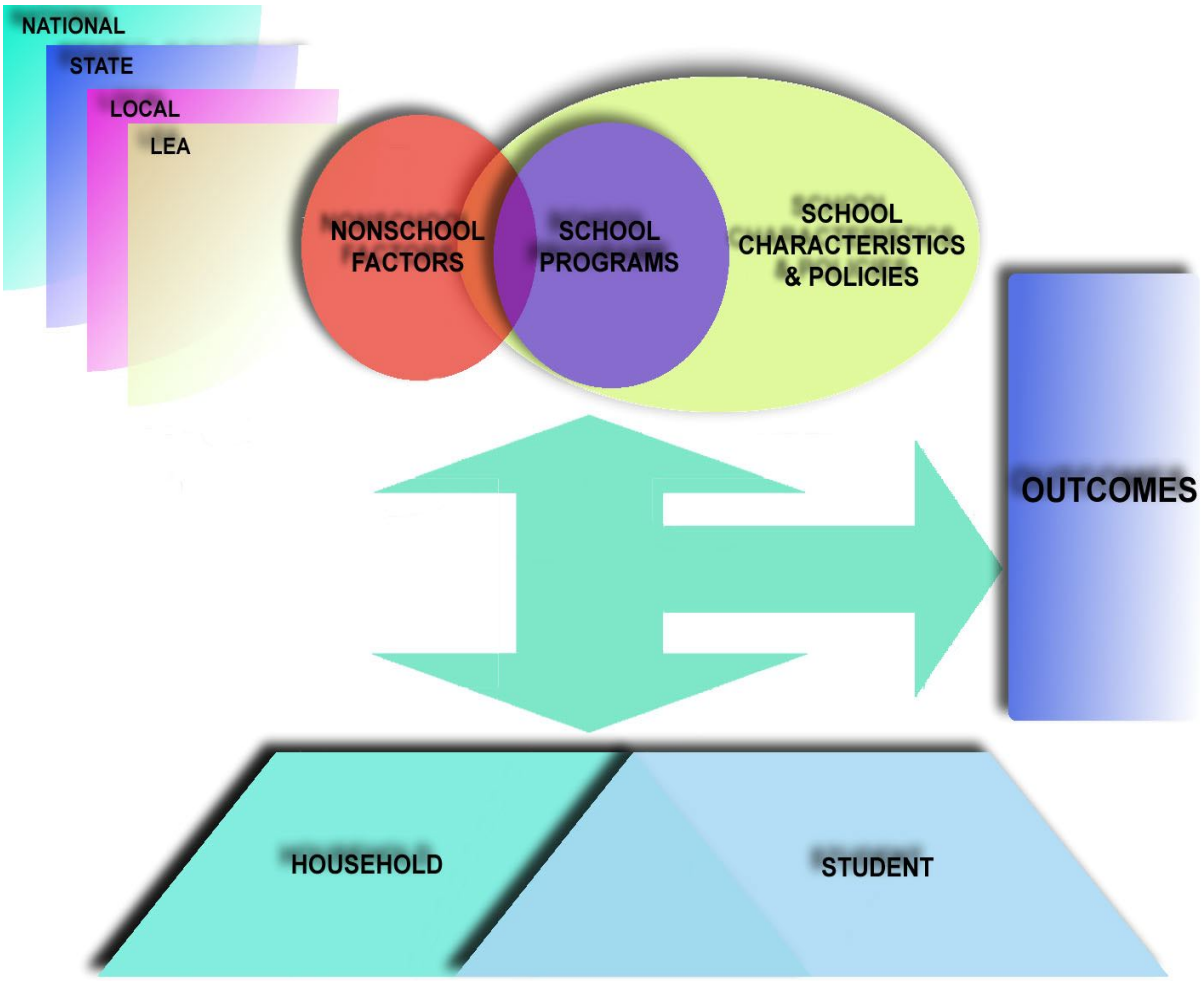
- In what ways have students with disabilities and their family contexts, their experiences in and out of school, and their outcomes on multiple dimensions changed over a 1- or 2-year period?
- To what extent have changes been experienced differently for students with disabilities who differ in their primary disability category, age, and other demographic characteristics?

These questions are applied to the several of the domains of students and their experiences featured in the SEELS conceptual framework (Exhibit 1-1):

- Individual and household characteristics (Chapter 2)
- Social and extracurricular activities (Chapter 3)
- Family support for education at home (Chapter 4)
- School enrollment, services, and supports (Chapter 5)
- An overview of students' school programs (Chapter 6)
- Parents' perceptions of schools and programs (Chapter 7)
- School engagement an academic performance (Chapter 8).

[2] If assessors determined from a teacher that a particular student was not able to participate in the direct assessment, even with accommodations usually provided to the student in the classroom, an alternate assessment was completed by the teacher; no student interview was conducted.

**Exhibit 1-1**
**SEELS Conceptual Framework**




## Technical Notes

An effort has been made to present the wealth of information in this report in an accessible format. Readers of the report should keep the following in mind.

- **Results are weighted.** All the descriptive statistics presented in this report are weighted estimates of the national population of students receiving special education in the SEELS age range, as well as of each disability category individually.
- **Standard errors.** Means and percentages are accompanied by a standard error (presented in parentheses) which describes the precision of the estimate. For example, a weighted estimated value of 50% and a standard error of 2 for a variable means that the value for the total population, if it had been

measured, would lie between 48% and 52% (plus or minus 2 percentage points of 50%), with a 95% confidence level. In general, estimates based on small samples have larger standard errors and should be viewed cautiously. Standard errors in this report are shown in data tables; those for charts can be found in Appendix B.

- **Cross tabulation variables.** This descriptive look short-term changes in students' experiences examines those changes as they vary for students who differ in their primary disability category, gender, race/ethnicity, family income, and grade level. However, exhibits include these cross tabulations only when statistically significant differences are evident and only statistically significant changes or differences across categories are noted in the text.

# 2. Changes in the Characteristics of Students with Disabilities and Their Households *By Mary Wagner*

This chapter revisits two aspects of the experiences of students with disabilities to identify the ways in which they have changed over the 2-year period between Wave 1 and 2 of SEELS. *The Children We Serve* (Wagner, Marder, Blackorby, et al., 2002) describes the individual and household characteristics of elementary and middle school students with disabilities, as reported by parents in 2000. Two years could bring changes to the households of those students in many ways. For example, divorce could result in changes in children's living arrangements and loss of jobs resulting from the financial downturn of the early years of this century could cause declines in the financial status of students' households.

*Behind the Label: The Functional Implications of Disability* (Blackorby, Wagner, et al., 2002) describes the functioning of elementary and middle school students with disabilities in multiple domains, as parents reported that functioning in 2000. To the extent that children's disabilities involve degenerative conditions, one could expect some aspects of functioning to decline over time for some children. On the other hand, limitations in functioning that are due to delays in development could be expected to improve over time.

The following sections describe changes in a 2-year period in the household circumstances of students with disabilities and in aspects of their functioning. Findings are reported for students with disabilities as a whole and for students who differ in their primary disability category, age, and selected demographic characteristics when significant.

## Household Characteristics

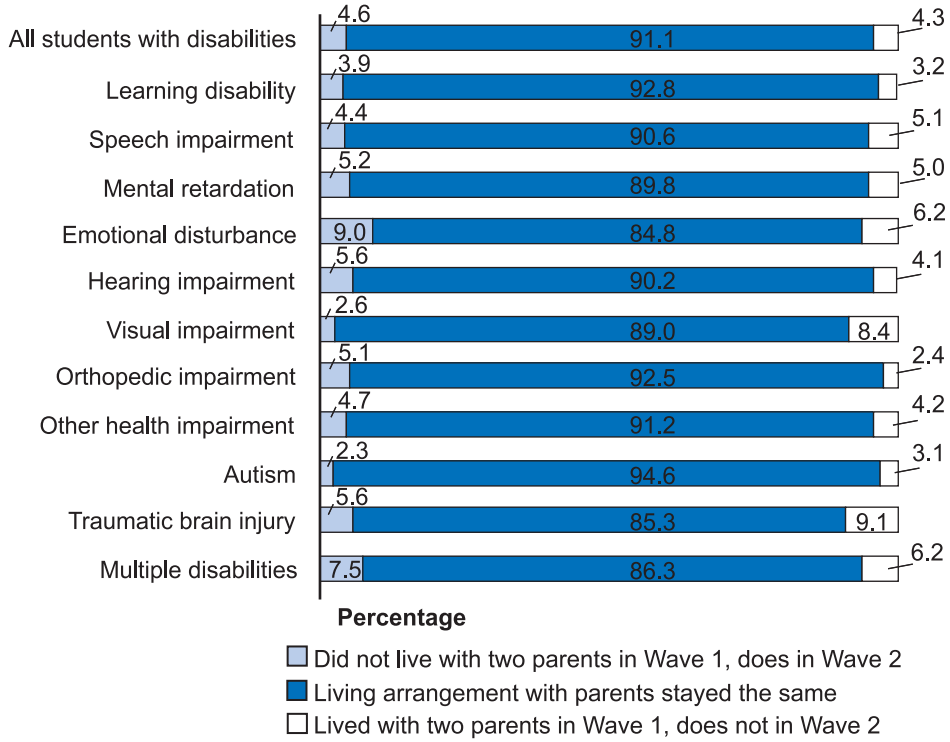
Although the American family has undergone significant change in recent decades, it is unclear how much and how rapidly changes occur in such important aspects of the family lives of students with disabilities as their living situations, the marital status of their parents, and the economic circumstances of their households. The extent to which these aspects of the households of students with disabilities have changed in 2 years is described below.

### Students' Living Situations

The living situations of students with disabilities as a group have changed little over a 2-year period. In both Waves 1 and 2, nearly all students with disabilities had lived full time in the previous year with a parent (98% and 97% in the two waves), usually both parents (69% and 70%).

However, this apparent stability in living arrangements obscures the fact that about 1 in 10 students with disabilities have experienced changes in their living arrangements with parents (Exhibit 2-1).

**Exhibit 2-1**
**Change in Children's Living with Two Parents, by Disability Category**




Source: SEELS parent interviews, Waves 1 and 2.

- Although 91% of students with disabilities have had stable living arrangements with parents, 5% of them who did not live with two parents in Wave 1 do in Wave 2. This change could result from single parents marrying (with children acquiring a step parent); from children returning to their parents' households from foster care, kinship care, or institutional arrangements; or perhaps other factors.
- Four percent of students with disabilities who were living with two parents in Wave 1 no longer do in Wave 2.
- Living arrangements with parents have been the most stable among students with autism; 95% of whom lived with two parents in both Waves 1 and 2. The also have among the highest rates of living with two parents of any disability category; 76% live with two parents in Wave 2.
- Considerably less stability in living arrangements with parents is noted for students with emotional disturbances or traumatic brain injuries, 15% of

whom have had changes in living arrangements with parents over 2 years. They also are the least likely to be living with two parents in Wave 2 (50% and 54%, respectively).

### Parents' Marital Status

Changes in the marital status of students' parents mirror those regarding children's living arrangements with parents, suggesting that changes in marital status account for much of the change in children's living arrangements. There has been little change in parents' marital status in the aggregate; 70% and 67% of students with disabilities were living with married parents in 2000 and 2002, respectively. However, aggregate marriage rates mask change in the marital status of individual students' parents.

- Five percent of students with disabilities have parents who were single, separated, divorced, or widowed in Wave 1 and are married or in marriage-like relationships in Wave 2.
- Six percent of students with disabilities have parents who had a spouse or partner in Wave 1 but are divorced, separated, or widowed in Wave 2.
- The greatest stability in parents' marital status occurs among students with autism (95% have experienced no change in their parents' marital status), and the greatest instability among students with emotional disturbances or traumatic brain injuries (15% have experienced changes in their parents' marital status), as was true regarding changes in living arrangements with parents.

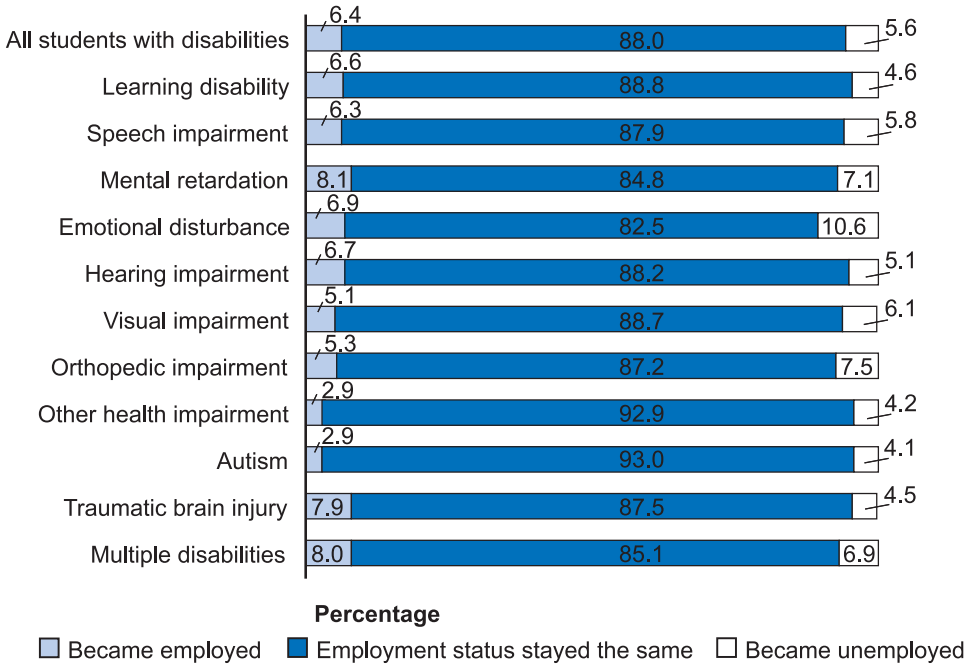
### Employment Status of Heads of Household

Although the American economy has been in considerable turmoil in the early years of the 21st century, the employment status of adult family members of students with disabilities has been fairly stable; the heads of households of about 7 in 10 students with disabilities were employed when interviewed in both 2000 and 2002.[1] But again, aggregate employment rates do not reveal the some fluctuation in employment status within individual families.

- Overall, the employment status of the heads of household of 12% of students with disabilities has changed, with 6% becoming employed and a similar percentage becoming unemployed (Exhibit 2-2). In Wave 2, 85% of students with disabilities have heads of households who are employed.

[1] Readers should be aware that parents being employed at both interview times does not imply that they were steadily employed for the 2-year period between interviews.

**Exhibit 2-2**
**Changes in the Employment Status of Heads of Household, by Disability Category**



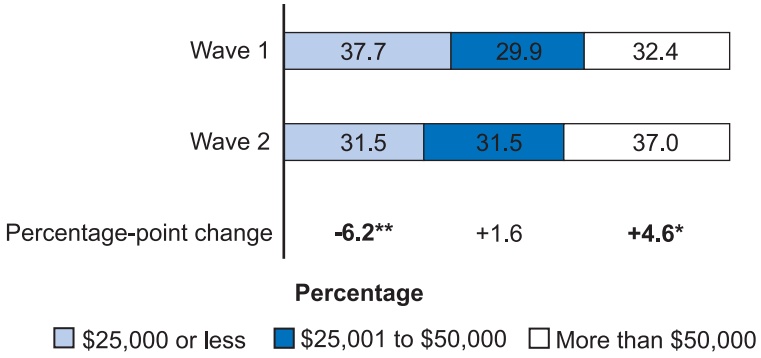

Source: SEELS parent interviews, Waves 1 and 2.

- Employment status has been the most stable among heads of household of students with other health impairments or autism, 93% of who have parents whose employment status has not changed, and 87% of whom are employed in Wave 2.
- As is true of their living arrangements and the marital status of their parents, students with emotional disturbances have experienced the greatest instability in the employment status of the heads of their households. Eleven percent has parents who have become unemployed, whereas 7% have parents who were unemployed in Wave 1 but have become employed. In Wave 2, 74% of students with emotional disturbances have heads of households of students who are employed, an employment rate that is shared with students with mental retardation and is the lowest rate of the disability categories.

## Household Income

As noted above, newly unemployed parents are at least as common among students with disabilities as newly employed parents; nonetheless, inflation or other factors have resulted in increased incomes for some families (Exhibit 2-3).

**Exhibit 2-3**
**Changes in the Household Incomes of Students with Disabilities**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; ** p < .01.

- There has been a decline of 6 percentage points in the proportion of students with disabilities whose households are in the lowest income group and a corresponding increase of 4 percentage points in the proportion in the highest income group. In Wave 2, 32% of students with disabilities are in household earning $25,000 or less, and 37% in households earning more than $50,000.
- These changes are not sufficient to cause a meaningful decline in the percentage of students with disabilities who live in poverty; 21% are living in poverty in Wave 2,[2] a significantly higher rate than among children in the general population (16%, U. S. Department of Commerce, 2002).
- These relatively modest shifts in aggregate household incomes fail to reveal considerably greater change on the part of individual households (Exhibit 2-4).

[2] Please see Appendix A for a description of the calculation of poverty status, using federal poverty thresholds, household income, and household size.

**Exhibit 2-4**
**Changes in Household Incomes of Students with Disabilities, by Income Level**

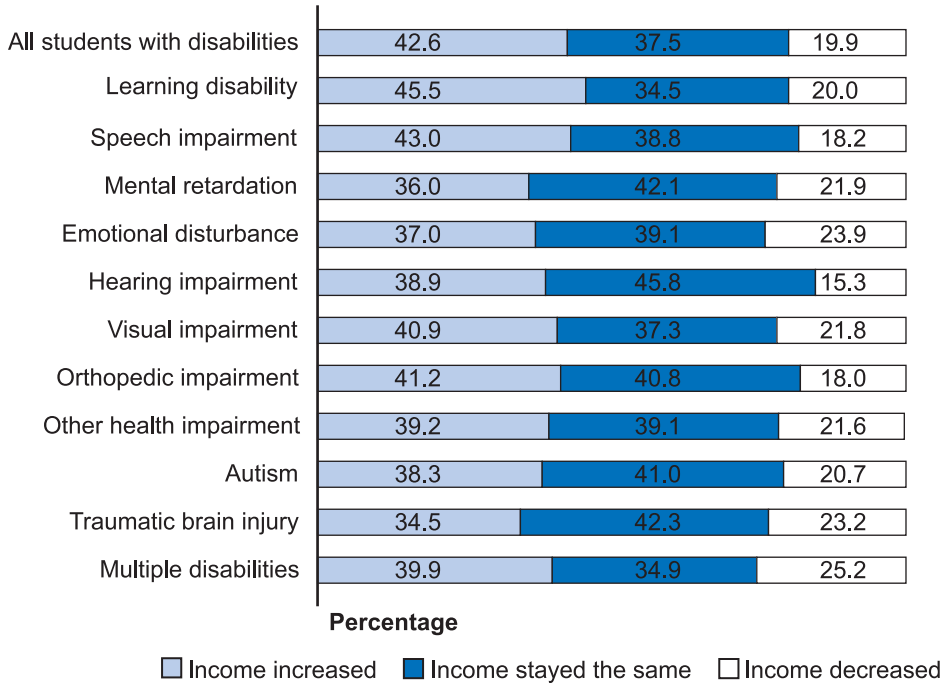
| | Wave 1 Income | | |
|---|---|---|---|
| | $25,000 or Less | $25,001 to $50,000 | More than $50,000 |
| Percentage with Wave 2 income of: | | | |
| $25,000 or less | 75.1 | 11.8 | 1.7 |
| $25,001 to $50,000 | 23.2 | 61.8 | 10.7 |
| More than $50,000 | 1.7 | 26.4 | 87.5 |

Source: SEELS parent interviews, Waves 1 and 2.

- One-fourth of students who in Wave 1 lived in households with incomes of $25,000 or less have experienced a large enough increase in household income to move into the middle or highest income categories (23% and 2%, respectively). They have had a corresponding decline in the percentage living in poverty, from 67% to 55%.
- Even more students in the middle income category show changes in household income; 26% have moved into the highest income group, whereas about half as many (12%) have had household income decreases and have joined the lowest income group. In all, 8% of households who were in the middle income category in Wave 1 are among the ranks of families in poverty in Wave 2.
- Twelve percent of students who were in the highest income group in Wave 1 have dropped from that category, with most joining the middle income group; 1% has become families living in poverty.
- Overall, only 38% of students with disabilities have parents who report a household income in Wave 2 that is within the same $5,000 range as in Wave 1 (Exhibit 2-5).[3] Forty-three percent of students with disabilities live in households that have had increases in income; 20% have had decreases in the annual income of their households.

[3] The extent of income change was calculated from parents' reports of their household income on a scale that increased by $5,000 increments (e.g., income was $15,001 to $20,000, $20,001 to $25,000, etc.). A household is considered to have no change in income if the household income reported for Wave 1 and Wave 2 was in the same $5,000 income category. A decrease is recorded if the income category reported in Wave 2 was lower than Wave 1 and, conversely, an increase was coded if the income category in Wave 2 was higher than Wave 1.

**Exhibit 2-5**
**Changes in Household Incomes, by Disability Category**




Source: SEELS parent interviews, Waves 1 and 2.

- Students with learning disabilities are the most likely to have experienced increases in the incomes of their households (46%).
- In contrast, 37% or fewer of students with mental retardation, emotional disturbances, or traumatic brain injuries show income increases. Students with emotional disturbances or traumatic brain injuries also are the most likely to have experienced decreases in household income (24% and 25%), many more than students with hearing impairments, who are least likely to be living in households whose incomes have declined (15%).
- Students with mental retardation, emotional disturbances, traumatic brain injuries, or multiple disabilities are the most likely to be living in poverty in Wave 2 (24% to 33%, compared with 20% of students with learning disabilities, for example).
- Changes in income have not been accompanied by changes in benefit program participation.

## Students' Functioning

Children with disabilities demonstrate no changes in many aspects of their functioning in a 2-year period. For example, 81% of students with disabilities have normal hearing in Wave 2, 89% have normal use of their arms and hands for gross motor functioning, the same percentage have normal use of their legs and feet, and two-thirds of students are reported to carry on a conversation as well as other children their age, all levels of functioning that are unchanged over a 2-year period. However, some changes are noted:

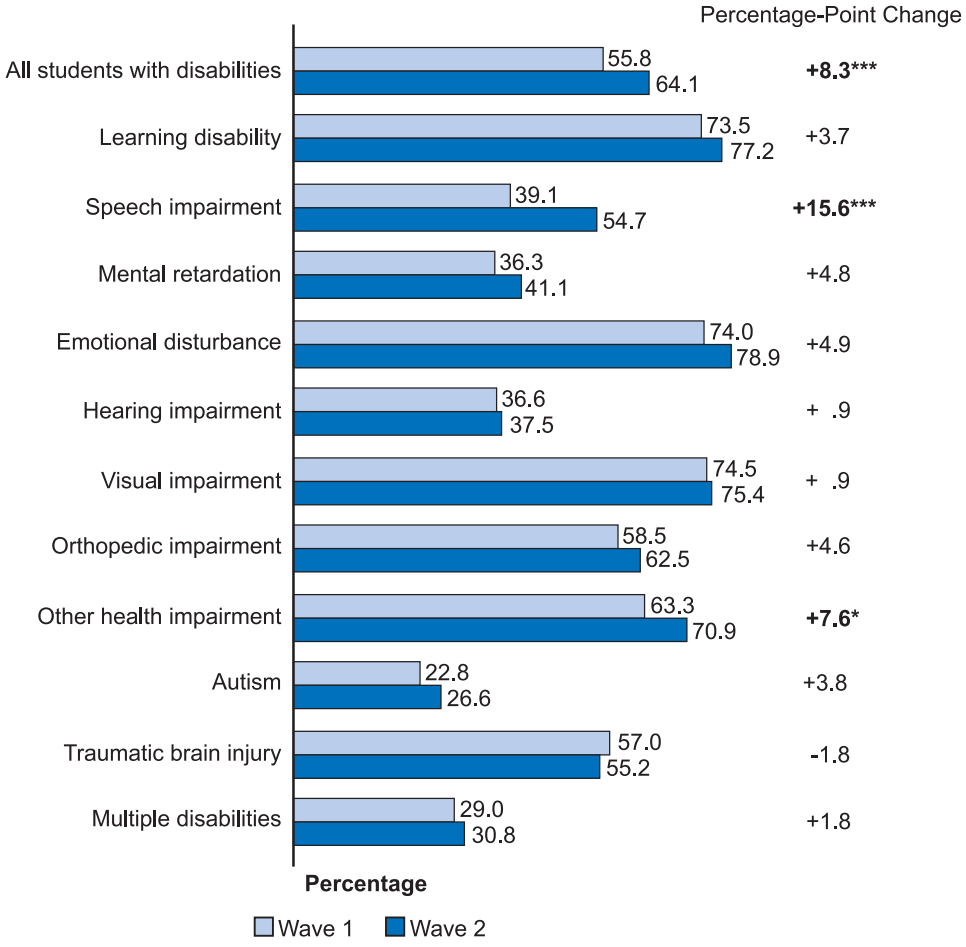
### Use of Glasses or Contact Lenses

- Students are more likely to wear glasses or contacts as they age. There has been a 7-percentage-point increase overall in students using corrective lenses, resulting in 37% of students doing so in Wave 2. However, sizable increases are noted for students in only two disability categories—those with speech or hearing impairments (10 percentage points). These differential changes across categories do little to change the wide range in children's use of glasses or contact lenses, from 20% of students with autism to 67% of those with visual impairments.

### Clarity of Speech

- Consistent with expectations due to maturation, the clarity of speech of students with disabilities has improved overall and among those in two disability categories (Exhibit 2-6). Overall, 64% of students with disabilities in Wave 2 are reported to speak as clearly as other children their age, an 8-percentage-point increase since Wave1. Improvements are noted for students with speech or other health impairments (16 and 8 percentage points).
- Even with these changes, however, only 55% of students with speech impairments are reported in Wave 2 to speak as clearly as other children their age. Clear speech is even more problematic for students with mental retardation, hearing impairments, autism, or multiple disabilities, among whom from 27% to 41% are reported to speak as clearly as same-age peers in Wave 2.

**Exhibit 2-6**
**Changes in Clarity of Children's Speech, by Disability Category**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

## Differential Changes in Use of Glasses/Contacts and Clarity of Speech

These changes in the use of corrective lenses and children's clarity of speech have occurred among younger children:

- An 11-percentage-point increase in the likelihood that children wear glasses is noted among students with disabilities who were ages 7 through 9 in Wave 1, with no significant change among older students. Despite their larger increase in use of glasses or contact lenses, younger students still lag older students in doing so (33% of Wave 1 7- through 9-year olds use them by Wave 2, vs. 41% of 10- through 12-year-olds).
- The youngest students are the only age group to demonstrate an increase in clarity of speech (11 percentage points), yet they are not as likely to be

reported to speak as clearly as others their age as are older students (55% of 7- through 9-year olds vs. 76% of 10- through 12-year olds in Wave 2).

Regarding gender difference, the increase in the likelihood of wearing glasses is similar for boys and girls (8 and 6 percentage points, respectively). However, girls are more likely to wear glasses than boys (35% vs. 28% in Wave 1; 44% vs. 34% in Wave 2). Boys and girls also show similar, 8-percentage point increases in the clarity of their speech.

Changes in the use of glasses or contacts and in clarity of speech have occurred differentially across income and racial/ethnic groups.

- Eight-percentage-point increases in the likelihood of wearing glasses are noted among students from both the middle income group (those in households earning $25,001 to $50,000) and the highest income group (in households earning more than $50,000). These changes result in similar rates of wearing glasses or contacts across the three income groups in Wave 2 (36% to 39%).
- In contrast, students from the lowest and highest income households show increases in their reported clarity of speech (9 and 13 percentage points, respectively). However, students from wealthier households still are more likely to be reported to speak as clearly as same-age peers than are students from the lowest income group (68% vs. 60%).
- Changes in the use of corrective lenses and in clarity of speech have occurred entirely among white students with disabilities, who show a 9-percentage-point increase in the likelihood of wearing glasses and an 8-percentage point increase in being reported to speak as clearly as other children their age. This increase in the clarity of their speech results in white students with disabilities being more likely than their African-American peers to be reported by parents to speak as clearly as other children their age in Wave 2 (65% vs. 56%), a difference that was not apparent in Wave 1.

### Daily Living and Social Skills

Additional changes as children age are noted in parent ratings of their children's self-care skills,[4] their functional cognitive skills,[5] their social skills,[6] and the

[4] Parents were asked how well their children with disabilities could dress and feed themselves on their own without help. For each skill, parents responded on a 4-point scale, ranging from 1 ("not at all well") to 4 ("very well"). Summing the two responses produces a scale that ranges from 2 to 8.

[5] Parents were asked how well their children with disabilities could: "read common signs, such as 'stop' or 'danger'," "tell time on a clock with hands," "look up telephone numbers and use the phone," and "count change." For each skill, parents responded on a 4-point scale, ranging from 1 ("not at all well") to 4 ("very well"). Summing the four responses produces a scale that ranges from 4 to 16.

[6] Parents were asked how often their children with disabilities perform 11 social activities from the Social Skills Rating System (Gresham & Elliott, 1990). (Please see Appendix A for a list of these items.) Parents responded to each activity on a 3-point scale ranging

frequency with which they do various household tasks,[7] all indicating increasing ability with age (Exhibit 2-7).

**Exhibit 2-7**
**Changes in Daily Living and Social Skills**

| | Scale Score[a] | | |
|---|---|---|---|
| | High | Medium | Low |
| Percentage rated by parents on: | | | |
| Self-care skills | | | |
| Wave 1 | 75.5 | 22.2 | 2.3 |
| Wave 2 | 79.9 | 18.0 | 2.1 |
| Percentage-point change | +4.4* | -4.2* | |
| Functional cognitive skills | | | |
| Wave 1 | 24.5 | 63.0 | 12.5 |
| Wave 2 | 42.1 | 49.4 | 8.5 |
| Percentage-point change | +17.6*** | -13.6*** | -4.0** |
| Social skills | | | |
| Wave 1 | 19.7 | 68.4 | 12.0 |
| Wave 2 | 22.4 | 68.9 | 8.8 |
| Percentage-point change | | | -3.2* |
| Household responsibilities | | | |
| Wave 1 | 2.4 | 36.2 | 61.4 |
| Wave 2 | 4.0 | 44.6 | 51.4 |
| Percentage-point change | +1.6* | +8.4*** | -10.0*** |

Source: SEELS parent interviews, Waves 1 and 2.

[a] The self-care scale has a range of 2 to 8. Low is a score of 2 through 4, medium is a score of 5 through 7, and high is a score of 8. The functional cognitive skills scale ranges from 4 to 16. Low scores are 4 through 8, medium scores are 9 through 14, and high scores are 15 and 16. The social skills scale ranges from 0 to 22, with low defined as 0 through 14, medium as 15 through 19, and high as 20 through 22. The household responsibilities scale ranges from 3 to 12. Low includes scores of 3 through 6, medium includes scores of 7 through 10, and high includes scores of 11 and 12.

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

- Functional cognitive skills have increased the most with age; 42% of students are rated "high" on the functional cognitive skills scale in Wave 2, an increase of 18 percentage points over ratings in Wave 1. There have been corresponding decreases in students who score in the medium and low ranges of the scale.
- Self-care skills have increased by 4 percentage points, so that in Wave 2, 80% of students score high. There has been a similar decrease in students

from 0 ("rarely or never") to 2 ("very often"). Summing the responses produces a scale that ranges from 0 to 22.

[7] Parents were asked how often their children with disabilities: "fix their own breakfast or lunch," "clean up their own room or living area," and "do laundry." For each activity, parents responded on a 4-point scale ranging from 1 ("rarely or never") to 4 ("almost always"). Summing the responses produces a scale that ranges from 3 to 12.

who score in the medium range on the scale but no change in the percentage with low self-care skills.

- Students' social skills have changed only modestly, showing a 3-percentage-point decrease in students having low social skills scores; 9% of students have low social skills scores in Wave 2.
- There has been a 10-percentage-point decrease in students scoring in the low range of the household responsibilities scale, with corresponding increases in students who score in both the medium and high ranges. Nonetheless, more than half of students remain in the low range of the scale in Wave 2, when they are 9 to 15 years old.

### *Differential Changes in Daily Living and Social Skills across Disability Categories*

A change in at least one daily living or social skills score is apparent for all disability categories (Exhibit 2-8). For example:

- Functional cognitive skills have increased markedly for students in all categories except visual impairment, with significant increases ranging from 5 to 24 percentage points for students with autism and hearing impairments, respectively. These changes have widened the differences across categories in students having high functional cognitive skills. A 26-percentage-point difference was apparent in Wave 1 between students with mental retardation and those with speech impairments (5% vs. 31%), a difference that widened to 40 percentage points in Wave 2 (13% vs. 53%).

**Exhibit 2-8**
**Changes in Daily Living and Social Skills, by Disability Category**

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage rated "high" on: | | | | | | | | | | | |
| Self-care skills (8) | | | | | | | | | | | |
| Wave 1 | 81.1 | 86.3 | 52.5 | 65.7 | 77.3 | 44.2 | 35.0 | 58.1 | 32.5 | 45.7 | 32.6 |
| Wave 2 | 85.4 | 88.4 | 58.9 | 71.9 | 80.0 | 52.8 | 41.3 | 65.2 | 37.7 | 62.6 | 39.3 |
| Percentage-point change | | | | | | | | | | +16.9* | |
| Functional cognitive skills (15 or 16) | | | | | | | | | | | |
| Wave 1 | 24.1 | 31.4 | 5.3 | 27.0 | 22.0 | 18.9 | 23.0 | 26.2 | 8.2 | 11.2 | 7.7 |
| Wave 2 | 42.9 | 52.6 | 13.3 | 41.4 | 45.8 | 26.1 | 33.1 | 40.5 | 13.4 | 27.3 | 14.1 |
| Percentage-point change | +18.8*** | +21.2*** | +8.0*** | +14.4*** | +23.8*** | | +10.1** | +14.3*** | +5.2* | +16.1* | +6.4* |
| Percentage rated "low" on: | | | | | | | | | | | |
| Social skills (0 through 14) | | | | | | | | | | | |
| Wave 1 | 10.5 | 6.8 | 19.2 | 26.8 | 10.5 | 12.0 | 8.6 | 16.8 | 35.9 | 18.8 | 24.2 |
| Wave 2 | 7.2 | 5.0 | 16.3 | 17.3 | 7.7 | 11.0 | 10.0 | 10.7 | 29.7 | 15.0 | 25.0 |
| Percentage-point change | | | | -9.5** | | | | -6.1* | | | |
| Household responsibilities (3 through 6) | | | | | | | | | | | |
| Wave 1 | 55.8 | 60.5 | 71.5 | 67.7 | 56.9 | 69.2 | 77.5 | 70.6 | 84.8 | 70.7 | 79.9 |
| Wave 2 | 45.0 | 50.8 | 62.2 | 54.8 | 48.2 | 59.7 | 73.3 | 61.7 | 77.4 | 56.3 | 75.9 |
| Percentage-point change | -10.8** | -9.7* | -9.3* | -12.9** | -8.7* | -9.5* | | -8.9* | -7.4* | | |

Source: SEELS parent interviews, Waves 1 and 2.

Note: The percentages of students scoring high are reported for the self-care and functional cognitive skills scales because that is the range in which the greatest change has occurred. The percentages scoring low on the social skills and household responsibilities scales are reported for the same reason.

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

- The only sizable increase in high self-care skills scale scores is noted for students with traumatic brain injuries. With a 17-percentage-point increase, 63% of students scored high in self-care skills in Wave 2. Nonetheless, these students still are less likely to score high on self-care skills (46%) than students with learning disabilities or speech or hearing impairments, among whom 80% or more have high self-care skills in Wave 2. Students with autism are most challenged in their self-care skills; 38% have high scores on this scale in Wave 2.
- The decrease in students with low social skills that is noted for students with disabilities as a whole results from sizable decreases only among students

with emotional disturbances or other health impairments (10 and 6 percentage points, respectively). Despite this improvement among students with emotional disturbances, they and students with autism or multiple disabilities are the most likely to be reported to have low social skills (16% to 30% in Wave 2), notably more than the 10% or fewer who have low social skills in the categories of learning disabilities or speech, hearing, or orthopedic impairments. Yet the differences across categories are somewhat narrower in Wave 2 (24 percentage points) than in Wave 1 (29 percentage points).

- Decreases in low scores on the household responsibilities scale are apparent for eight of the 12 disability categories, ranging from 7 percentage points among students with autism to 13 percentage points among those with emotional disturbances. Students with learning disabilities are the least likely to have low scores in both waves (56% and 45%) and students with autism are the most likely (85% and 77%).

### *Differential Changes in Daily Living and Social Skills across Demographic Groups*

Changes in the various kinds of functional skills have occurred differentially across age groups (Exhibit 2-9).

- The improvement in self-care skills is noted entirely among the youngest students (a 7-percentage-point increase in high scores), although that group continues to lag behind older students in Wave 2 (77% scoring high vs. 87% of the oldest age group).
- In contrast, the improvement in social skills has occurred only among the oldest students (a decline in low scores of 11 percentage points), with there being no difference across the age groups in the percentages with low scores in Wave 2.

**Exhibit 2-9**
**Changes in Daily Living and Social Skills**

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Percentage rated "high" on: | | | |
| Self-care skills (8) | | | |
| Wave 1 | 70.2 | 78.9 | 79.9 |
| Wave 2 | 77.2 | 80.6 | 86.9 |
| Percentage-point change | +7.0* | | |
| Functional cognitive skills (15 or 16) | | | |
| Wave 1 | 15.5 | 30.2 | 31.6 |
| Wave 2 | 33.4 | 46.5 | 57.3 |
| Percentage-point change | +17.9*** | +14.3*** | +25.7*** |
| Percentage rated "low" on: | | | |
| Social skills (0 through 14) | | | |
| Wave 1 | 11.6 | 11.6 | 15.8 |
| Wave 2 | 8.9 | 9.4 | 5.2 |
| Percentage-point change | | | -10.6* |
| Household responsibilities (3 through 6) | | | |
| Wave 1 | 71.4 | 54.9 | 54.8 |
| Wave 2 | 62.4 | 44.2 | 44.1 |
| Percentage-point change | -9.0** | -10.7*** | |

Source: SEELS parent interviews, Waves 1 and 2.

Note: The percentages of students scoring high are reported for the self-care and functional cognitive skills scales because that is the range in which the greatest change has occurred. The percentages scoring low on the social skills and household responsibilities scales are reported for the same reason.

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

- Functional cognitive skills have improved across the age span, with a particularly large increase of 26 percentage points among the oldest group. In Wave 2, significantly greater proportions of students in each succeeding age cohort have high functional cognitive skills scores (33% to 57%).
- Low scores on the household responsibilities scale have declined by 9 and 11 percentage points for the youngest and middle age cohorts, respectively. Nonetheless, the youngest group continues to have the most members with low scores in Wave 2 (62% vs. 44% of the other age groups).

Change in daily living and social skills also have occurred among income and racial/ethnic groups at different rates.

- Patterns of change across income and racial/ethnic groups for the various functional skills mirror those across disability and age groups in that changes in self-care skills are limited in the number of groups affected (Exhibit 2-10). Self-care skill improvements are noted only for the lowest income group and for white students (7- and 5-percentage-point increases in high scores, respectively).

**Exhibit 2-10**
**Changes in Daily Living and Social Skills, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage rated (by parents) "high" on: | | | | | | |
| Self-care skills (8) | | | | | | |
| Wave 1 | 67.7 | 80.1 | 78.8 | 76.8 | 73.7 | 74.7 |
| Wave 2 | 74.6 | 83.3 | 81.7 | 81.8 | 75.4 | 76.9 |
| Percentage-point change | +6.9* | | | +5.0* | | |
| Functional cognitive skills (15 or 16) | | | | | | |
| Wave 1 | 21.2 | 22.3 | 32.6 | 25.5 | 18.5 | 27.2 |
| Wave 2 | 34.1 | 42.2 | 52.2 | 46.0 | 34.5 | 34.1 |
| Percentage-point change | +12.9*** | +19.9*** | +19.8*** | +20.5*** | +16.0*** | |
| Percentage rated (by parents) "low" on: | | | | | | |
| Social skills (0 through 14) | | | | | | |
| Wave 1 | 17.5 | 11.7 | 5.6 | 11.0 | 13.7 | 13.9 |
| Wave 2 | 13.6 | 7.0 | 5.6 | 7.6 | 11.6 | 10.3 |
| Percentage-point change | | -4.7* | | -3.4* | | |
| Household responsibilities (3 through 6) | | | | | | |
| Wave 1 | 63.7 | 61.3 | 60.8 | 62.5 | 58.9 | 60.4 |
| Wave 2 | 54.8 | 48.8 | 51.4 | 52.6 | 45.7 | 52.9 |
| Percentage-point change | -8.9* | -12.5** | -9.4* | -9.9*** | -13.2** | |

Source: SEELS parent interviews, Waves 1 and 2.

Note: The percentages of students scoring high are reported for the self-care and functional cognitive skills scales because that is the range in which the greatest change has occurred. The percentages scoring low on the social skills and household responsibilities scales are reported for the same reason.

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

- White students are the only racial/ethnic group to experience an improvement in social skills (a 3-percentage-point decline in low scores), an improvement shared only with the middle of the three income groups (5 percentage points).
- Improvements in functional cognitive skills are more widespread, reaching all income groups (13- to 20-percentage-point increases) and both white and African-American students (20 and 16 percentage points). Nonetheless, low-income students are less likely than wealthier peers to have high functional cognitive skills scores in both waves (21% vs. 33% in Wave 1, 34% vs. 52% in Wave 2), as are African-American students with disabilities relative to white youth (18% vs. 26% in Wave 1, 34% vs. 46% in Wave 2).

- Household responsibilities scale score increases also are apparent regardless of income (9- and 12-percentage-point declines in low scores), and among both white and African-American students (10 and 13 percentage points).

## Summary

This chapter has examined changes in characteristics of both the households of students with disabilities and in aspects of their own functioning.

### Changes in Household Characteristics

Two years is a short period of time, and modest expectations are appropriate regarding the changes in students with disabilities or the households that would be observed in that time period. Consistent with these modest expectations, many aspects of students' households appear stable over time. As a group, students with disabilities have not experienced significant changes in such aspects of their households as living with two parents, their parents' marital status, or the employment status of their heads of household.

However, additional analyses of these characteristics of students' households point out the importance of balancing an examination of change in the aggregate with changes in the experiences of individual students. Despite there being no significant change in living arrangements or employment or marital status among students with disabilities as a whole, 15% of students have experienced changes in their living arrangements with parents, including 5% of students with disabilities who were living with two parents in Wave 1 but no longer are in Wave 2. Similarly, 15% of students with disabilities have parents whose marital status has changed, including 6% who have become separated, divorced, or widowed since Wave 1. And 12% of students with disabilities have heads of households who have had a change in employment status, including 6% whose heads of household have joined the ranks of the unemployed.

Income changes are apparent both among students with disabilities as a whole and to an even greater extent among individual students' families. There has been a 6-percentage-point decline in students with disabilities living in households earning $25,000 or less and a 5-percentage-point increase in their living in households with incomes of more than $50,000. However, almost two-third of students are in households with income changes of $5,000 or more, including 43% whose household incomes have increased and 20% whose incomes have decreased.

These changes in household circumstances have not accrued equally to students in different disability categories. The greatest stability in most household characteristics is apparent for students with autism, whereas students with emotional disturbances or traumatic brain injuries are the most likely to have experienced changes in living arrangements with parents, their parents' marital status, and the employment status of their heads of household. They also are the most likely to have had decreases in the incomes of their households.

## Students' Functioning

SEELS findings reveal both increases and decreases in different aspects of students' functioning over time. For example, eye sight apparently has deteriorated for some students, resulting in an increased likelihood that students use corrective lenses. On the other hand, there have been improvements in parents' ratings of students' self-care and social skills, their functional cognitive abilities, and their household responsibilities.

Looking at skill changes across the SEELS age range highlights the different developmental tasks that are appropriate at different ages. For example, improvements in self-care skills occurred entirely among the youngest children, some of whom are still mastering such activities as independent dressing and feeding. On the other hand, the largest improvements in functional cognitive skills is noted for the oldest group of students, who show the greatest gains in mastering such tasks as counting change and looking up telephone numbers.

The pattern of changes in daily living and social skills across disability categories also points up the variation in the skills that are particularly challenging to students who differ in their primary disabilities. For example, self-care skill improvements are notable only among students with traumatic brain injuries, some of whose injuries may require them to relearn such fundamental skills as dressing or feeding themselves. Similarly, a shift in social skills scores out of the low range to the middle range is only apparent among students with emotional disturbances or other health impairments, many of whom have attention deficit or attention deficit/hyperactivity disorder (ADHD) as their primary disability, categories of students for whom social skills and behavior are fundamental to their disabilities.

In contrast, improvements in basic functional cognitive skills are quite widespread across the disability categories, indicating appropriateness of such developmental tasks as acquiring literacy and mathematical functioning for all students. Similarly, increases in household responsibilities are noted for students in most categories, illustrating their burgeoning independence and responsibility, regardless of disability.

The changes in the characteristics of students with disabilities and their households that are noted here are provide a useful context for understanding the changes in students' experiences both in and out of school that are described in the following chapters.

# 3. Changes in the Out-of-School Activities of Children with Disabilities *By Camille Marder and Tracy Huang*

As pointed out in *The Other 80% of their Time: The Experiences of Elementary and Middle School Students with Disabilities in their Nonschool Hours* (Wagner et al., 2002), children spend the majority of their waking hours outside of school, at play with other children, taking part in extracurricular activities, pursing individual interests, or engaging in community activities or various forms of recreation. As children age, the ways they spend their out-of-school time may change. For example, more time may be spent with peers as friendships deepen, and children's use of the computer may increase as they become more competent with that technology. In addition, as children identify interests and hone skills, they may participate increasingly in a variety of extracurricular sports or clubs.

This chapter examines the extent to which the out-of-school experiences of students with disabilities who were in elementary and middle school in 2000 have changed over a 2-year period, as reported by their parents. Specifically, changes in children's informal friendships, after-school care arrangements, and extracurricular activities are presented for children with disabilities as a whole and for children who differ in their primary disability category, age, and selected demographic characteristics, when significant.

## Informal Friendships

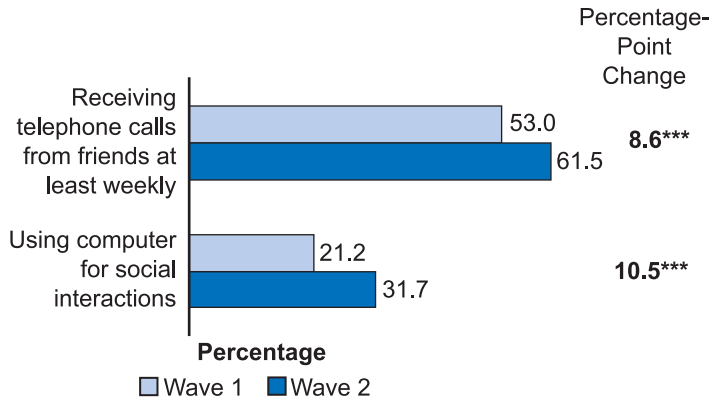
Relations with peers have been strongly linked to the social adjustment of children and adolescents (Asher and Coie, 1990; Bukowski, Newcomb, and Hartup, 1996; Parker & Asher, 1987). Friendship interactions may be particularly important for children and youth with disabilities because they can provide a safe environment in which to learn in social skills, help define appropriate behavior, and develop accepting and supportive relationships.

SEELS examines the frequency with which students with disabilities engage in several forms of informal friendship interactions: seeing friends outside of school or organized groups, being invited to social activities, and receiving telephone calls from friends. Whether students with disabilities interact with others by e-mail or in chat-rooms also is considered.

There has been little change in the frequency of face-to-face interactions of students with disabilities with their friends since Wave 1. In Wave 2, approximately 65% of children see friends outside of school and organized groups at least weekly, and approximately 90% have been invited to other children's social activities in the past year. In contrast, there have been increases in interactions by telephone and computers.

- From Wave 1 to Wave 2, the percentages of children who receive telephone calls from friends at least weekly and who use computers for social interactions have increased by approximately 10 percentage points each (Exhibit 3-1).

**Exhibit 3-1**
**Changes in Receipt of Phone Calls from Friends and Use of Computers for Social Interaction among Children with Disabilities**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

- Not all children have experienced such increases (Exhibit 3-2). Only children with learning disabilities or speech or hearing impairments have experienced increases of more than 8 percentage points for both receipt of phone calls and computer use for social interactions. Children with emotional disturbances show a 9-percentage-point increase in receipt of phone calls, and children with other health impairments show a 10-percentage-point increase in use of the computer for social interactions.
- In Wave 2, there continue to be wide ranges in the percentages of children who receive phone calls from friends at least weekly and who use computers for social interactions. In both cases, children with learning disabilities are at the high end of the continuum, and children with autism are at the low end. For computer use, children with hearing impairments also are at the high end of the continuum, and children with multiple disabilities also are at the low end of the continuum.

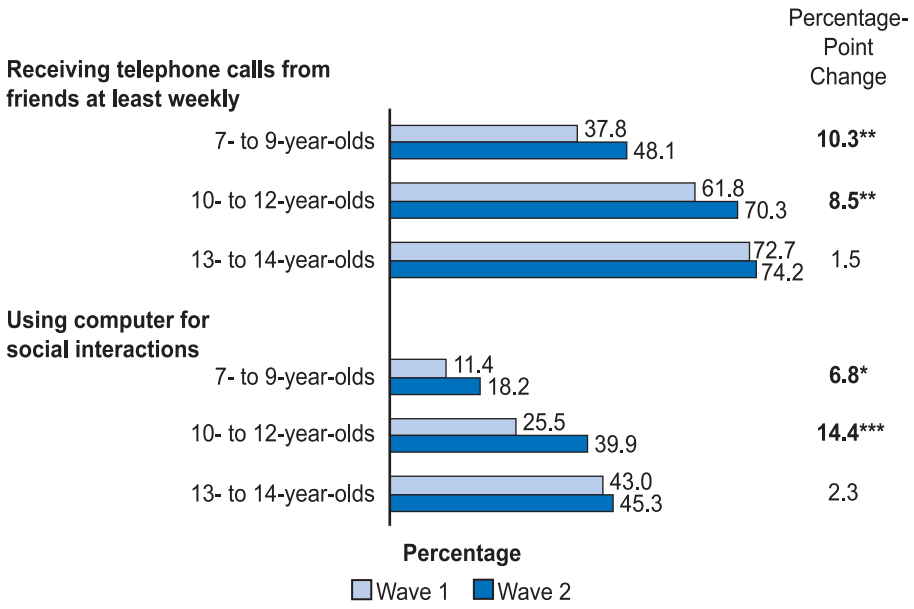
**Exhibit 3-2**
**Changes in Receipt of Phone Calls from Friends and Use of Computer for Social Interaction, by Disability Category**

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage: | | | | | | | | | | | |
| Receiving phone calls from friends at least weekly | | | | | | | | | | | |
| Wave 1 | 63.9 | 52.1 | 35.2 | 43.4 | 33.4 | 48.4 | 40.5 | 48.5 | 11.6 | 54.2 | 24.1 |
| Wave 2 | 72.8 | 61.1 | 40.8 | 52.6 | 46.5 | 49.0 | 43.8 | 54.3 | 11.2 | 55.0 | 33.7 |
| Percentage-point change | +8.9* | +9.0* | +5.6 | +9.2* | +13.1** | | | | | | +9.6* |
| Using the computer for social interactions | | | | | | | | | | | |
| Wave 1 | 27.2 | 18.2 | 11.0 | 17.9 | 28.6 | 24.1 | 22.8 | 23.8 | 6.0 | 14.8 | 8.7 |
| Wave 2 | 39.9 | 29.4 | 12.4 | 25.8 | 40.1 | 23.6 | 29.9 | 33.9 | 8.7 | 21.8 | 9.1 |
| Percentage-point change | +12.7** | +11.2** | | | +11.5* | | | +10.1* | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01.

- Both types of social interaction appear to rise until children enter their early teens and then level off (Exhibit 3-3). Thus, there have been substantial increases for students with disabilities who were 7 through 12 years old in Wave 1, but not for those who were older.
- Boys and girls with disabilities have both experienced an increase of approximately 9 percentage points in receipt of phone calls, so that in Wave 2, 58% of boys and 67% of girls receive phone calls from friends at least weekly.
- The gender gap in computer-based interactions has grown with girls' increase of 16 percentage points in computer use for social interactions—twice the increase for boys with disabilities. In Wave 2, 40% of girls and 28% of boys use computers for such interactions.

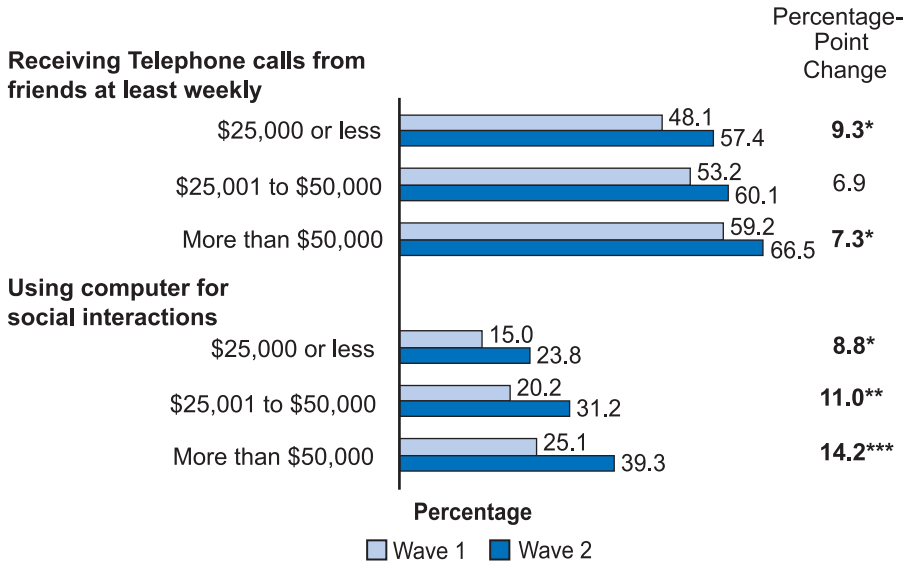
**Exhibit 3-3**
**Phone and Computer, by Age in Wave 1**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; ** p < .01; *** p < .001.

- The likelihood of receiving phone calls at least weekly has increased by 9 and 7 percentage points among students with disabilities from families in both the lowest and highest income groups. Those from families in the middle-income group families have experienced minimal change.
- Although use of computers for social interaction has increased among students with disabilities from all three household income levels, greater changes are associated with higher-income households. Among children from households with incomes of less than $25,000, the share using computers for social interaction has increased by 8 percentage points, whereas among children whose household incomes exceed $50,000, the share has increased by14 percentage points (Exhibit 3-4).

**Exhibit 3-4**
**Changes in Students' with Disabilities' Receipt of Phone Calls from Friends, by Household Income**




Source: SEELS parent interviews Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; ** p < .01; *** p < .001.

- The likelihood of receiving phone calls from friends at least weekly has increased by 7 and 8 percentage points for white and African-American children, respectively, but not notably for Hispanic children. As of Wave 2, 63% of white children, 61% of African-American children, and 55% of Hispanic children receive phone calls from friends at least weekly.

## After-School Care and Supervision

The dramatic increase of both single-parent families and families with two working parents has made it difficult for many families to provide supervised, safe, and productive activities for children after school. *The Other 80% of their Time: The Experiences of Elementary and Middle School Students with Disabilities in their Nonschool Hours* (Wagner, et al., 2002) reports on the after-school care arrangements of students with disabilities in 2000. This section describes the extent to which the after-school care arrangements of those children have changed in subsequent 2 years.

- In Wave 2, the large majority of students with disabilities (87%) usually go directly home after school. There is little variation across the disability categories, with a range of 82% to 90%. These proportions are unchanged from Wave 1.

- Like their peers in the general population, as children with disabilities age, they become increasingly independent. For example, there is a modest increase in the share that go home no adult supervision. In Wave 1, 4% of 7- to 10-year-olds went directly home from school to situations in which no adult was present; in wave 2, 7% of these same children go directly home to situations in which no adult is present.[1]
- The only disability categories for which there has been a notable decrease in children going home to unsupervised situations are youth with speech or hearing impairments, among whom proportions have risen from 3% to 7% and from 3% to 11%, respectively. In Wave 2, the percentages of children who go home to unsupervised situations range from 3% of children with mental retardation or multiple disabilities to 11% of children with hearing impairments, with all other disability categories falling in the range of 4% to 8%.
- The increase in the likelihood of not having an adult at home has occurred only for those from the most affluent families. In Wave 2, 11% of children whose household incomes exceed $50,000 go directly home to situations in which no adult is present—up by 7 percentage points from Wave 1. Approximately 4% and 7% of students with disabilities from the lowest and middle income groups go directly home to situations in which no adult is present—percentages that represent minimal changes from Wave 1.
- Changes in after-school supervision have occurred almost entirely among white children with disabilities, whose likelihood of going home to an unsupervised situation has risen from 4% to 9%. The percentage of African American, Hispanic, and Asian/Pacific Islander children who go home to unsupervised situations in wave 2 are 4%, 2%, and less than 1%, respectively.

## Participation in Extracurricular Activities

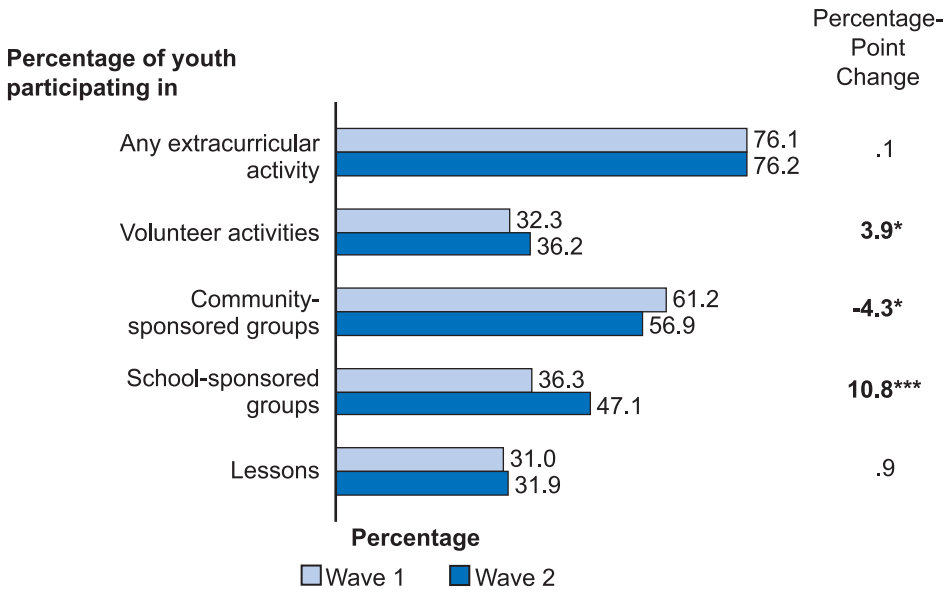
As children enter adolescence, they gain autonomy, in part, by expanding their participation in activities beyond the classroom, through school or community organizations. Through such activities, children can explore interests, learn skills, and interact with other children and adults. Parents of SEELS children were asked whether their children took lessons or classes outside of school,[2]

[1] Data from Waves 1 and 2 regarding whether an adult is present when children get home from school are available only for children who were under 11 years old in Wave 1.
[2] Parents were asked whether children had participated in any "lessons or classes outside of school in things like art, music, dance, foreign language, religion, or computer skills" during the preceding school year

participated in school-sponsored- or community-sponsored groups,[3] or volunteered or did other forms of community service.

From Wave 1 to Wave 2, many aspects of the extracurricular activities of children with disabilities have not changed. In Wave 2, three-fourths of children with disabilities participate in at least one extracurricular activity during the school year, and approximately one-third take extracurricular lessons or classes. However, levels of participation in other types of extracurricular activities have changed (Exhibit 3-5).

**Exhibit 3-5**
**Changes in Participation in Extracurricular Activities by Students with Disabilities**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

[3] For school-sponsored activities, parents were asked whether children had participated "any school activities outside of class, such as sports teams, band or chorus, or student government" during the preceding school year. For community-sponsored group activities, parents were asked whether children had participated in "any out-of-school activities, such as clubs, sports, religious groups, or scouting" during the preceding school year.

- There has been an 11-percentage-point increase in participation in school-sponsored group activities and a 4-percentage-point decrease in participation in community-sponsored group activities. A 4-percentage-point increase in participation in community service or volunteer activities also is noted.
- Increases in participation in school-sponsored activities are largest for children with speech impairments or traumatic brain injuries (15 and 18 percentage points, respectively; Exhibit 3-6). Increases of 8 to 12 percentage points are noted for children with learning disabilities, hearing impairments, autism, or multiple-disabilities.

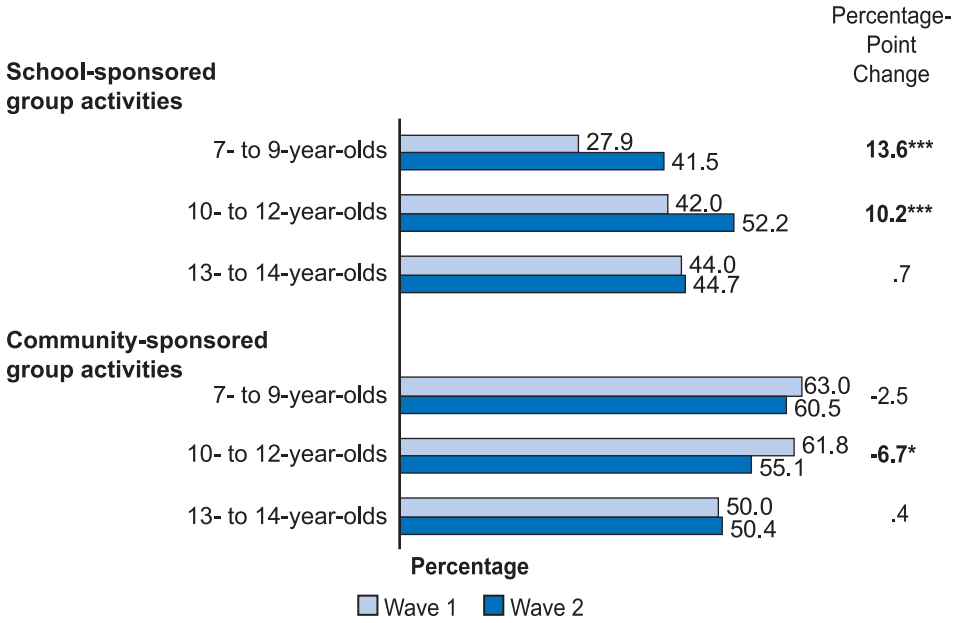
**Exhibit 3-6**
**Changes in Participation in School-Sponsored Group Activities, by Disability Category**

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage taking part in school-sponsored group activities in the current school year | | | | | | | | | | | |
| Wave 1 | 41.0 | 38.4 | 19.7 | 28.7 | 38.9 | 31.4 | 26.7 | 38.5 | 17.7 | 22.0 | 20.2 |
| Wave 2 | 49.6 | 53.8 | 26.3 | 37.6 | 49.8 | 42.9 | 34.3 | 47.1 | 25.5 | 40.3 | 28.5 |
| Percentage-point change | 8.6* | 15.4*** | | 8.9* | 10.9** | 11.5* | | 8.6* | 7.8* | 18.3*** | 8.3* |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- Changes in community-sponsored group activities and community service or volunteer activities do not differ across the various disability groups.
- Children who were ages 7 to 9 in Wave 1 have experienced the greatest increase in participation in school-sponsored group activities—a change of 14 percentage points (Exhibit 3-7). Children who were 10 to 12 in Wave 1 have increased their participation in these types of activities by 10 percentage points. These changes may result from the fact that some students in these two groups made the transition from elementary to middle school, where opportunities for school-sponsored extracurricular activities are more numerous than in elementary school. Their Wave 2 participation rate exceeds that of children in the oldest age group, who already had left elementary school and whose participation rate has remained stable.

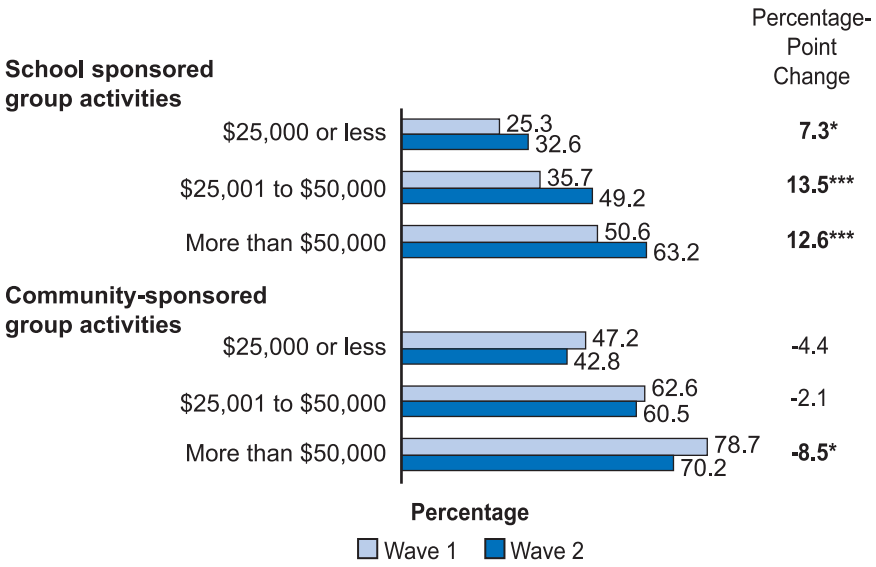
**Exhibit 3-7**
**Participation in Extracurricular Activities by Children with Disabilities, by Student's Age**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

- Participation in community-sponsored group activities declines in the early teens. Among students with disabilities who were 10 to 12 years old in Wave 1, the participation rate in such groups has declined by 7 percentage points. As they moved to middle school and joined the older age group, their Wave 2 participation rates became very similar. Participation rates of children who were 7 to 9 years old in Wave 1 also have been fairly flat.
- Boys and girls with disabilities show similar changes in participation rates in both school-sponsored and community-sponsored group activities. In contrast, girls are more likely to have increased their participation in community service and volunteer activities—by 7 vs. 2 percentage points—resulting in Wave 2 participation rates of 42% and 34%, respectively.
- Participation in school-sponsored group activities has increased among students with disabilities from all household income groups (Exhibit 3-8). However, the approximately 13-percentage-point increases among children from households in the middle and highest income groups are about twice as large as the increase among children from lower-income households.

**Exhibit 3-8**
**Participation in Extracurricular Activities by Children with Disabilities, by Household Income Level**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

- The rate of participation in community-sponsored group activities has decreased by 8-percentage points among children from households in the highest income group; however, the large majority of children in this group still participate in such activities. Minimal changes in these types of activities are observed among children from households in the lowest and middle-income groups. This trend may represent a shift from community to school-sponsored activities.
- The rate of participation in school-sponsored group activities of white students with disabilities has risen by 13 percentage points (from 41% to 54%), whereas their rate of participation in community-sponsored group activities has declined by 5 percentage points (from 70% to 65%). No significant changes are noted for children of other races/ethnicities.
- In Wave 2, one-third of African-American students with disabilities participate in school-sponsored group activities, and one-half participate in community-sponsored group activities. Approximately one-third of Hispanic students with disabilities participate in each type of activity.

## Summary

In the 2 years between Waves 1 and 2 of SEELS, students with disabilities who were 6 to 13 years old at the outset have not substantially changed their level of face-to-face social interactions; however, they have increased their use of the telephone and computers for social interactions. Although the likelihood that they participate in at least one extracurricular activity or take lessons or classes outside of school has not changed, they have increased their participation in school-sponsored groups and in community service or volunteer activities, while decreasing their participation in community-sponsored group activities.

Not surprisingly, the greatest changes in out-of-school activities have occurred as children have entered their teenage years and transitioned to middle school. Students with disabilities who were ages 10 through 12 in Wave 1 have increased their use of the phone and computers for social interactions; in Wave 2, fewer of them go directly home after school, and more of them participate in school-sponsored group activities. At the same time, participation in community-sponsored group activities has declined. The only change that has occurred among students of other ages is an increase in participation in school-sponsored group activities of students who were 7 through 9 years old in Wave 1.

Almost all disability groups have increased their participation in school-sponsored group activities, with the largest increases occurring among youth with speech impairments or traumatic brain injuries. Children with speech impairments are joined by children with hearing impairments in being the only children who *have become* more likely to go home to unsupervised situations after school and who *have increased* their use of the telephone and computers for social interaction. Children with emotional disturbance also *have increased* their use of the telephone for social interactions, whereas children with other health impairments have increased their use of computers for social interactions.

As children enter adolescence, girls and boys become somewhat more socially differentiated. Use of computers for social interactions and participation in community service or volunteer activities *has increased* more among girls than among boys.

Higher levels of household income are associated with greater changes. Children from households with incomes of more than $50,000 are among those with the greatest increase in participation in school-sponsored activities, perhaps because any fees associated with such participation are less a barrier for them than other groups. Students in the highest income group also are among those with the greatest increases in computer use for social interactions. Although it is less clear that limited income is a barrier to informal friendship interactions than these other forms of social involvement, receipt of social phone calls from friends also *increased* the most for this group.

Consistent with this pattern of changes for students in the highest income group, white children have the largest number of changes. They are the only racial/ethnic group to have changes in after-school care and in participation in both school-sponsored and community-sponsored group activities. In addition, together with African-American children, they have the largest changes on receipt of social phone calls.

Although this chapter has focused on the activities of students with disabilities in their nonschool hours, their families also are important to students' experiences outside of school. The next chapter addresses the role of families in holding expectations for their children's learning and supporting that learning at home.

# 4. Changes in Family Support for Education at Home for Students with Disabilities *By Lynn Newman and Christopher Sanford*

Parents convey their support for education by communicating expectations about educational attainment, paying attention to school issues, asking questions and talking with their children about school, helping with and monitoring homework, and providing tools for and creating a physical environment conducive to homework completion (Balli, Demo, & Wedman, 1998; Hoover-Dempsey & Sandler, 1995; Simon & Epstein, 2001). Maintaining a home environment that encourages learning and focuses on school-related issues is a critical contributor to a range of positive outcomes for children, including improved attitudes toward school, homework completion, and academic performance (Cooper, Lindsay, & Nye, 2000; Ho Sui-Chu & Willms, 1996; Hoover-Dempsey et al., 2001; Jeynes, 2003).

This chapter describes the ways in which several aspects of family support for education at home have changed over a 2-year period between Waves 1 and 2 of SEELS. *The Other 80% of Their Time: The Experiences of Elementary and Middle School Students with Disabilities in Their Non-School Hours* (Wagner, et. al., 2002) depicts parents' expectations for and involvement in supporting their children's education development at Wave 1, in 2000. Two years later, many students have transitioned from elementary to middle and middle to high school. Research conducted with children in the general population shows that many types of family involvement decline as students age (Catsambis & Garland, 1997; Cooper et al., 2000; Dauber & Epstein, 1994). How does family support for education at home change over time for students with disabilities?

Changes in a 2-year period in parents' expectations for students' educational attainment and aspects of their involvement in the education of their children with disabilities are described in the following sections. They include findings for students with disabilities as a whole and for students who differ in their primary disability category and selected demographic characteristics, when significant.

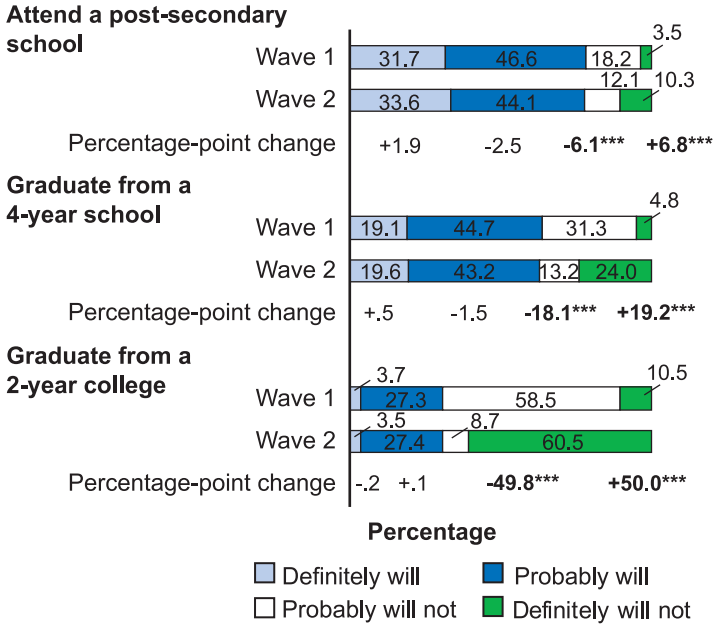
## Parents' Expectations

Research has demonstrated that having clear, consistent, and high expectations for students' learning and academic performance plays a key role in achievement (Goldenberg et al, 2001; Newman & Cameto, 1993; Phillips, 1992; Thorkildsen & Stein, 1998). To learn about parents' expectations for their children's education, SEELS parents were asked to rate the likelihood of their children attaining goals related to several aspects of secondary and postsecondary

education. Parents reported whether they thought their children "definitely will," "probably will," "probably won't," or definitely won't" achieve each potential outcome.

Several of parents' expectations have remained consistent over time. For example, expectations related to graduating from high school with a regular diploma have remained the same. At Wave 2, 92% of students with disabilities are expected "definitely" or "probably" to graduate from high school with a regular diploma. Similarly, expectations that students "definitely" or "probably" will attend a postsecondary school, graduate from a 4-year college, or graduate from a 2-year college have largely remained the same. At Wave 2, 78% of students are expected to attend a postsecondary school, 62% are expected to attend a 4-year college, and 31% of those who expected to go on to postsecondary school but not to attend a 4-year college are expected to attend a 2-year college. However, changes are noted for students who are not expected to achieve these postsecondary education markers, with parent becoming more pessimistic for these children as they age (Exhibit 4-1).

**Exhibit 4-1**
**Changes in Expectations**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

- The percentage of students whose parents reported they "definitely won't" attend postsecondary school has increased by 7 percentage points, whereas the percentage whose parents think they "probably won't" attend has decreased by 6 percentage points. These changes result in expectations in

Wave 2 that 12% of students with disabilities "probably won't" and 10% "definitely won't" attend a postsecondary school.

- There has been a 19-percentage-point increase in those whose parents think they "definitely won't" graduate from a 4-year college or university and a concurrent 18-percentage-point decrease in those whose parents think they "probably won't" do so. In Wave 2, 24% and 13% of students with disabilities have parents who report they "definitely" or "probably won't" graduate from a 4-year college.
- The largest change as students age concerns expectations for graduation from a 2-year college. Of those who are expected to go on to postsecondary education but not to graduate from a 4-year college, 61% have parents who in Wave 2 expect they "definitely won't" graduate from a 2-year college and 9% "probably won't." This is an increase of 50 percentage points in those whose parents say they "definitely won't" graduate from a 2-year college and a concurrent 50-percentage point decrease in those whose parents think they "probably won't."

### Differential Changes in Parents' Expectations Across Disability Categories

Changes in parents' expectations that differ across disability categories are noted below.

- The expectation that students with disabilities "definitely won't" attend a postsecondary school has increased for students in each disability category, but the size of those increases ranges widely, from 22 percentage points for students with autism and 19 percentage points for students with multiple disabilities to 5 and 4 percentage points for those with visual or speech impairments, respectively (Exhibit 4-2).
- Students with multiple disabilities (41%) or autism (35%) are the most likely in Wave 2 to have parents who say they "definitely won't" attend postsecondary school, whereas those with learning disabilities (8%) or speech impairments (5%) are the least likely.
- The expectations that students with disabilities "definitely won't" graduate from a 2-year or 4-year college also have increased for students in each disability category, but to different degrees. The largest increases are among students with traumatic brain injuries (a 42-percentage-point increase for "definitely won't" attend a 4-year college, and 69-percentage-point increase for not attending a 2-year college).

**Exhibit 4-2**
**Changes in Expectations for Educational Attainment, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage who are "definitely not" expected to: | | | | | | | | | | | |
| Attend post-secondary school | | | | | | | | | | | |
| Wave 1 | 1.6 | 1.0 | 16.4 | 2.5 | 1.3 | 9.4 | 5.0 | 3.6 | 13.2 | 6.9 | 22.3 |
| Wave 2 | 7.6 | 4.7 | 28.7 | 13.4 | 7.0 | 14.8 | 15.8 | 12.3 | 34.9 | 22.6 | 41.1 |
| Percentage-point change | +6.0*** | +3.7** | +12.3*** | +10.9*** | +5.7*** | | +10.8*** | +8.7*** | +21.7*** | 15.7** | +18.8*** |
| Graduate from a 4-year college | | | | | | | | | | | |
| Wave 1 | 3.1 | 1.4 | 19.8 | 3.5 | 1.6 | 9.9 | 5.6 | 5.2 | 14.6 | 8.4 | 24.4 |
| Wave 2 | 21.1 | 13.8 | 55.0 | 32.3 | 14.9 | 21.2 | 27.2 | 33.2 | 51.1 | 49.9 | 56.4 |
| Percentage-point change | +18.0*** | +12.4*** | +35.2*** | +28.8*** | +13.3*** | +11.3** | +21.6*** | +28.0*** | +36.5*** | +41.5*** | +32.0*** |
| Graduate from a 2-year college | | | | | | | | | | | |
| Wave 1 | 4.7 | 4.2 | 27.8 | 6.5 | 4.9 | 35.6 | 15.8 | 8.4 | 23.2 | 15.1 | 37.4 |
| Wave 2 | 52.2 | 57.8 | 75.6 | 64.4 | 52.3 | 73.4 | 74.1 | 59.5 | 76.7 | 84.6 | 81.9 |
| Percentage-point change | +47.5*** | +53.6*** | +47.8*** | +57.9*** | +47.4*** | +37.8*** | +58.3*** | +51.1*** | +53.5*** | +69.5*** | +44.5*** |

Source: SEELS parent interviews, Waves 1 and 2.
Note: The percentages for "definitely won't" are reported because that is the response for which the greatest change has occurred.
Statistically significant difference in a two-tailed test at the following levels: **p<.01, ***p<.001.

- Students in other categories also have experienced large increases in parents saying they "definitely won't" graduate from a 4-year college, including those with autism (36 percentage points) or mental retardation (35 percentage points), as well as "definitely won't" graduate from a 2-year college, including those with other health impairments (58 percentage points), mental retardation, or learning disabilities (48 percentage points each).
- In Wave 2, students with multiple disabilities or traumatic brain injuries are the most likely to have parents who say they "definitely won't" graduate from a 4-year college (56% and 50%) or a 2-year college (82% and 85%).

## Differential Changes in Expectations Across Demographic Groups

Changes in parents' expectations for postsecondary education vary across income and racial/ethnic groups (Exhibit 4-3).

**Exhibit 4-3**
**Changes in Parents' Expectations, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage whose parent report students: | | | | | | |
| Definitely won't attend postsecondary school | | | | | | |
| Wave 1 | 4.4 | 2.3 | 2.7 | 3.2 | 4.5 | 3.6 |
| Wave 2 | 13.0 | 11.0 | 6.6 | 10.1 | 11.8 | 8.0 |
| Percentage-point change | +8.6*** | +8.7*** | +3.9* | +6.9*** | +7.3** | |
| Definitely won't graduate from a 4-year college | | | | | | |
| Wave 1 | 5.7 | 4.0 | 3.8 | 4.7 | 4.9 | 5.1 |
| Wave 2 | 30.9 | 24.7 | 15.6 | 24.5 | 27.8 | 17.2 |
| Percentage-point change | +25.2*** | +20.7*** | +11.8*** | +19.8*** | +22.9*** | +12.1** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- The increased pessimism regarding students with disabilities attending postsecondary school and graduating from college is most apparent for students from lower- and middle-income households. Although an increase in parents reporting student "definitely won't" attend postsecondary school has occurred for all income groups, it is more than twice as large for students in the lowest and middle income groups (9 percentage points) than the highest income group (4 percentage points).
- With these changes, students in the lowest and middle income groups are more likely than their peers from wealthier families to have parents who say they "definitely won't" attend a postsecondary school in Wave 2 (13% and 11% vs. 7%)
- A similar pattern is apparent regarding graduating from a 4-year college. The largest increases in parents reporting students with disabilities "definitely won't" reach this education achievement are for students in the lowest and middle income groups (25 and 21 percentage points vs. 12 for the highest income group). In Wave 2, 31% of those from lower-income families and 25% of those in the middle income group have parents who say they "definitely won't" graduate from a 4-year college, compared with 16% of those from higher-income families.

- Increases in parents reporting that their children with disabilities "definitely won't" attend postsecondary school or graduate from a 4-year college have occurred to similar degrees among both white and African-American students (7 percentage points for both groups regarding postsecondary education enrollment and 20 and 23 percentage points, respectively, regarding college graduation). No changes are apparent for Hispanic students.
- In Wave 2, parents' expectations related to their children's future education are similar across racial/ethnic groups.

## Family Support for Education at Home

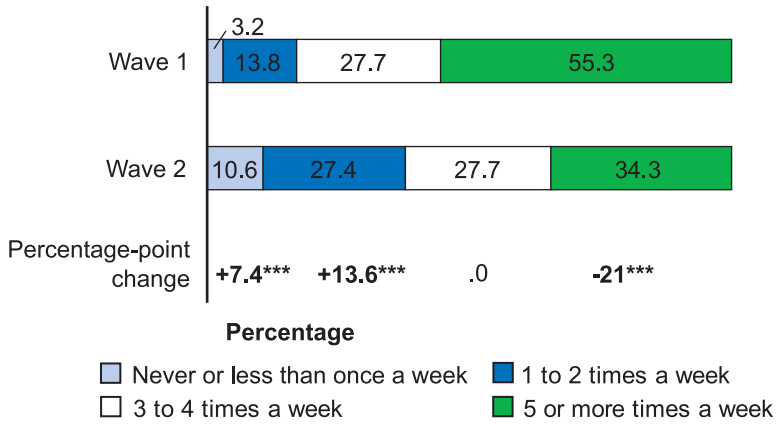
In addition to having expectations related to their children's educational attainment, parents may be involved in supporting their children's education at home in multiple ways, including talking with them about school, reading with them, having family rules about homework and TV watching, and providing computers for educational purposes. This section describes the extent to which several aspects of family involvement at home have changed in a 2-year period.

- Some aspects of family support for education at home have not changed as children age. The frequency with which parents talk with their children about school has remained the same; in Wave 2, 90% of students with disabilities having regular conversations about school.
- The frequency of having rules related to doing homework and to going to bed at specific times on school nights also are unchanged. In Wave 2, 96% of students have parents who report having rules about doing homework, and 95% have parents who report having rules about appropriate bed times on a school night.
- Other types of home-based involvement, such as helping with homework, reading with children, having rules related to acceptable grades, and having a computer in the home have changed as students aged, as noted below.

### Helping with Homework

- Overall, parents of students with disabilities are less involved in helping with homework as their children age. In this, they mirror their peers in the general population (Catsambis & Garland, 1997; Cooper et al., 2000; Dauber & Epstein, 1994).
- There has been a 21-percentage-point decrease in students receiving homework help five or more times a week (Exhibit 4-4), resulting in 21% of students receiving frequent homework assistance in Wave 2.

**Exhibit 4-4**
**Changes in the Frequency of Families Helping with Homework**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

- There has been a corresponding increase in the percentages receiving infrequent help with homework, with a 7-percentage-point increase in those helped less than once a week and a 14-percentage-point increase in those helped one or two times a week. In Wave 2, 27% of students receive homework assistance between one to two times a week, and 11% receive help less than once a week.

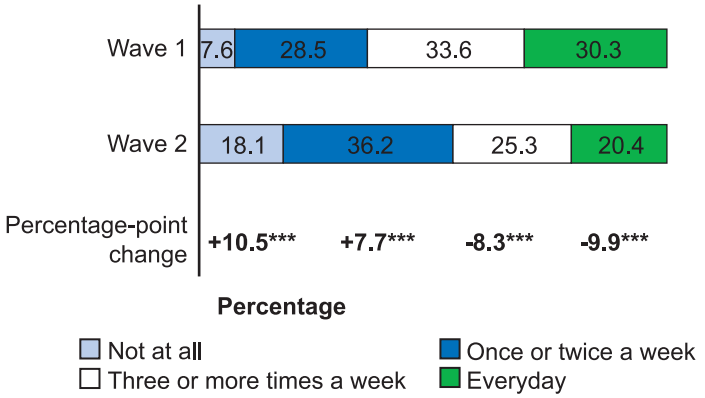
### Reading with Children

Reading with children at home has been found to improve their literacy skills (National Center for Education Statistics, 1998). As students get older, family members are less likely to read with them frequently (Exhibit 4-5). This decline in frequency of reading with students parallels the decrease in the rate of helping with homework.

There has been a 10-percentage-point decrease in parents reading with children every day, and an 8-percentage point decrease in reading together three or more times a week. In Wave 2, 20% of students have parents who read with them every day, and another one-quarter are read to three or more times a week.

In Wave 2, students are more likely not to read with parents at all, or to read with parents only once or twice a week. More than one-third (36%) read with parents once or twice a week, and 18% never read with parents, resulting from 7-percentage-point and 10-percentage-point increases between Wave 1 and Wave 2.

**Exhibit 4-5**
**Changes in the Frequency of Families Reading with Children**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

## Household Rules

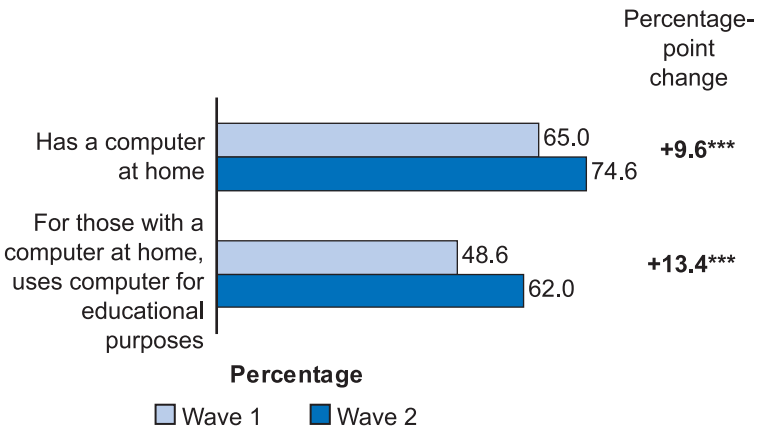
Maintaining a home environment that encourages behaviors that are conducive to learning is an important way for parents to demonstrate their support for education (Epstein, 2001).

- The frequencies with which families have rules related to doing homework and going to bed at specific times on school nights are unchanged across the two waves. In Wave 2, 96% of students with disabilities have parents who report having rules about doing homework, and 95% have parents who report having rules about appropriate bed times on a school night.
- However, having rules related to acceptable grades has changed as students age. Families are more likely to have rules about getting a certain grade point average in school, now that students are 2 years older. In Wave 2, 51% of students have family rules related to grades, resulting from a 6-percentage-point increase over time.

## Having a Home Computer

A supportive home environment provides the tools necessary for homework tasks, such as access to a computer. Students are more likely to have a home computer and use it for educational purposes as they age (Exhibit 4-6).

**Exhibit 4-6**
**Changes in Use of Home Computer for Educational Purposes**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

- There has been a 10 percentage-point-increase in the rate of computer ownership over a 2-year period, with three-quarters of students with disabilities having a computer in their household at Wave 2.
- Among students with a home computer, there has been a 13-percentage-point increase in their use of those computers for educational purposes. In Wave 2, approximately two-thirds of students (62%) use their home computer for education-related purposes.

## Differential Changes in Family Support for Education at Home across Disability Categories

Changes in family involvement in supporting their children's education varies across disability categories (Exhibit 4-7).

- Students in most disability categories have experienced large decreases in the frequency of being helped with homework and being read to by their parents, ranging from 15 to 24 percentage points. Only those with autism or traumatic brain injury have not experienced a change in the frequency of these kinds of family support.
- In Wave 2, students with emotional disturbances are the least likely to have parents who help with homework or read to them frequently (30% and 16%, respectively), and students with autism are the most likely to have these forms of family support (47% and 31%).

**Exhibit 4-7**
**Changes in Family Support for Education at Home, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage with parents reporting students: | | | | | | | | | | | |
| Are helped with homework five or more times a week | | | | | | | | | | | |
| Wave 1 | 56.8 | 53.9 | 56.4 | 48.6 | 54.9 | 52.5 | 55.8 | 56.5 | 53.8 | 48.1 | 62.9 |
| Wave 2 | 33.1 | 33.5 | 41.9 | 30.1 | 31.8 | 35.8 | 40.8 | 36.6 | 47.2 | 45.8 | 38.8 |
| Percentage-point change | -23.7*** | -20.4*** | -14.5** | -18.5*** | -23.1*** | -16.7** | -15.0** | -19.9*** | | | +24.1*** |
| Are read to every day | | | | | | | | | | | |
| Wave 1 | 26.8 | 34.4 | 29.6 | 24.7 | 31.1 | 34.8 | 37.1 | 33.2 | 37.4 | 26.0 | 35.2 |
| Wave 2 | 17.1 | 22.1 | 28.4 | 15.6 | 19.4 | 21.7 | 25.2 | 20.1 | 31.1 | 22.2 | 25.9 |
| Percentage-point change | -9.7*** | -12.3*** | -1.2 | -9.1** | -11.7*** | -13.1** | -11.9** | -13.1*** | | | +9.3* |
| Have rules about acceptable grades | | | | | | | | | | | |
| Wave 1 | 44.8 | 48.4 | 42.0 | 50.8 | 40.5 | 41.2 | 42.9 | 31.8 | 15.4 | 41.3 | 32.9 |
| Wave 2 | 52.1 | 52.2 | 47.8 | 57.4 | 48.6 | 51.5 | 45.8 | 42.3 | 19.7 | 49.8 | 34.6 |
| Percentage-point change | | | | | | | | +10.5** | | | |
| Of those with a home computer, percentage using it for educational purposes | | | | | | | | | | | |
| Wave 1 | 47.4 | 52.6 | 35.9 | 40.0 | 59.2 | 48.1 | 57.8 | 59.6 | 61.7 | 44.5 | 34.9 |
| Wave 2 | 60.3 | 71.4 | 42.3 | 49.6 | 68.0 | 61.0 | 64.8 | 69.1 | 65.5 | 49.0 | 41.9 |
| Percentage-point change | +12.9*** | +18.8*** | | +9.6* | | +12.9* | | +9.5* | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- Only students with other health impairments are more likely at Wave 2 than Wave 1 to have rules related to attaining a specific grade point average. In Wave 2, 45% of students with other health impairments have this type of family rule, a 10-percentage-point increase over Wave 1.
- In Wave 2, students with emotional disturbances are the most likely and students with autism the least likely to have rules about grades (57% and 20%).
- Students in several disability categories have experienced sizable increases in their use of home computers for educational purposes. Increases of 9 to 19

percentage points are noted for students with learning disabilities; emotional disturbances; or speech, hearing, or other health impairments.

- Students with speech impairments are the most likely in Wave 2 to use a home computer for educational purposes (71%) and students with mental retardation or multiple disabilities are the least likely to do so (42%).

## Differential Changes in Family Support for Education at Home across Demographic Groups

**Age.** Many changes in family support for education at home have occurred differentially across age groups (Exhibit 4-8).

**Exhibit 4-8**
**Changes in Family Support for Education at Home, by Student's Age**

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Percentage helped with homework five or more times a week | | | |
| Wave 1 | 62.4 | 52.1 | 41.5 |
| Wave 2 | 46.4 | 27.0 | 17.3 |
| Percentage-point change | -16.0*** | -25.1*** | -24.2*** |
| Percentage read to every day | | | |
| Wave 1 | 39.8 | 24.4 | 20.2 |
| Wave 2 | 29.5 | 14.8 | 8.9 |
| Percentage-point change | -10.3*** | -9.8*** | -11.3*** |
| Percentage having family rules related to acceptable grades: | | | |
| Wave 1 | 39.7 | 46.8 | 54.0 |
| Wave 2 | 42.6 | 55.4 | 59.8 |
| Percentage-point change | | +8.6** | |
| Of those with a family computer, percentage using it for educational purposes | | | |
| Wave 1 | 45.8 | 51.4 | 44.4 |
| Wave 2 | 59.7 | 63.4 | 64.2 |
| Percentage-point change | +13.9*** | +12.0*** | +19.8** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: **p<.01, ***p<.001.

- Helping with homework frequently has declined across the age span, with changes being particularly large among older children. The decrease in helping with homework five or more times a week range from 16 percentage points for those 7 to 9 years old in Wave 1 and 24 and 25 percentage points for older students.
- The decrease in reading with children every day is 10 or 11 percentage points for all age groups.

- Consistent with their peers in the general population, older students are consistently less likely to be read to or helped with homework frequently. In Wave 2, 46% of the youngest students are helped with homework five or more times a week compared with 17% of the oldest students. Almost one-third (30%) of the youngest students are read to daily, compared with 9% of the oldest.
- The significant increase in students with disabilities having family rules related to attaining a specific grade point average that is noted for students with disabilities as a whole has occurred entirely among students who were 10 to 12 years old in Wave 1. They have experienced a 9-percentage-point increase, resulting in 55% having these types of rules at Wave 2.
- Older students are more likely than younger students to have this type of family rule. At Wave 2, almost 60% of the oldest students have parents who report having rules related to grades, compared with 43% of the youngest students.
- All age groups have experienced increases in using a family computer for educational purposes, ranging from 12 percentage points for those who were 10 to 12 in Wave 1, to 20 percentage points for those who were 13 or 14. At Wave 2, the percentage of students using computers in this way ranges from 60% for the youngest students to 64% for the oldest.

**Household income**. Some changes in family support for education at home have occurred differentially across income and racial/ethnic groups (Exhibit 4-9).

- Helping with homework frequently has declined for students in all incomes groups. However, decreases ranging from 19 percentage points for the lowest-income group to 24 percentage points for the highest income group result in lower-income students being more likely to have frequent homework help in Wave 2 than students in the highest income group (38% vs. 29%).
- Seven- to 13-percentage- point decreases are noted across income groups in students reading with parents daily. These decreases have opened a gap between the highest and lowest income groups in this form of family support in Wave 2 that did not exist in Wave 1, favoring lower-income students (23% vs. 17%).

**Exhibit 4-9**
**Changes in Support for Education at Home, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage helped with homework five or more times a week | | | | | | |
| Wave 1 | 56.7 | 55.5 | 52.5 | 53.9 | 66.3 | 47.3 |
| Wave 2 | 37.6 | 33.7 | 29.2 | 32.6 | 43.0 | 31.5 |
| Percentage-point change | -19.1*** | -21.8*** | -23.3*** | -21.3*** | -23.3*** | -15.8* |
| Percentage read to every day | | | | | | |
| Wave 1 | 29.9 | 30.5 | 30.0 | 29.7 | 31.3 | 28.9 |
| Wave 2 | 23.2 | 20.4 | 17.0 | 19.4 | 26.3 | 18.2 |
| Percentage-point change | -6.7* | -10.1* | -13.0*** | -10.3* | | |
| Percentage having a family rule related to acceptable grades | | | | | | |
| Wave 1 | 53.9 | 37.6 | 40.4 | 35.7 | 66.6 | 53.5 |
| Wave 2 | 56.1 | 45.6 | 48.1 | 45.9 | 63.2 | 57.6 |
| Percentage-point change | | +8.0* | | +10.2*** | | |
| Of those with a family computer, percentage using the computer for educational purposes | | | | | | |
| Wave 1 | 24.9 | 49.2 | 75.5 | 59.8 | 26.7 | 26.3 |
| Wave 2 | 39.3 | 67.4 | 84.4 | 72.3 | 41.3 | 42.7 |
| Percentage-point change | +14.4*** | +18.2*** | +8.9** | +12.5*** | +14.6** | +16.4* |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- Although only students in the mid-income level have experienced a significant increase in having parental rules related to attaining a specific grade point average (8 percentage points), students in low-income families are more likely than others to have this type of rule. In Wave 2, 56% of those in families with incomes of less than $25,000 have this type of family rule, compared with 46% of those with incomes between $25,001 and $50,000, and 48% of those with incomes of more than $50,000.
- Students at all income levels have experienced increases in using a home computer for educational purposes, with the increase being smallest among students in the highest income group (9 percentage points vs. 14 and 18 percentage points for students in the lowest and middle income groups). Higher-income students were already more likely than others to use a computer in Wave 1, and their smaller increase did little to narrow the gap between income groups. More than four of five students (84%) in the highest income group use their home computer for educational purposes, compared with 67% of those in the middle income group, and 39% of those in the lowest income group.

**Racial/Ethnic background.** Changes in aspects of family support for education at home have occurred differentially across racial/ethnic groups, mirroring those noted for income differences (Exhibit 4-9).

- The frequency of helping with homework has declined for students in all racial/ethnic groups. Decreases range from 16 percentage points among Hispanic students to 23 percentage points for African-American students. In both waves, African-American students are more likely to be helped with homework at least five times a week than white students (43% vs. 33% in Wave 2).
- Only white students have experienced a significant decline in the likelihood of being read to daily by parents (10 percentage points). With this decline, in Wave 2 white students are less likely than African-American students to read with parents daily (19% vs. 26%), a difference that was not apparent in Wave 1.
- Although they are the least likely to have family rules related to grades, white students are the only racial/ethnic group to have experienced an increase in having this type of rule (10 percentage points). In Wave 2, 46% of white students have rules about attaining a specific grade point average, compared with 63% of African-American students and 58% of Hispanic students.
- Students in all racial/ethnic groups are more likely to use a home computer for educational purposes as they age, with increases ranging from 13 to 16 percentage points. Although their increase is the smallest, in both waves, white students with disabilities are more likely than their African-American or Hispanic peers to use a home computer in this way. In Wave 2, 72% of white students with disabilities who have a home computer use it for educational purposes, compared with 41% of African-American and 43% of Hispanic students.

## Summary

This chapter has examined changes in both parents' expectations related to their children's educational attainment and in family involvement in their children's education. Overall, expectations for students with disabilities achieving various educational milestones have remained the same over time. Students who were expected to graduate from high school, attend a postsecondary school, or graduate from a 2- or 4-year college in Wave 1 continue to be expected to attain these educational goals.

However, changes are noted for students who are not expected to achieve these education markers. Parents of students who are not expected to attend or graduate from a postsecondary school have become more pessimistic as their children grow older. There is a consistent increase in the percentages whose parents say they "definitely won't" attend or graduate from postsecondary

school, with a concurrent decrease in those whose parents say they "probably won't." This is true for students in all disability categories, but with the size of the increase of those who "definitely won't" attend or graduate varying widely across categories. The increases in students whose parents say they "definitely won't" attend or graduate tend to be the largest for those with autism, mental retardation, traumatic brain injuries, or multiple disabilities and smallest for those with visual or speech impairments. The increased pessimism regarding students with disabilities attending or graduating from a secondary school tends to be the most apparent for students from lower-and middle-income families.

Although some aspects of family involvement in children's education at home, such as the frequency with which parents talk with their children about school, have not changed as children age, other types of home-based involvement, such as helping with homework and reading with children, have changed. Overall, parents of students with disabilities are less involved in helping with homework and reading with their children in Wave 2 than Wave 1. This decline in the frequency students with disabilities receive help with homework and are read to as they age mirrors the experiences of their peers in the general population.

The majority of students with disabilities in both waves have family rules related to doing homework and to going to bed at specific times on a school night, with no change over time. When students are older, families are more likely to report having rules related to acceptable grades, and students are more likely to have home computers and use them for educational purposes.

Changes in family support for education at home varies across disability categories. Although students in most disability categories have experienced large decreases in the frequency of being helped with homework and being read to by parents, those with autism or traumatic brain injuries have not experienced a change in these kinds of support. Only those with orthopedic impairments have experienced increases in having family rules related to acceptable grades.

Family involvement in education at home has changed differentially across age groups. Helping with homework frequently has declined across the age span, but changes are most apparent for older children. The increase in students with disabilities having family rules related to attaining a specific grade point average has occurred entirely among students who were 10 to 12 years old in Wave 1, although older students are more likely than younger students to have this type of family rule.

Differential changes in aspects of family support for education at home across income and racial/ethnic groups has resulted in Wave 2 in changes in between-group relationships. Decreases in helping with homework frequently and reading with students are noted across income and racial-ethnic groups, but the smaller decreases for those in the lower income group, as well as for African-American students, result in lower-income students and African-American students being more likely to have frequent homework help and to be read to

daily at Wave 2. Conversely, higher-income students and white students are more likely to have a home computer for educational purposes.

Although the kinds of family expectations and involvement described here are important factors in understanding students' academic outcomes, their school experiences also play an important role. The next chapter describes changes in students' school enrollment and participation in special education.

# 5. Changes in School Enrollment and Student Services

*By Phyllis Levine*

A 2-year period can bring important changes in the school lives of students with disabilities.

This chapter focuses on the changes students with disabilities experience with regard to the schools they attend, their IEP process, and special education services continuation status during Waves 1 and 2 of SEELS. It also examines variations in the types of services and supports students receive.

Over the course of 2 years, students with disabilities experience changes typical to most children this age. For example, some students change schools because families move or their changing grade level takes them from elementary to middle or middle to high school, usually after 5th or 6th grade. Moving from one school to another involves acclimating to a new school environment, including new teachers, classmates, rules and expectations. Some students benefit from special education services to the degree that they no longer have Individual Education Programs (IEPs) and become general education students. As they progress to higher grade levels, some may experience new learning challenges that require changes in the services called for in their IEPs. Some students with disabilities cope well with these transitions, others find the changes to be particularly challenging. It is important to understand how schools and services evolve for students with disabilities so that they are well-prepared for each transition as it arrives.

The following sections highlight changes in a 2-year period in students' school mobility, special education status, and the IEP process. It includes information about the types of services and supports students receive, including those from or through their school or district. Findings are reported for students with disabilities as a whole and for students who differ in their primary disability category, age, and selected demographic characteristics when significant.

## School Enrollment

- Across Waves 1 and 2, nearly all students with disabilities continue to attend public schools[1] (98% and 97%, respectively; Exhibit 5-1). The majority of students also continue to attend regular school that serve a wide range of

[1] SEELS students were chosen from rosters of students receiving special education from or through public school districts. Districts were instructed to include all students for whom they were responsible, regardless of where they went to school or the type of school attended (e.g., a residential school in another state). Despite these instructions, it is possible that districts underreported students served in such placements, thereby increasing the proportion of students reported to be attending public schools.

**Exhibit 5-1**
**Changes in Type of Schools Attended by Students with Disabilities**

| | Wave 1 | Wave 2 | Percentage-Point Change |
|---|---|---|---|
| **Percentage attending a:** | | | |
| Public school | 98.2 | 97.4 | |
| Regular school serving a wide range of students | 94.9 | 92.4 | -2.5* |
| Neighborhood school | 78.8 | 74.3 | -4.5* |
| Special school serving only students with disabilities | 2.1 | 2.9 | |
| Magnet school | 1.7 | 1.8 | |
| Charter school | .3 | .9 | |
| Alternative school | .6 | .9 | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level: * p < .05.

students, although the 92% who do so in Wave 2 is a small, but significant decline from the 95% who attended regular schools in Wave 1.

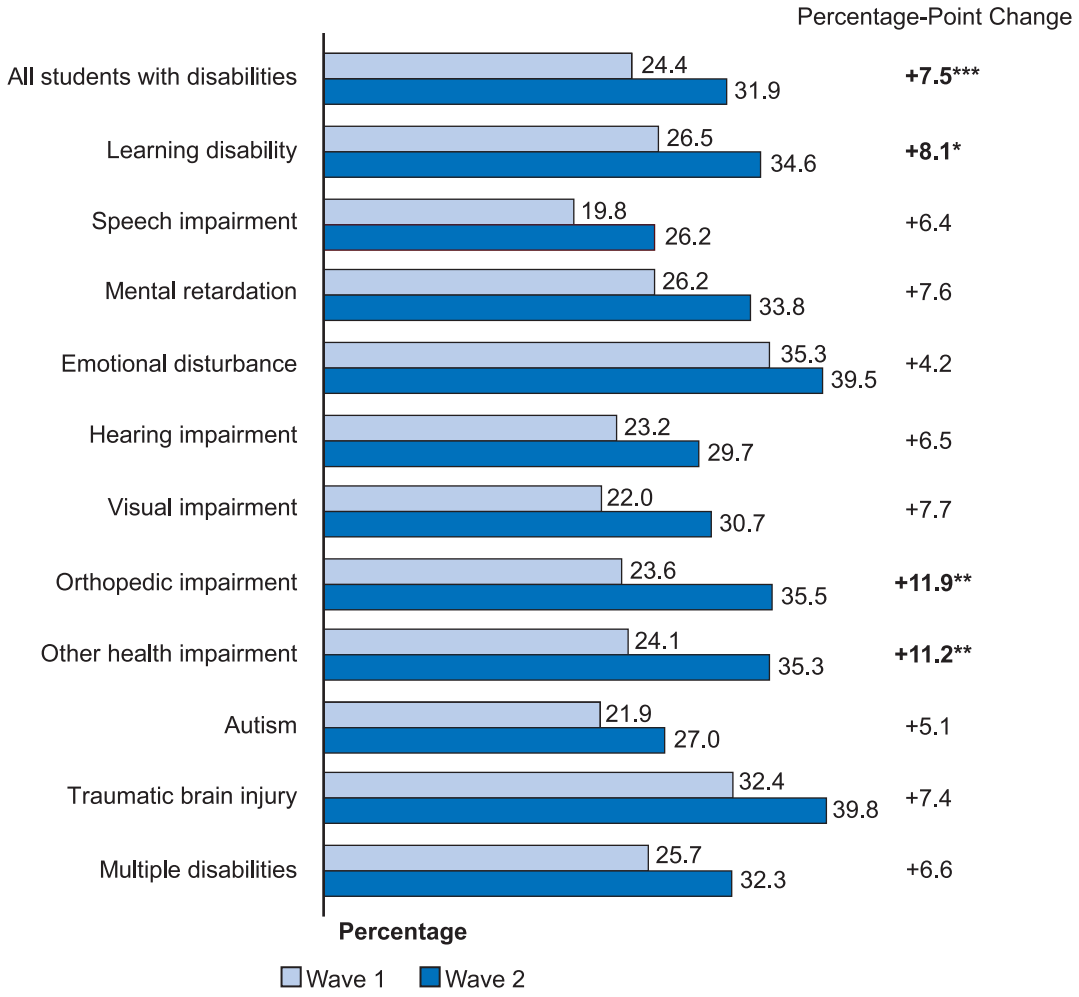
- Consistent with a decline in enrollment in regular schools, a 4-percentage-point decrease also is noted in students with disabilities attending neighborhood schools. This may be due, in part, to the transition to middle school.
- Those who left regular and/or neighborhood schools are dispersed among other kinds of schools (e.g. special, magnet, charter school, or alternative school) so that no one kind of school shows a marked increase in enrollment. The slight decline in attendance at regular schools has occurred only among students with emotional disturbances (8 percentage points) or other health impairments (5 percentage points).
- Only students with learning disabilities have experienced the decline in attending neighborhood schools noted for students with disabilities as a whole (6 percentage points).
- Only students with disabilities living in households with incomes of $25,000 or less have experienced a decline in attending regular schools (4 percentage points).
- The decline in attending neighborhood schools has occurred entirely among students with disabilities living in households with incomes of more than $50,000 (7 percentage points) and among those who are white (5 percentage points).

## School Mobility

In a 2-year period, many students with disabilities would be expected to change schools, some because natural grade-level progression takes them from elementary to middle school or from middle to high school, others because of family moves or other reasons.

- Almost one-third of students with disabilities are spending their first year in a new school in Wave 2, an increase from the one in four students who were doing so in Wave 1 (Exhibit 5-2).
- The increase in the likelihood that students with disabilities are spending their first year in a new school is apparent for students with learning disabilities, mental retardation, or orthopedic or other health impairments, with increases ranging from 8 to 12 percentage points.
- Students with emotional disturbances or traumatic brain injuries were the most likely to be new to their schools in both Wave 1 (35% and 32%, respectively) and Wave 2 (40%). In both waves, students with speech impairments or autism were the least likely to be spending their first year in a new school (20% and 22% in Wave 1, 26% and 27% in Wave 2).

**Exhibit 5-2**
**Changes in Students with Disabilities Attending New Schools, by Disability Category**




Source: SEELS parent interviews, Waves 1 and Wave 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < 0.05; ** p < .01; *** p < .001.

- The increase in students' changing schools results largely from their changing grade levels (Exhibit 5-3). Almost half of students who were attending a new school in Wave 1 had parents who attributed the move to a change in grade level (48%), compared with 62% of students in Wave 2, a 14-percentage-point increase.
- Wave 1 fourth or fifth graders were the only group more likely to spend their first year in a new school by Wave 2 (24 percentage points). In Wave 1, 18% of these students had experienced a change in schools between third and fourth or fourth and fifth grades. In Wave 2, 42% are spending their first year in a new school, having changed schools between fifth and sixth or sixth

and seventh grades, years when students typically transition from elementary to middle school.

**Exhibit 5-3**
**Changes in Reasons for Recent School Mobility among Students with Disabilities**

| | Wave 1 | Wave 2 | Percentage-Point Change |
|---|---|---|---|
| Percentage whose parents report students spending their first year in a new school changed schools due to: | | | |
| Grade-level progression | 47.9 | 61.7 | +13.8*** |
| Family move | 25.3 | 18.7 | |
| Change in household or living situation | 3.4 | 1.3 | |
| Family chose different school | 13.0 | 9.4 | |
| School system assigned child to different school | 8.6 | 10.6 | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level: *** p < .001.

- Consistent with this, the entire increase in grade-level change as a reason for school mobility has occurred among students who were in fourth or fifth grades in Wave 1; 71% of those students who are spending their first year in a new school are reported by parents to have changed schools due to grade-level progression, up from 18% in Wave 1. Correspondingly, there are marked declines in these students changing schools because of family moves or other reasons.
- According to parents, students with disabilities represented in SEELS have made an average of 1.6 moves since starting kindergarten. However, this masks wide variation in school mobility. About 3 out of 10 students with disabilities have never changed schools, and 45% have made one or two school changes. Parents report that 19% of their children have made three or four school moves, and 6% have made five school changes or more. Although the effects of these changes vary among children, frequent school changes can be detrimental to both their academic and emotional development (Fowler-Finn, 2001) and high mobility rates create added challenges for schools (Kerbow, 1996; Stover, 2000).

## Differential Changes in School Mobility across Disability Categories

Across the disability categories, students have experienced school mobility differently.

- Increased numbers of students have changed schools due to grade-level progression in seven disability categories (Exhibit 5-4). The largest increase

(42 percentage points) is noted among students with visual impairments, making them the category of students most likely to change schools for this reason in Wave 2 (75% do so).

- In Wave 2, students with emotional disturbances are the least likely to have changed schools because of grade-level progression (47%).

**Exhibit 5-4**
**School Mobility, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage whose parents report students spending their first year in a new school changed schools due to: | | | | | | | | | | | |
| Grade-level progression | | | | | | | | | | | |
| Wave 1 | 58.6 | 39.3 | 48.4 | 27.3 | 33.3 | 33.6 | 44.8 | 52.8 | 31.6 | 32.4 | 33.5 |
| Wave 2 | 62.3 | 67.7 | 56.1 | 47.1 | 58.4 | 75.1 | 64.1 | 59.2 | 57.0 | 56.6 | 54.6 |
| Percentage-point change | | +28.4** | | +19.8** | +25.1** | +41.5*** | +19.3* | | +25.4*** | | +21.1** |
| Family move | | | | | | | | | | | |
| Wave 1 | 23.6 | 30.9 | 22.7 | 23.2 | 26.3 | 22.0 | 33.9 | 20.2 | 21.8 | 14.8 | 19.1 |
| Wave 2 | 20.8 | 14.8 | 19.6 | 22.8 | 12.8 | 15.3 | 21.0 | 17.3 | 15.6 | 23.8 | 15.8 |
| Percentage-point change | | -16.1* | | | -13.5* | | | | | | |
| Percentage reporting number of school changes since starting kindergarten | | | | | | | | | | | |
| None | 25.0 | 42.5 | 20.1 | 15.3 | 33.4 | 29.9 | 28.6 | 23.7 | 25.1 | 19.1 | 21.5 |
| 1 or 2 | 46.8 | 43.6 | 47.0 | 35.9 | 41.5 | 49.6 | 50.3 | 49.4 | 47.1 | 44.5 | 43.2 |
| 3 or 4 | 22.2 | 11.9 | 24.9 | 26.3 | 20.9 | 16.7 | 15.8 | 18.9 | 21.4 | 24.3 | 25.5 |
| 5 or more | 6.0 | 2.1 | 8.0 | 22.6 | 4.2 | 3.8 | 5.3 | 8.1 | 6.4 | 12.1 | 9.8 |
| Mean number of school changes | 1.7 | 1.1 | 2.0 | 2.8 | 1.5 | 1.5 | 1.5 | 1.8 | 1.8 | 2.1 | 2.0 |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: * p < .05, ** p < .01, *** p < .001.

- The decline in students with disabilities changing schools because of a family move has occurred only among children with speech or hearing impairments.
- Students with speech impairments have made considerably fewer school changes than their peers in every other disability category. Parents of children with speech impairments report that 42% have never changed schools, compared with 15% of children with emotional disturbances, 19% and 20% of children with traumatic brain injuries or mental retardation,

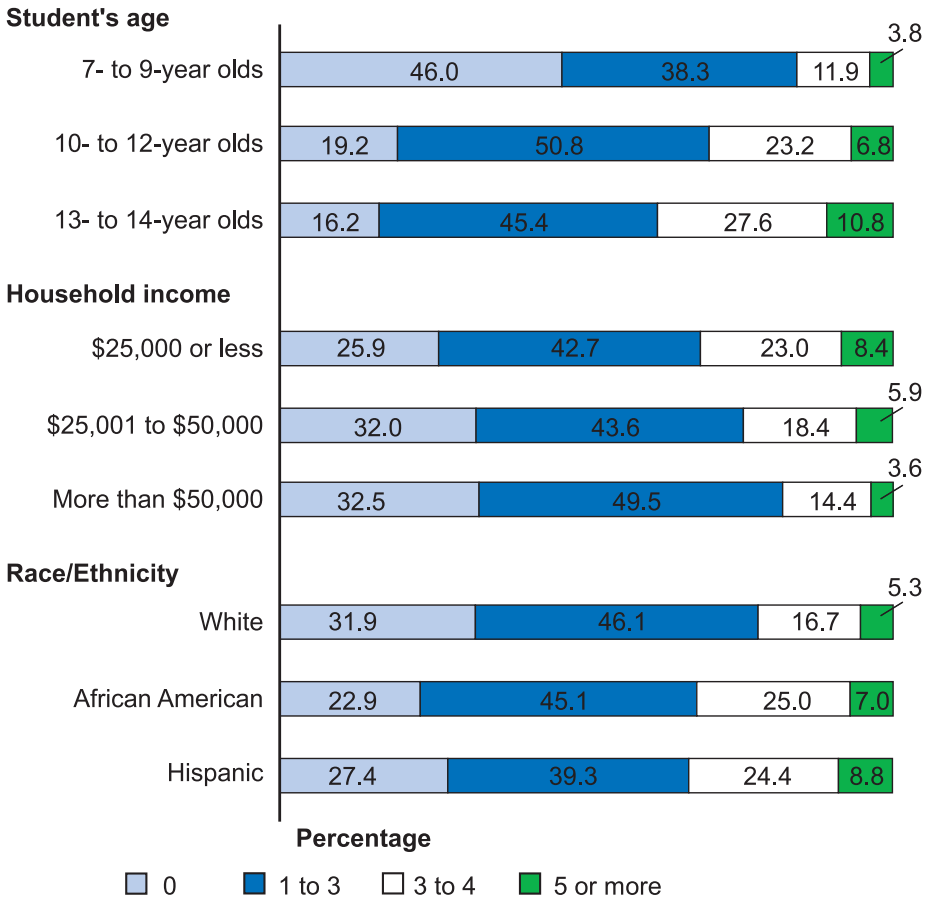
respectively, and 33% of children with hearing impairments. On average, students with speech impairments have made 1.1 school changes.

- One or two school moves are common for students in most disability categories (ranging from 42% of students with hearing impairments to 50% of students with orthopedic impairments).
- Students with emotional disturbances have made the greatest number of school changes; 23% are reported to have made five or more moves to new schools. On average, students with emotional disturbance make 2.8 school changes, almost twice the average of students with most other disabilities.

## Differential Changes in School Mobility across Demographic Groups

- As expected the youngest students have experienced the fewest school changes, 46% are reported to have none compared with 19% and 16% of the middle and oldest two groups respectively (Exhibit 5-5). About half of each of the older student groups have experienced one or two school moves, one-quarter of each group have changed schools three or four times, and 10% of the oldest students have changed school five or more times since beginning elementary school.
- On average, children living in the highest income households have made 1.4 school changes, compared with an average of 1.9 school changes made by children in the lowest-income households. Students with disabilities living in the lowest-income households are more likely than their wealthier peers to have changed schools three or four times (23% vs. 14%), and five times or more (8% versus 4% respectively).
- African-American students with disabilities are more likely than their white peers to have changed schools three or four times (25% vs. 17%) and less likely to have experienced no moves at all (23% vs. 32%).

**Exhibit 5-5**
**Number of School Changes since Starting Kindergarten among Students with Disabilities, by Student's Age, Income, and Race/Ethnicity**



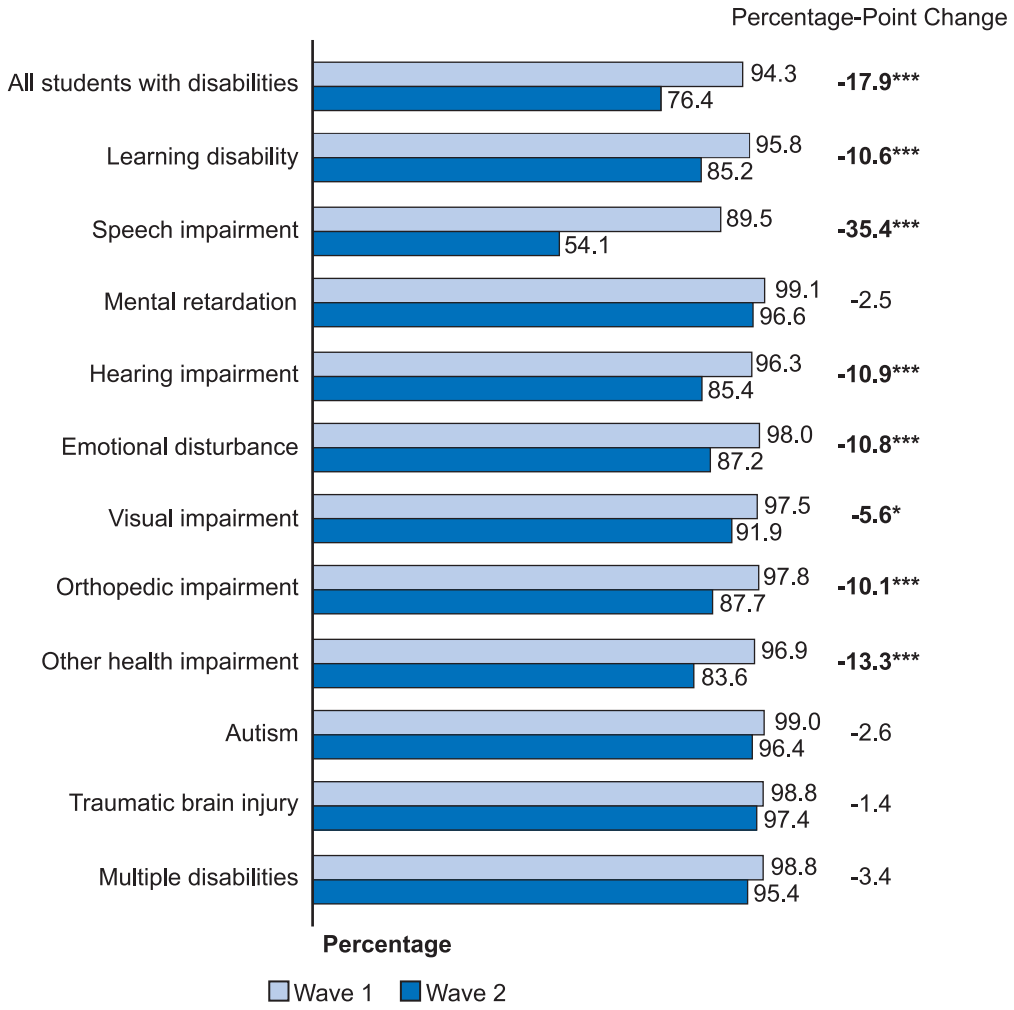

Source: SEELS parent interviews, Waves 1 and 2.

## Special Education Participation and Services

Although special education has been dubbed "a one-way street" down which "it's relatively easy to send children…but they rarely return" (Finn, Rotherham, & Hokanson, 2001, p. 339), a number of students with disabilities discontinue their special education programs each year.

- All students with disabilities represented in SEELS had received special education services at some time during the 1999-2000 school year. By the end of that year, 94% still were receiving special education services, according to parents (an exit rate of 6%). By the end of the 2001-02 school years, parents of 76% of students with disabilities reported they were still receiving special education services, a cumulative exit rate of 24% (Exhibit 5-6).

**Exhibit 5-6**
**Changes in Students Continuing to Receive Special Education Services, by Disability Category**




Source: SEELS parent interviews, Waves 1 and Wave 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

- Only 1% of students with disabilities in the SEELS age range have a plan to receive accommodations for a special needs, as authorized under Section 504 of the Vocational Rehabilitation Act (referred to as a "504 plan), as an alternative to receiving special education services.

## Differential Changes in Special Education Participation across Disability Categories

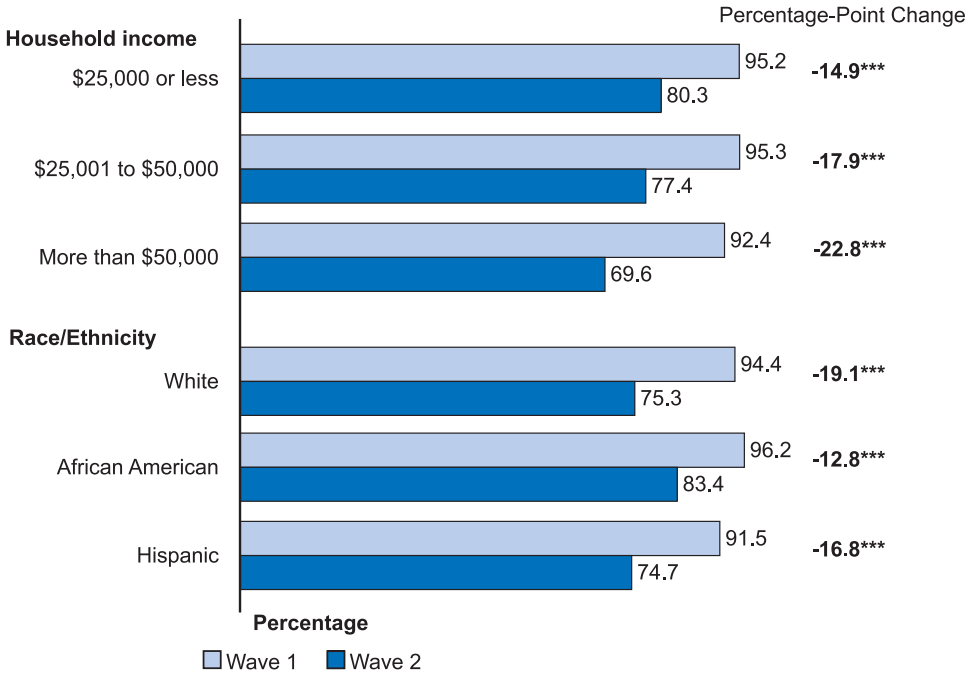
- Some students in every disability category are reported by parents to have exited special education.

- Students with speech impairments have experienced by far the greatest decline in special education participation; in Wave 2, only 54% of students who had received special education services in the 1999-2000 school year still are, an exit rate of 46%.
- Wave 2 continuation rates range from 84% to 88% for students with learning disabilities; emotional disturbances; or hearing, orthopedic, or other health impairments.
- In Wave 2, 92% of students with visual impairments continue to receive special education services, as do 95% or more of students with mental retardation, autism, traumatic brain injuries, or multiple disabilities.

### Differential Changes Special Education Status across Demographic Groups

- Rates of continuing to receive special education services were uniform across age groups, ranging from 74% of students with disabilities who were ages 7 through 9 in Wave 1 to 81% of those who were 13 to 14.
- Students with disabilities from lower-income households have continued to receive special education services at much higher rates than their wealthier peers (Exhibit 5-7). In Wave 2, 80% of students living in households with annual incomes of $25,000 or less are still receiving services, compared with 70% of students living in households with annual incomes more than $50,000.

**Exhibit 5-7**
**Students Continuation in Their Special Education Programs, by Students' Demographic Characteristics**




Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
*** p < .001.

- In Wave 1, special education services were received by similar proportions of white, African-American, and Hispanic students (92% to 96%); in Wave 2 African-American students are more likely still to be receiving services (83%) than are their white or Hispanic peers (75%).

## IEP Process

The Individuals with Disabilities Education Act (IDEA) Amendments of 1997 are intended "to ensure that all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs" [IDEA '97 Final Regulations, Section 300.1(a)]. The process of developing an individualized education program (IEP) for each child who is found eligible for special education and related services is the mechanism through which his or her unique needs are identified and an education program is crafted to meet them. Further, "the IDEA Amendments of 1997 require that parents have an opportunity to participate in meetings with respect to the identification, evaluation, and educational placement of the child and the provision of FAPE (i.e., a free appropriate public education)

to the child or on behalf of the child (National Dissemination Center for Children with Disabilities, NICHCY, 1999, p. 7).

### Parents' Attendance at IEP Meetings

The majority of students with disabilities children with disabilities represented in SEELS have parents who attend IEP meetings.

In Wave 1, 93% of parents had reported attending an IEP meeting at some point during the current or preceding school year. An 8-percentage-point decline is noted in attendance at IEP meetings during a 2-year period; in Wave 2, 86% of students with disabilities have parents who reported they had done so.

### IEP Goals Development

IEP goals typically are determined by IEP teams comprised of family members, teachers, school staff, related service personnel, and sometimes the student.

- SEELS findings indicate that goal-setting in IEP meetings has become more collaborative as students have aged. In Wave 2, 71% of students with disabilities have parents who report IEP goals are determined by family members and school staff together, a 6-percentage-point increase over Wave 1. There is a corresponding 6-percentage point decline in school-staff-driven goals (33% to 27%).
- In both Waves 1 and 2, few students with disabilities have their educational goals decided primarily by family members (1% and 2% in the two waves), with no differences for students in different disability categories or demographic groups.

### Differential Changes in IEP Participation across Disability Categories

- The decrease in parents attending IEP meetings that is noted for students with disabilities as a group is consistent across disability groups, although the change is greatest for students with learning disabilities (10 percentage points, Exhibit 5-8).
- The overall trend toward more collaborative IEP goal development results from an increase in shared decision-making only among students with mental retardation, among whom there has been an 11-percentage point decrease in staff-driven IEP goal setting and a 9-percentage-point in collaborative goal setting.

**Exhibit 5-8**
**Changes In IEP Participation, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage with parents attending an IEP meeting in the current or preceding school year | | | | | | | | | | | |
| Wave 1 | 93.7 | 91.3 | 95.3 | 92.7 | 95.0 | 96.7 | 97.6 | 96.4 | 98.0 | 96.4 | 94.0 |
| Wave 2 | 83.6 | 84.4 | 89.4 | 87.6 | 89.8 | 91.1 | 91.2 | 91.2 | 92.8 | 88.2 | 86.7 |
| Percentage-point change | -10.1*** | -6.9* | -5.9** | | -5.2* | -5.6* | -6.4** | -5.2* | -5.2** | | -8.3** |
| Percentage whose parents report IEP goals were decided by: | | | | | | | | | | | |
| Mostly school staff | | | | | | | | | | | |
| Wave 1 | 32.6 | 36.4 | 33.7 | 30.8 | 27.5 | 27.3 | 23.8 | 25.3 | 25.2 | 23.4 | 30.8 |
| Wave 2 | 26.2 | 31.7 | 22.9 | 27.7 | 27.3 | 22.9 | 21.1 | 24.8 | 21.5 | 20.7 | 24.8 |
| Percentage-point change | | | -10.8** | | | | | | | | |
| Families and staff together | | | | | | | | | | | |
| Wave 1 | 66.5 | 61.8 | 65.3 | 66.8 | 70.7 | 69.7 | 75.2 | 72.7 | 72.4 | 75.2 | 67.5 |
| Wave 2 | 72.3 | 66.5 | 74.3 | 71.1 | 71.0 | 74.2 | 76.7 | 72.0 | 75.3 | 76.5 | 72.3 |
| Percentage-point change | | | +9.0* | | | | | | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: * p < 05, ** p < .01, *** p < .001.

## Differential Changes in IEP Participation across Demographic Characteristics

- Declines in parents' IEP attendance have occurred among students of all age groups (Exhibit 5-9), although the decline has been largest among students who were 13 or 14 years old in Wave 1 (12 percentage points).
- Only students with disabilities who were ages 10 through 12 in Wave 1 show a decline in the IEP goal-setting process being school-staff driven. No increases in collaborative goal setting attain statistical significance.

**Exhibit 5-9**
**Changes In IEP Participation, by Students' Age**

| | Age in Wave 1 | | |
|---|---|---|---|
| | 7 through 9 | 10 through 12 | 13 or 14 |
| Percentage with parents attending an IEP meeting in the current or preceding school year | | | |
| Wave 1 | 94.0 | 92.9 | 93.4 |
| Wave 2 | 87.4 | 84.9 | 81.8 |
| Percentage-point change | -6.6** | -8.0*** | -11.6* |
| Percentage with parents reporting IEP goals mostly set by | | | |
| School staff | | | |
| Wave 1 | 32.9 | 33.4 | 30.9 |
| Wave 2 | 26.9 | 26.8 | 26.7 |
| Percentage-point change | | -6.6* | |
| Families and staff together | | | |
| Wave 1 | 65.5 | 65.3 | 68.5 |
| Wave 2 | 71.6 | 71.0 | 71.0 |
| Percentage-point change | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05, ** p < .01, *** p < .001.

- Decreased attendance at IEP meetings is evident for all income groups, ranging from 6 to 10 percentage points (Exhibit 5-10).
- Only students with disabilities in the lowest-income group have experienced an increase in collaborative IEP goal setting. A 9-percentage point increase in parents reporting that students' IEP goals are set by families and school staff together is accompanied by a 10-percentage-point decline in goals being set mostly by school staff.

**Exhibit 5-10**
**Changes In Participation in IEP Meetings , by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage of parents who attend an IEP meeting during 2-year period 1999-00 or 2001-02: | | | | | | |
| Wave 1 | 89.3 | 97.3 | 95.8 | 95.8 | 88.4 | 87.8 |
| Wave 2 | 80.8 | 87.4 | 89.4 | 89.8 | 76.7 | 77.4 |
| Percentage-point change | -8.5** | -9.9*** | -6.4** | -6.0*** | -11.7** | |
| Percentage with parents reporting IEP goals mostly set by: | | | | | | |
| School staff | | | | | | |
| Wave 1 | 34.9 | 30.9 | 32.0 | 32.1 | 32.3 | 37.9 |
| Wave 2 | 25.0 | 25.2 | 29.7 | 27.4 | 28.6 | 23.0 |
| Percentage-point change | -9.9** | | | | | -14.9* |
| Families and staff together | | | | | | |
| Wave 1 | 64.2 | 67.4 | 66.6 | 66.4 | 66.1 | 61.6 |
| Wave 2 | 73.0 | 72.6 | 68.5 | 70.9 | 67.9 | 76.0 |
| Percentage-point change | 8.8* | | | | | +14.4* |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: * p < .05, ** p < .01, *** p < .001.

- Both white and African-American students with disabilities show declines in their parents' attendance at IEP meetings. A 10-percentage-point decline for Hispanic students with disabilities does not attain statistical significance.
- Only Hispanic students with disabilities have experienced an increase in collaborative IEP goal setting, with an increase in shared goal setting of 15 percentage points being accompanied by a decrease of 14 percentage points in goals being set primarily by school staff.

## Related Services and Supports

Students come to school with a wide range of personal characteristics, family dynamics, and functional, cognitive, and social abilities that contribute to how they learn, how much they benefit from their school experiences, and how well they manage their transitions as they get older. Some children, particularly those with disabilities, need supports and interventions besides the traditional classroom experiences to be successful at school. Recognizing this fact, the Individuals with Disabilities Education Act Amendments of 1997 mandate that "all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living" [IDEA '97 Final Regulations, Section 300.1(a)] (U.S. Department of Education, 1999).

Parents are an important source of information about the full range of services children with disabilities receive because they are aware of services arranged for privately and those that may be provided by family members themselves (e.g., respite care, Exhibit 5-11). SEELS parents were asked whether their children with disabilities had received any of 15 services in the preceding 12 months and, if so, whether each service had been provided from or through their child's school or district.[2]

- In both waves, some students with disabilities were reported to be receiving none of the services investigated in SEELS; with twice as many students being reported to receive no services than in Wave 1 (21% vs.10%).
- Receipt of most kinds of services has not changed over the 2-year period between Waves 1 and 2. In Wave 2, 27% of students with disabilities receive tutoring; occupational therapy, special transportation, and case management each are received by 10% to 12% of students with disabilities; physical therapy, social work services, assistive technology devices and services, audiology services, and the help of a reader or interpreter are each received by 5% to 9% of students with disabilities. The families of 3% of students with disabilities receive respite care; nursing care and orientation and mobility services each are provided to 1% of students with disabilities.
- Only speech-language pathology services, diagnostic medical services, and orientation/mobility services show changes in rates of receipt by students with disabilities. Declines of 16 percentage points are noted in students with disabilities receiving speech-language pathology services at all and from or through their school. Declines in diagnostic medical services and orientation/mobility services are smaller (5 and 1 percentage points, respectively) and occur only in the rates of receipt overall; there are no changes in the rates at which students with disabilities receive these services from or through their school.

[2] The services investigated in SEELS include assistive technology services or devices, audiology services, medical services for diagnosis or evaluation related to a disability, nursing care, occupational therapy, orientation and mobility services, a personal assistant or aide, physical therapy, psychological or mental health services or counseling, a reader or interpreter, respite care, social work services, speech-language pathology services, transportation because of a disability, tutoring, and vocational services. Each service was read to parents, who reported whether the service had been received in the past 12 months. If parents responded positively, they then were asked if the service had been received from or through their children's schools. Because providing definitions for each service would have been too burdensome in the context of a telephone interview, parents may have differed in their interpretations or definitions of a service. It also is possible that parents may have had different understandings of what it meant to receive a service "from or through the school or district" (e.g., whether they mentioned only direct services provided on the school grounds or services the school arranged that were provided outside of school).

**Exhibit 5-11**
**Changes in Services Received by Students with Disabilities**

| | Received Service: | |
|---|---|---|
| | From any source | From or through the school or district |
| Percentage receiving service in the past 12 months: | | |
| Speech-language pathology | | |
| Wave 1 | 56.6 | 56.1 |
| Wave 2 | 40.5 | 40.0 |
| Percentage-point change | -16.1*** | -16.1*** |
| Diagnostic medical services | | |
| Wave 1 | 27.9 | 6.7 |
| Wave 2 | 22.6 | 5.5 |
| Percentage-point change | -5.3 ** | |
| Orientation/mobility services | | |
| Wave 1 | 1.9 | 14.0 |
| Wave 2 | .7 | 13.6 |
| Percentage-point change | **-1.2*** | |

Source: SEELS parent interviews, Waves 1 and 2.

Note: Only services for which there has been a significant change are included in the exhibit.

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

## Differential Changes in Receipt of Related Services across Disability Categories

- Consistent with the high rate at which students with speech impairments have exited special education, they show the greatest decrease in receiving related services (Exhibit 5-12). In Wave 1, 94% of these students were reported to be receiving one or more of the services investigated in SEELS, a rate of service receipt that dropped by 22 percentage points to 72% in Wave 2.
- Notable declines in receipt of any related service also are noted for students with emotional disturbances or other health impairments (7 and 6 percentage points), also categories with relatively lower rates of continuation in special education.

**Exhibit 5-12**
**Changes In Related Services Received from Any Source, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage receiving service in the past 12 months: | | | | | | | | | | | |
| Any of the services investigated in SEELS | | | | | | | | | | | |
| Wave 1 | 83.0 | 94.2 | 91.3 | 92.5 | 98.1 | 92.0 | 96.7 | 93.3 | 98.7 | 94.4 | 96.2 |
| Wave 2 | 77.3 | 72.5 | 87.6 | 85.8 | 93.2 | 93.4 | 95.0 | 87.4 | 88.5 | 96.9 | 96.5 |
| Percentage-point change | | -21.7*** | | -6.7* | | | | -5.9* | | | |
| Speech-language pathology services | | | | | | | | | | | |
| Wave 1 | 30.3 | 89.0 | 68.7 | 27.6 | 79.3 | 38.5 | 41.8 | 40.5 | 91.0 | 56.4 | 81.0 |
| Wave 2 | 22.8 | 57.0 | 61.4 | 19.4 | 67.2 | 31.9 | 36.3 | 31.7 | 87.1 | 54.7 | 75.1 |
| Percentage-point change | -7.5* | -32.0*** | | -8.2* | -12.1** | | | -8.8* | | | |
| Occupational therapy | | | | | | | | | | | |
| Wave 1 | 7.5 | 7.2 | 32.1 | 13.0 | 15.5 | 33.6 | 56.3 | 28.6 | 60.0 | 36.7 | 60.9 |
| Wave 2 | 5.7 | 6.8 | 29.1 | 10.8 | 14.4 | 29.6 | 48.6 | 21.0 | 56.5 | 34.5 | 55.8 |
| Percentage-point change | | | | | | | | -7.6* | | | |
| Psychological/ mental health | | | | | | | | | | | |
| Wave 1 | 19.5 | 16.0 | 24.7 | 73.7 | 19.6 | 19.8 | 20.7 | 38.4 | 35.5 | 40.0 | 32.4 |
| Wave 2 | 23.1 | 13.8 | 24.8 | 64.2 | 23.1 | 15.0 | 21.9 | 38.2 | 34.9 | 39.7 | 33.6 |
| Percentage-point change | | | | -9.5* | | | | | | | |
| Diagnostic medical services | | | | | | | | | | | |
| Wave 1 | 23.5 | 19.9 | 37.1 | 45.2 | 34.6 | 48.5 | 56.0 | 53.6 | 42.7 | 49.4 | 49.3 |
| Wave 2 | 20.4 | 14.3 | 28.7 | 36.4 | 34.4 | 43.9 | 47.7 | 43.0 | 44.3 | 44.2 | 46.2 |
| Percentage-point change | | | -8.4* | -8.8* | | | | -10.6** | | | |
| Nursing care | | | | | | | | | | | |
| Wave 1 | .2 | .1 | 2.1 | 2.0 | 3.8 | 5.0 | 8.6 | 3.3 | 3.8 | 5.3 | 11.1 |
| Wave 2 | .5 | .3 | 3.0 | .9 | 3.0 | 12.0 | 12.8 | 2.6 | 4.4 | 5.0 | 7.8 |
| Percentage-point change | | | | | | +7.0* | | | | | |
| Percentage receiving service in the past 12 months: | | | | | | | | | | | |
| Audiology services | | | | | | | | | | | |
| Wave 1 | 4.7 | 9.8 | 11.0 | 4.7 | 82.3 | 5.9 | 6.8 | 8.5 | 9.3 | 5.8 | 15.7 |
| Wave 2 | 4.7 | 5.4 | 10.4 | 4.5 | 74.4 | 5.3 | 5.4 | 4.2 | 10.3 | 4.1 | 12.9 |
| Percentage-point change | | | | | -7.9* | | | | | | |
| Orientation/ mobility services | | | | | | | | | | | |
| Wave 1 | .2 | .4 | 7.2 | 1.5 | 1.9 | 43.8 | 11.3 | 4.1 | 4.4 | 9.6 | 13.5 |
| Wave 2 | .0 | .3 | 1.4 | .4 | 2.5 | 44.5 | 5.6 | 1.1 | 0.3 | 9.3 | 6.2 |
| Percentage-point change | | | -5.8*** | | | | -5.7* | -3.0* | -4.1*** | | -7.3** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: * p < .05, ** p < .01, *** p < .001.

- Students in other disability categories received services and supports in comparable proportions in Waves 1 and 2, with more than 90% of students with disabilities with hearing, visual, or orthopedic impairments; traumatic brain injuries, or multiple disabilities receiving services in both waves.
- Several kinds of services for which there has been no meaningful change for students with disabilities overall have changed markedly for students in some disability categories; seven services have changed significantly for students in at least one disability category, with all changes being declines in the percentages of students who receive the services.
- Declines are most widespread with regard to speech-language pathology services and orientation/mobility services. Declines in receipt of speech-language pathology services range from 8 percentage points among students with learning disabilities or other health impairments to 32 percentage points among students with speech impairments (consistent with the high rate of exit from special education for the latter group). Declines in receipt of orientation/mobility services range from 3 percentage points for students with other health impairments to 7 percentage points for those with multiple disabilities.
- Decreases in receipt of diagnostic medical services are evident for students with mental retardation, emotional disturbances, or other health impairments, ranging from 8 to 11 percentage points.
- Decreases in receipt of other kinds of services occur for only one category of students. Only students with other health impairments show a decline in receipt of occupational therapy (8 percentage points), only those with visual impairments have experienced a decrease in receipt of nursing care, and only students with hearing impairments have notable declines in receipt of audiology services (8 percentage points).
- Only three services show declines in receipt from or through students' school (Exhibit 5-13). Again declines in speech-language pathology services are the most widespread, with declines evident for students with learning disabilities; emotional disturbances; or speech, hearing, or other health impairments. As is true for receipt of this service overall, the decline has been largest for students with speech impairments (32 percentage points).
- Declines in receipt of diagnostic medical services from or through the schools are evident for students with mental retardation or autism (6 percentage points), where as receipt of nursing services from or through the schools is evident only for students with visual impairments (6 percentage points).

**Exhibit 5-13**
**Changes in Related Services and Supports Received by Students With Disabilities from The School or District in Waves 1 and 2 by Disability Category**

| | 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 Disabil-ities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage reported receiving service or support in past 12 months through school: | | | | | | | | | | | |
| Speech/language therapy | | | | | | | | | | | |
| Wave 1 | 29.9 | 88.7 | 67.9 | 27.2 | 78.6 | 37.5 | 40.8 | 38.6 | 90.0 | 55.6 | 79.5 |
| Wave 2 | 22.7 | 56.4 | 60.6 | 18.4 | 66.3 | 31.4 | 34.7 | 30.9 | 85.8 | 54.2 | 73.4 |
| Percentage-point change | -7.2* | -32.3*** | | -6.8* | -12.3** | | | -7.7* | | | |
| Diagnostic medical services | | | | | | | | | | | |
| Wave 1 | 5.3 | 3.5 | 13.9 | 16.8 | 11.8 | 9.8 | 9.7 | 8.6 | 8.0 | 14.6 | 14.2 |
| Wave 2 | 5.4 | 2.6 | 8.1 | 11.7 | 11.0 | 10.0 | 7.1 | 7.1 | 13.7 | 14.3 | 11.3 |
| Percentage-point change | | | -5.8* | | | | | | +5.7* | | |
| Nursing care | | | | | | | | | | | |
| Wave 1 | 1.9 | .0 | 1.2 | 1.4 | 1.9 | 1.8 | 4.6 | 2.8 | 1.9 | 2.6 | 6.9 |
| Wave 2 | .6 | .0 | 2.4 | 1.1 | 1.4 | 7.6 | 7.1 | 2.4 | 3.1 | 2.6 | 5.4 |
| Percentage-point change | | | +1.2 | | | +5.8* | | | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: * p < .05, ** p < .01, *** p < .001.

## Differential Changes in Receipt of Related Services across Demographic Groups

- No decline in students with disabilities receiving any related service is noted for the oldest age group—79% of those who were 13 or 14 in Wave 1 were receiving at least one of the related services investigated in SEELS at that time, whereas 76% receive services in Wave 2.
- There has been a 10-percentage-point decline in the youngest group of students receiving any service (94% of 7- through 9-year olds in Wave 1 receiving services then vs. 85% in Wave 2), and a 13-percentage-point decline in receipt of services among students who were 10 through 12 in Wave 1 (88% vs. 75%).
- Differences in rates of change across the age groups somewhat close the gap in rates of service receipt that had existed in Wave 1; whereas there was a 15-percentage-point difference in the rate of receiving any service between the

youngest and oldest age group in Wave 1, that difference has been cut by almost half, to 8 percentage points, in Wave 2.

- Younger students are far more likely to experience a decrease in receiving speech or language services (18 and 17 percentage points for the youngest and middle-age groups) than are the oldest students.
- Age does not factor into any of the change patterns for related services and supports with the exceptions that declines in receipt of speech-language pathology services and diagnostic medical services are evident only among the youngest two age groups. There are 17-percentage-point declines in receipt of speech-language pathology services for students who were 7 through 9 and 10 through 12 in Wave 1 and declines of 5 percentage points for each group in receipt of diagnostic medical services.
- Although most of the experiences highlighted in this report do not vary between boys and girls with disabilities, boys are less likely to be reported by their parents as receiving any services both in Wave 1 (80% boys, 91% girls) and in Wave 2 (76% boys, 87% girls). It is important to note however, that the increase between Waves 1 and 2 are the same between genders (4 percentage points).
- The decline in receipt of any services is evident only among students with disabilities in the middle and highest income groups (13 and 16 percentage points, respectively). In Wave 2, between 20% and 22% of students across the income groups receive services.
- White and African-American students are somewhat less likely to receive services in Wave 2 (decreases of 12 and 10 percentage points, respectively). No change is noted for Hispanic students with disabilities.
- Over time, speech-language pathology services are received by fewer students in each of the household income groups, and by each racial/ethnic group. However, the decline in receiving this service is twice as great among students in wealthier households than among students in the lowest income group (22 vs. 11 percentage points).
- White students and students living in the highest income group also are the only groups less likely to receive medical diagnostic services in Wave 2 than in Wave 1, showing declines of 6 percentage points.
- A decline in receipt of orientation/mobility services is noted only among students with disabilities in the lowest income group, and a decline in receipt of occupational therapy is evident only among white students with disabilities.

## Summary

This chapter has examined changes in the school enrollment, special education participation, IEP process and services of students with disabilities.

## Changes in School Enrollment

The majority of students with disabilities continue to attend public, regular schools in their neighborhoods. Only students with emotional disturbances or other health impairments or students from the lowest-income homes have experienced a decline in attending regular schools. The decline in attending neighborhood schools occurs only for students with learning disabilities or for students who are white or live in the highest income households.

In the 2-year period between Waves 1 and 2 of SEELS, many students with disabilities made the transition from elementary school to middle or junior high school. Almost one-third of students are spending their first year in a new school in Wave 2, an increase from the one in four students who were doing so in Wave 1. As expected, the majority of students who experienced this increase did so for grade level changes from fifth to sixth or from sixth to seventh grades. The increase in attendance at a new school is most evident for students with learning disabilities, mental retardation, or orthopedic or other health impairments. Students with emotional disturbance or traumatic brain injuries were most likely to be new to their schools in both Waves 1 and 2, an experience that was least likely to occur for students with speech impairments or autism.

Students with disabilities represented in SEELS have made an average of 1.6 school changes since starting kindergarten. However, there is a wide variation in school mobility among students with disabilities. About one-third of students have never changed schools, but this experience ranges from only 15% of students with emotional disturbances to 42% of students with speech impairments. The proportions of students who have changed schools three or four times vary from one in ten students with speech impairments to about one in four students with mental retardation, emotional disturbances, traumatic brain injuries, or multiple disabilities. Further, parents report that 6% of their children have made five or more school moves, but 23% of students with emotional disturbances find themselves at new schools at least five times. In addition, students in the lowest income households are most likely to have changed schools frequently. Thus, students with emotional disturbances and students in the lowest income group are less likely than their peers to experience the school stability and subsequent consistency that is important in forming relationships and maintaining academic advancement.

## Special Education Participation

There has been a noticeable decline in the proportions of students with disabilities who continue to receive special education services, so that in Wave 2, 24% of students who had received special education services in the 1999-2000 school years no longer are doing so. Students with speech impairments have experienced the greatest decline in special education status; 46% no longer participate in special education in Wave 2. In contrast, exit rates are 5% or less for students with mental retardation, autism, traumatic brain injuries, or multiple disabilities. This is a significant marker that distinguishes students with speech impairments from their peers in other disability categories. The high exit rate

among students with speech impairments is reflected in the larger declines in receipt of many services that is evident for this group than for students in other disability categories.

### The IEP Process

The majority of parents report they attend IEP meetings, although parents appear to be more likely to attend these meetings in Wave 1, with the greatest decline for parents of students with learning disabilities (decrease of 10 percentage points). Although two-thirds of parents report decisions regarding students' IEP goals had been generated collaboratively by school staff and family in Wave 1, there is a 5-percentage-point increase in collaborative decision-making process in Wave 2. This is most apparent for students with mental retardation, for whom collaborative IEP goal-setting increased by 9 percentage points.

### Receipt of Related Services

Students with disabilities receiving special education services come to school with a wide range of personal characteristics, family dynamics, and functional, cognitive, and social abilities. What children with disabilities bring to the classroom affects how they learn, how much they benefit from their school experiences, and how well they manage their transitions as they age. Consequently, some students need an array of supports and interventions besides the traditional classroom experiences to be successful at school, an array that may change as students age and face more challenging academic tasks.

Over time, the proportion of students with disabilities who are reported by their parents to receive any of the related services investigated in SEELS has decreased by 11 percentage points from Wave 1 (90%) to Wave 2 (79%). Consistent with their high exit rate from special education, the largest increase is apparent for students with speech or language impairments; 28% of these students are not receiving any services or supports in Wave 2, a 22-percentage-point increase from Wave 1. Students with emotional disturbances or other health impairments also are less likely to be receiving services in Wave 2, although the decline is not as dramatic.

Although the percentages of students with disabilities who receive most kinds of services have not changed over time, there have been large declines (16 percentage points) in the likelihood that students with disabilities receive speech-language pathology services at all and from or through their school. The declines are fairly widespread, involving students in five disability categories, although the decline is by far the largest among students with speech impairments (32 percentage points).

The only other declines in services are a 5-percentage-point drop in students receiving diagnostic medical services and a reduction by half in students receiving orientation/mobility services (from 2% to less than 1%). The decline in diagnostic services occurs only for students with other health impairments, emotional disturbances, or mental retardation, and orientation/mobility services

have declined among students with speech, orthopedic, or other health impairments or autism. Declines in receipt of occupational therapy, audiology and nursing services, and psychological/mental health services each has occurred among students in only one disability category.

Declines in service receipt are most notable among the younger two groups of students, with service receipt decreasing from 94% to 85% for the youngest students and 8% to 75% for students in the middle-age group. Students living in the middle or highest income groups are more likely than students in lower-income households to have a significant decrease in receipt of any services. Similar decreases occur for white and African-American students.

By describing the overall school enrollment and special education participation of students with disabilities, this chapter provides a context for considering students' school programs in greater detail, as addressed in the next chapter.

# 6. Changes in the School Programs of Students with Disabilities *By Mary Wagner*

*Inside the Classroom: The Language Arts Classroom Experiences of Elementary and Middle School Students with Disabilities* (Blackorby, Wagner, Cameto, et al., 2004) sets the language arts classroom experiences of students with disabilities in the larger context of their overall school programs. This chapter documents the changes in their school programs in a 1-year period between Waves 1 and 2 of the SEELS school surveys[1] in terms of their:

- Grade level and grade progression
- Course taking
- Instructional settings
- Accommodations and learning supports
- Participation in mandated standardized testing.

The following sections describe changes in these aspects of the school programs of students with disabilities by using data reported by school staff who were identified by schools as best able to document the overall school programs of individual SEELS students. Findings are reported for students with disabilities as a whole and for students who differ in their primary disability category, grade level, and selected demographic characteristics when significant.

## Grade Level and Grade Progression

As students progress up the grade levels, they encounter more complex curricula, changing expectations for behavior and academic performance, and sometimes marked changes in the organization of the school day. The moves from elementary to middle school (often in sixth grade) and from middle to high school (often in ninth grade) in particular can affect several aspects of students' school experiences. Therefore, understanding the grade levels represented in SEELS at Waves 1 and 2 is important context for interpreting changes in other dimensions of the school programs of students with disabilities.

- In Wave 2, students with disabilities span the range from second through tenth grades (Exhibit 6-1), and about 2% are in not assigned to a grade level.

[1] The Wave 1 SEELS school questionnaires were conducted in the spring of the 2000-01 school year. Wave 2 questionnaires were conducted the following year.

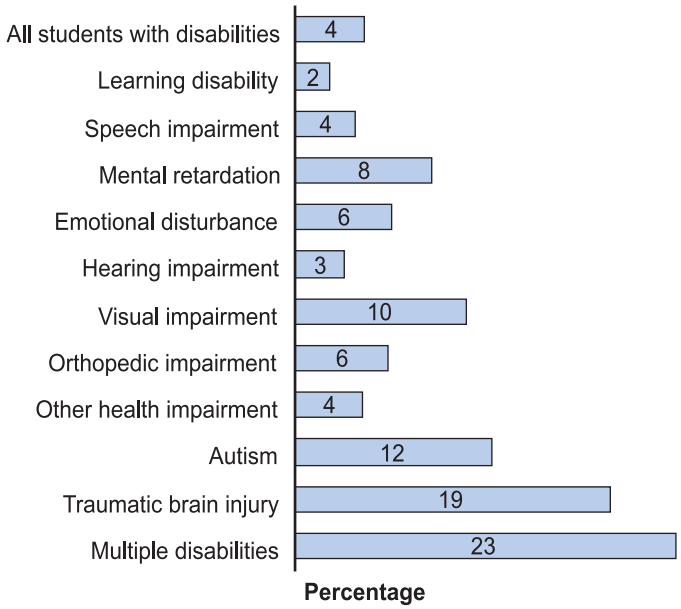
**Exhibit 6-1**
**Grade Levels of Students with Disabilities in the 2001-02 School Year**

| | Percentage |
|---|---|
| Second | 2.3 |
| Third | 13.4 |
| Fourth | 17.3 |
| Fifth | 16.5 |
| Sixth | 15.4 |
| Seventh | 13.7 |
| Eighth | 13.7 |
| Ninth | 5.8 |
| Tenth | .3 |
| Ungraded | 1.5 |

Source: SEELS Wave 2 student's school program questionnaire.

- Between 13% and 17% of students with disabilities are in each of the grades from third through ninth; few are in second grade or at high school grade levels
- In all, 4% of students with disabilities represented in SEELS are at the same grade level in Wave 2 as in Wave 1 (Exhibit 6-2).
- Five percent or fewer of students with learning disabilities or speech, hearing, or other health impairments are retained at grade level in a 1-year period.
- Ten and 12% of students with visual impairments or autism are repeating a grade in Wave 2, as are 20% and 23% of students with traumatic brain injuries or multiple disabilities.
- There are no differences between students at different grade levels or demographic groups in the likelihood of having been retained at grade level.

**Exhibit 6-2**
**Students with Disabilities Retained at Grade Level in the 2001-02 School Year**



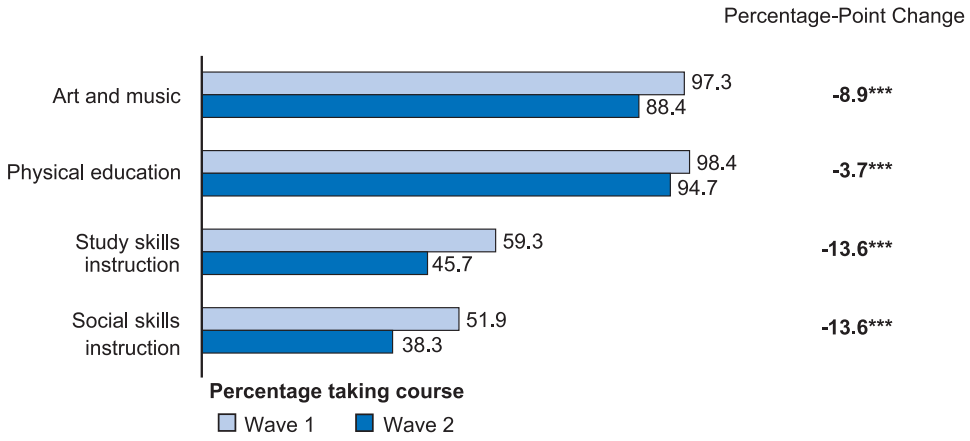

## Students' Course Taking

Wave 2 brings virtually no change to the academic course taking of elementary and middle school students with disabilities over the preceding school year. Nearly all students with disabilities—97% to 100% across subject areas—take the core academic subjects of language arts, mathematics, science, and social students.

- Across disabilities, more than 90% of students in every category take language arts and math in Wave 2. From 84% to 98% take science and from 82% to 99% take social studies.
- Students with autism are the least likely to take science and social studies, and students with learning disabilities, speech or hearing impairments, or emotional disturbances are the most likely.

In contrast to the stability of academic course taking, the likelihood that students' school programs include several kinds of nonacademic courses has declined in the 1-year period between Waves 1 and 2 (Exhibit 6-3).

**Exhibit 6-3**
**Changes in the Nonacademic Course Taking of Students with Disabilities**




Source: SEELS students' school program questionnaire, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level: *** p < .001.

- Although students with disabilities are just as likely to take vocational education and life skills instruction in the 2 school years (about one in five take vocational education and two in five take life skills instruction), students with disabilities show notable declines in taking art and music, physical education, and study skills and social skills instruction.
- Although the large majority of students with disabilities still take art and music and physical education in Wave 2 (88% and 95%), decreases of 9 and 4 percentage points are noted for enrollment in these courses. A decline in physical education course taking also is apparent among students in the general population and is thought to reflect an increased emphasis on academics in upper grades and America's schools generally (Jacobson, 2004; American Alliance for Health, Physical Education, Recreation and Dance, 2004).
- Larger declines, 14 percentage points, are evident in students with disabilities receiving study skills and social skills instruction, so that 46% and 38% of students receive such instruction in Wave 2.

## Differential Changes in Nonacademic Course Taking across Disability Categories

Students in different primary disability categories have experienced changes in nonacademic course taking to different degrees (Exhibit 6-4).

- Declines in social skills instruction are the most widespread of the nonacademic courses; students in eight disability categories show declines, ranging from 12 percentage points for students with learning disabilities or mental retardation to 20 percentage points for students with emotional

disturbances. The decline in other kinds of nonacademic courses each affects students in five disability categories.

- Students with learning disabilities show decreases in all four kinds of instruction, ranging from 5 percentage points in enrollment in physical education to 15-percentage-point declines in taking art or music or in receiving study skills instruction.
- Students in other categories have experienced changes in from one kind of course (students with other health impairments) to three kinds of courses (students with speech, hearing, or visual impairments; or mental retardation). Students with emotional disturbances show changes only in skills instruction, not in the more formal kinds of subjects.
- Declines in course taking are smallest for physical education across all categories of students. The largest declines for students in six categories are in social skills instruction. In contrast, students with learning disabilities show their largest decline in taking art or music and students with speech impairments or autism show their largest declines in receiving study skills instruction.

**Exhibit 6-4**
**Changes in Nonacademic Course Taking, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage taking: | | | | | | | | | | | |
| Art or music | | | | | | | | | | | |
| Wave 1 | 97.4 | 98.7 | 95.7 | 93.4 | 95.3 | 96.9 | 95.1 | 94.6 | 97.0 | 94.2 | 97.0 |
| Wave 2 | 82.5 | 95.2 | 88.6 | 88.6 | 86.6 | 85.9 | 91.7 | 88.4 | 91.4 | 93.4 | 93.2 |
| Percentage-point change | -14.9*** | | -7.1** | | -8.7** | -11.0** | | | -5.6* | | |
| Physical education | | | | | | | | | | | |
| Wave 1 | 97.5 | 99.8 | 98.7 | 98.2 | 98.0 | 96.5 | 96.8 | 97.8 | 98.6 | 99.5 | 95.8 |
| Wave 2 | 92.5 | 97.1 | 94.9 | 95.6 | 96.0 | 86.3 | 90.6 | 96.5 | 95.3 | 96.0 | 93.3 |
| Percentage-point change | -5.0* | -2.7* | -3.8* | | | -10.2** | -6.2* | | | | |
| Study skills instruction | | | | | | | | | | | |
| Wave 1 | 61.9 | 56.7 | 57.5 | 62.1 | 56.4 | 55.1 | 53.0 | 63.0 | 53.3 | 60.0 | 46.9 |
| Wave 2 | 47.3 | 42.4 | 49.4 | 43.5 | 42.9 | 45.7 | 43.2 | 50.4 | 37.7 | 54.1 | 51.7 |
| Percentage-point change | -14.6** | -14.3* | | -18.6** | -13.5* | | | | -15.6** | | |
| Social skills instruction | | | | | | | | | | | |
| Wave 1 | 42.2 | 46.3 | 75.9 | 81.8 | 53.0 | 61.9 | 59.3 | 55.4 | 83.9 | 62.4 | 79.5 |
| Wave 2 | 30.3 | 32.7 | 63.8 | 61.9 | 36.2 | 46.1 | 43.7 | 37.3 | 78.1 | 53.0 | 74.9 |
| Percentage-point change | -11.9* | -13.6* | -12.1* | -19.9*** | -16.8** | -15.8* | -15.6* | -18.1** | | | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

## Differential Changes in Nonacademic Course Taking across Demographic Groups

**Grade level.** Declines in receipt of the various kinds of nonacademic courses do not occur equally among students at different grade levels (Exhibit 6-5).

- Few changes in course taking are evident for students who were in first through third grades in Wave 1; only social skills instruction has declined for this group (17 percentage points), bringing the Wave 2 rate of receiving social skills instruction to 44% of these students.
- Students who were in fourth or fifth grades in Wave 1, many of whom moved from elementary to middle school, show declines in all four kinds of nonacademic courses, ranging from a 5-percentage-point decrease in taking physical education to a 19-percentage-point increase in study skills instruction.

**Exhibit 6-5**
**Changes in Nonacademic Course Taking, by Grade Level**

| | Grade level in the 2000-01 school year | | |
|---|---|---|---|
| | 1st through 3rd | 4th or 5th | 6th or above |
| Percentage taking: | | | |
| Art or music | | | |
| Wave 1 | 99.1 | 99.2 | 93.2 |
| Wave 2 | 98.7 | 92.1 | 75.1 |
| Percentage-point change | | -7.1** | -18.1*** |
| Physical education | | | |
| Wave 1 | 99.5 | 99.6 | 96.0 |
| Wave 2 | 98.1 | 94.7 | 90.9 |
| Percentage-point change | | -4.9** | -5.1* |
| Study skills instruction | | | |
| Wave 1 | 54.3 | 64.3 | 60.0 |
| Wave 2 | 43.9 | 45.2 | 47.9 |
| Percentage-point change | | -19.1*** | -12.1* |
| Social skills instruction | | | |
| Wave 1 | 58.5 | 53.4 | 40.0 |
| Wave 2 | 41.4 | 38.0 | 32.4 |
| Percentage-point change | -17.1** | -15.4** | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
*p<.05, **p<.01, ***p<.001.

- With the exception of social skills instructions, students who were in sixth grade or above in Wave 1 experienced declines in nonacademic course taking that range from 5 to 18 percentage points (physical education and art or music, respectively). The large decline in taking art or music results in older students being much less likely to receive that kind of instruction in Wave 2 than other students (75% vs. 99% and 92%)

**Household income.** Students with disabilities from households with different income levels show different experiences with changes in nonacademic course taking (Exhibit 6-6).

- Declines in both taking art and music and in social skills instruction affect all three income groups. Decreases in taking art and music range from 7 to 11 percentage points; they range from 12 to 17 percentage points for social skills instruction.
- The middle-income group has experienced declines in all four nonacademic subjects, from a 5-percentage-point decrease in taking physical education to a 19-percentage-point decrease in receiving study skills instruction.

**Exhibit 6-6**
**Changes in Nonacademic Course Taking of Students with Disabilities, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage taking: | | | | | | |
| Art or music | | | | | | |
| Wave 1 | 97.0 | 97.3 | 96.9 | 97.4 | 96.3 | 97.4 |
| Wave 2 | 86.3 | 90.4 | 88.2 | 90.8 | 80.3 | 85.1 |
| Percentage-point change | -10.7*** | -6.9* | -8.7** | -6.6*** | -16.0*** | -12.3* |
| Physical education | | | | | | |
| Wave 1 | 97.4 | 99.0 | 98.8 | 98.6 | 99.4 | 96.2 |
| Wave 2 | 93.3 | 93.8 | 92.9 | 94.9 | 93.5 | 95.4 |
| Percentage-point change | | -5.2* | -5.9** | -3.7** | -5.9* | |
| Study skills instruction | | | | | | |
| Wave 1 | 58.6 | 63.8 | 57.2 | 60.0 | 58.0 | 59.9 |
| Wave 2 | 43.1 | 44.5 | 47.9 | 46.4 | 39.6 | 44.7 |
| Percentage-point change | -15.5* | -19.3** | | -13.6*** | -18.4* | |
| Social skills instruction | | | | | | |
| Wave 1 | 53.6 | 51.7 | 48.3 | 51.9 | 60.5 | 43.3 |
| Wave 2 | 41.5 | 37.9 | 31.6 | 37.3 | 43.1 | 36.9 |
| Percentage-point change | -12.1* | -13.8* | -16.7** | -14.6** | -17.4* | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- The lowest income group does not show declines in taking physical education; declines in other nonacademic course taking range from 11 percentage points for art and music to 16 percentage points for study skills instruction.
- The highest income group does not show declines in study skills instruction; other nonacademic course taking has declined from 6 percentage points for physical education to 17 percentage points for study skills instruction.
- In Wave 2, there are similar rates of nonacademic course taking, regardless of household income levels.

**Racial/ethnic background.** Changes in nonacademic course taking vary with students' racial/ethnic background (Exhibit 6-6).

- Both white and African-American students with disabilities have experienced declines in all four kinds of nonacademic course taking, with declines being somewhat larger for African-American students with disabilities (ranging from 6 to 18 percentage points) than their white peers (ranging from 4 to 15 percentage points).
- Hispanic students with disabilities show a sizable decrease only in taking art and music (12 percentage points).

- The racial/ethnic groups have very similar levels of participation in all four nonacademic subjects in Wave 2.

## Instructional Settings

Consistent with the absence of change in students' academic course taking, there has been no change in the instructional placements for academic courses.

- In Wave 2, almost two-thirds of students with disabilities who take language arts and mathematics do so in general education classrooms, as do about 8 in 10 of students taking science and social studies.
- Although there have been changes in students' nonacademic course taking, the placements for various nonacademic subjects have not changed. About 90% of students with disabilities who take art and music or physical education take them in general education classes, as do three-fourths of students who take vocational education, about 6 in 10 students who receive life skills or study skills instruction, and about half of students who receive social skills instruction.
- Overall, 95% of students with disabilities receive some instruction in a general education classroom in Wave 2; they average five classes a day there.
- Seventy percent of students with disabilities take special education classes (an average of two per day).
- There are no notable differences across disability categories or demographic groups in the likelihood of students having particular instructional settings

## Receipt of Accommodations and Learning Supports

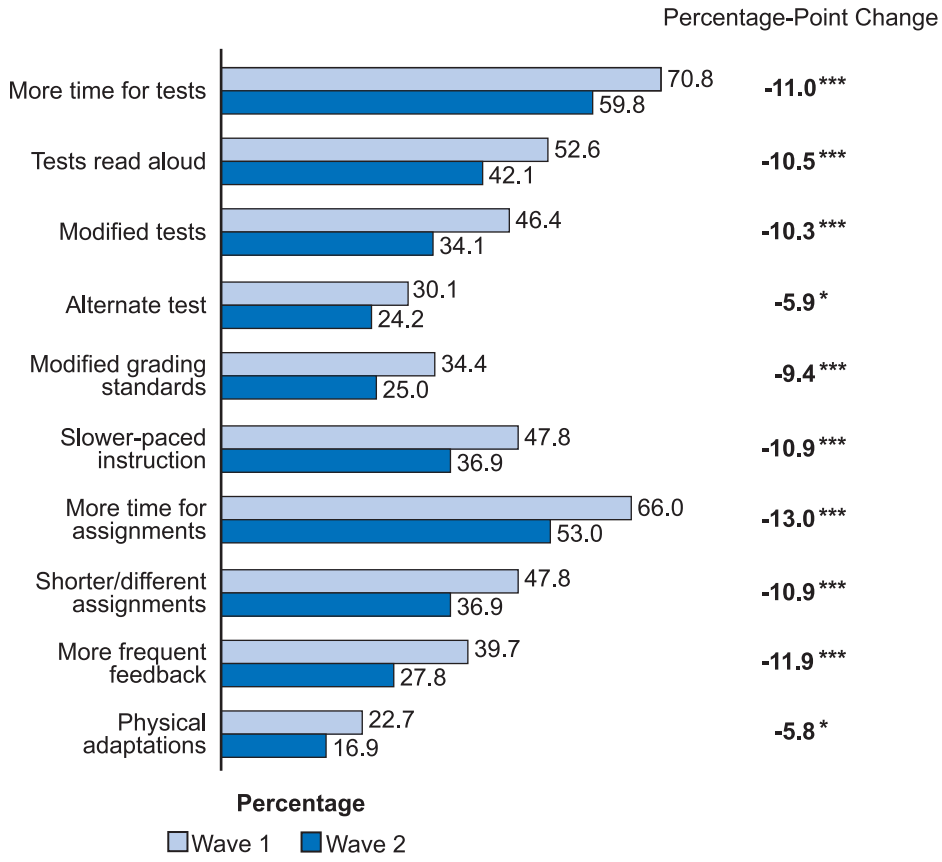
The success that students with disabilities achieve in school can be influenced by access to a variety of services, accommodations, modifications, and other learning supports that further their ability to meet their educational goals. The preceding chapter addresses the extent to which provision of related services to students with disabilities has changed from Wave 1 to Wave 2 of SEELS, according to parents. This section considers the provision of other kinds of learning supports to students with disabilities by their schools.

SEELS has investigated the extent to which students with disabilities receive 10 kinds of modifications or accommodations to support their learning and success at school. Students are less likely to receive each of these kinds of learning supports in Wave 2 than in Wave 1 (Exhibit 6-7).

- In a 1-year period, there have been decreases of 6 to 9 percentage points in the likelihood that students with disabilities receive accommodations or modifications that involve taking alternative tests, being subject to modified grading standards, or receiving physical accommodations at school (e.g., seating at the front of the room, a modified desk or chair).

- Receipt of all other accommodations or modifications investigated in SEELS show declines of 10 to 13 percentage points.

**Exhibit 6-7**
**Changes in Accommodations and Modifications Provided to Students with Disabilities**




Source: SEELS student's school program questionnaire, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
* p < .05; *** p < .001.

In addition to these kinds of accommodations and modifications, SEELS also assessed the extent to which students with disabilities receive nine other kinds of learning supports.[2] Changes in provision of only three of them are noted in a 1-year period.

- There has been a 13-percentage-point decline in students having their progress monitored by a special education teacher; two-thirds of students

[2] These include having: a teacher aide, instructional assistant, or other personal aide in the classroom; the students' progress monitored by a special education teacher; a behavior management plan or program; self-advocacy training; and access to a variety of technology supports (i.e., computer hardware or software for students with disabilities to help with assignments, tests, or skill development; books on tape; communication aides; or use of a computer when it is not available to other students).

with disabilities were subject to such monitoring in Wave 1, compared with 54% in Wave 2.

- Whereas in Wave 1, 41% of students with disabilities were reported by school staff to have a teacher aide, instructional assistant, or other personal aide in the classroom, 32% receive such support in Wave 2, a 9-percentage-point decline.
- Computer software for students with disabilities is provided to 8% of students with disabilities in Wave 2, a 5-percentage-point decline from Wave 1.

### Differential Changes in Receipt of Learning Supports across Disability Categories

Declines in receipt of learning supports have been experienced by students in only six disability categories (Exhibit 6-8).

- Students with speech impairments are by far the most likely to have experienced declines in their receipt of accommodations, modifications, or other learning supports consistent with their relatively high rate of exiting special education (see Chapter 5) and, therefore, no longer being eligible to receive them. Sizable declines are noted for seven of the learning supports, ranging from 13 to 28 percentage points.
- Students with learning disabilities show declines of 10 or 11 percentage points in taking modified tests, being subject to modified grading standards, or receiving more frequent feedback on their performance.
- Students with emotional disturbances show an 11-percentage-point decline in receiving shorter or different assignments, a 13-percentage-point decline in having their progress monitored by a special education teacher, and a 6-percentage-point decline in having the use of computer software that is designed for students with disabilities.

**Exhibit 6-8**
**Changes in Learning Supports Provided to Students, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage provided: | | | | | | | | | | | |
| More time for tests | | | | | | | | | | | |
| Wave 1 | 80.3 | 54.4 | 68.2 | 73.0 | 54.9 | 62.9 | 65.9 | 73.9 | 50.7 | 71.8 | 45.0 |
| Wave 2 | 76.0 | 28.7 | 71.0 | 72.6 | 54.9 | 64.7 | 61.4 | 73.8 | 52.8 | 81.6 | 50.6 |
| Percentage-point change | | -25.7*** | | | | | | | | | |
| Test read to student | | | | | | | | | | | |
| Wave 1 | 59.8 | 38.5 | 62.4 | 47.8 | 38.6 | 34.4 | 38.5 | 44.4 | 38.1 | 50.6 | 38.2 |
| Wave 2 | 51.6 | 23.0 | 60.0 | 43.4 | 36.0 | 37.4 | 36.3 | 43.9 | 34.9 | 50.0 | 40.1 |
| Percentage-point change | | -15.5* | | | | | | | | | |
| Modified tests | | | | | | | | | | | |
| Wave 1 | 52.0 | 31.9 | 54.1 | 47.0 | 30.9 | 39.4 | 40.6 | 46.0 | 38.9 | 50.0 | 31.3 |
| Wave 2 | 40.6 | 15.9 | 51.4 | 40.1 | 27.3 | 35.2 | 36.4 | 44.9 | 38.2 | 47.0 | 37.2 |
| Percentage-point change | -11.4* | -16.0** | | | | | | | | | |
| Modified grading standards | | | | | | | | | | | |
| Wave 1 | 35.3 | 21.5 | 52.3 | 37.1 | 13.3 | 18.9 | 34.8 | 33.4 | 40.3 | 43.0 | 36.4 |
| Wave 2 | 25.6 | 14.7 | 45.3 | 32.2 | 16.8 | 19.3 | 27.8 | 25.8 | 39.5 | 28.5 | 34.1 |
| Percentage-point change | -9.7* | | | | | | | | | | |
| Slower-paced instruction | | | | | | | | | | | |
| Wave 1 | 49.4 | 31.7 | 71.9 | 50.5 | 33.8 | 31.7 | 45.6 | 41.0 | 48.5 | 57.5 | 49.2 |
| Wave 2 | 41.7 | 20.2 | 61.9 | 42.8 | 36.5 | 30.2 | 39.6 | 31.3 | 40.9 | 58.6 | 50.7 |
| Percentage-point change | | | -10.0* | | | | | | | | |
| More time for assignments | | | | | | | | | | | |
| Wave 1 | 72.7 | 47.3 | 74.0 | 66.8 | 40.0 | 61.2 | 71.1 | 72.0 | 57.4 | 69.7 | 44.8 |
| Wave 2 | 65.1 | 26.9 | 68.4 | 60.6 | 43.5 | 59.0 | 64.5 | 63.0 | 57.0 | 73.7 | 50.5 |
| Percentage-point change | | -20.4** | | | | | | | | | |
| Shorter or different assignments | | | | | | | | | | | |
| Wave 1 | 50.0 | 30.7 | 65.5 | 50.0 | 25.0 | 39.0 | 53.6 | 52.0 | 57.2 | 62.9 | 36.9 |
| Wave 2 | 42.5 | 20.2 | 58.5 | 38.7 | 25.7 | 35.2 | 45.2 | 36.4 | 49.0 | 63.1 | 45.8 |
| Percentage-point change | | | | -11.3* | | | | -15.6* | | | |

**Exhibit 6-8**
**Changes in Learning Supports Provided to Students, by Disability Category (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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage provided: | | | | | | | | | | | |
| More frequent feedback | | | | | | | | | | | |
| Wave 1 | 40.2 | 27.0 | 53.0 | 52.3 | 25.6 | 26.7 | 37.3 | 41.0 | 46.3 | 47.8 | 32.0 |
| Wave 2 | 30.3 | 14.2 | 40.6 | 43.1 | 25.8 | 22.9 | 25.2 | 34.4 | 36.0 | 52.0 | 44.8 |
| Percentage-point change | -9.9* | -12.8* | -12.4* | | | | -12.1* | | | | |
| Progress monitored by special education teacher | | | | | | | | | | | |
| Wave 1 | 65.6 | 58.2 | 75.7 | 72.0 | 61.4 | 77.9 | 71.4 | 70.3 | 75.8 | 77.8 | 71.5 |
| Wave 2 | 61.9 | 30.6 | 68.7 | 58.8 | 57.8 | 65.4 | 61.3 | 63.8 | 67.2 | 73.2 | 71.0 |
| Percentage-point change | | -27.6*** | | | | | | | | | |
| Teacher aide, instructional assistant, or other personal aide | | | | | | | | | | | |
| Wave 1 | 35.0 | 31.7 | 61.7 | 48.8 | 38.3 | 40.9 | 56.8 | 40.7 | 73.9 | 61.7 | 71.7 |
| Wave 2 | 32.9 | 14.7 | 57.7 | 42.9 | 28.9 | 39.0 | 56.7 | 33.0 | 72.0 | 45.0 | 70.4 |
| Percentage-point change | | -17.0** | | | | | | | | | |
| Computer software for students with disabilities | | | | | | | | | | | |
| Wave 1 | 10.2 | 7.1 | 25.5 | 10.1 | 5.7 | 38.5 | 23.4 | 10.3 | 17.9 | 29.2 | 30.5 |
| Wave 2 | 5.1 | 3.8 | 21.3 | 3.6 | 6.3 | 41.7 | 19.5 | 10.9 | 24.9 | 15.4 | 31.0 |
| Percentage-point change | | | | -6.5* | | | | | | | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.

Note: Only learning aids that change significantly for students in at least one disability category are included in the exhibit.

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

- Students with mental retardation are 10-percentage-points less likely to receive slower-paced instruction, those with other health impairments show a 16-percentage-point decline in receiving modifications to their assignments, and students with orthopedic impairments have experienced a decline of 12 percentage points from Wave 1 to Wave 2 in receiving more frequent feedback on their performance.

## Differential Changes in Receipt of Learning Supports across Demographic Groups

**Grade level**. Declines in receipt of the various kinds of learning supports occur largely among students with disabilities who were at elementary grade levels in Wave 1 (Exhibit 6-9).

- Students who were in fourth or fifth grades in Wave 1, many of whom subsequently made the transition to middle school, are the most likely to have experienced declines in receipt of learning supports. All eleven forms of support that have changed significantly for any grade level group have declined for these students. Declines range from 11 to 21 percentage points for having tests read aloud and having more time to complete assignments, respectively.
- Those in the early elementary grade levels in Wave 1 show decreases in receipt of nine kinds of learning supports; these range from an 11-percentage-point decrease in receiving more frequent feedback on their performance to a 22-percentage-point decrease in having their progress monitored by a special education teacher.
- Only with regard to receiving more frequent feedback on performance have students with disabilities who were in sixth grade or above experienced change in the learning supports they are provided (12 percentage points).

**Exhibit 6-9**
**Changes in Learning Supports Provided to Students with Disabilities, by Grade Level**

| | Grade level in the 2000-01 school year | | |
|---|---|---|---|
| | 1st through 3rd | 4th or 5th | 6th or above |
| Percentage provided: | | | |
| More time for tests | | | |
| Wave 1 | 63.4 | 73.3 | 76.9 |
| Wave 2 | 50.2 | 56.5 | 72.1 |
| Percentage-point change | -13.2* | -16.8** | |
| Test read to student | | | |
| Wave 1 | 52.8 | 51.1 | 54.7 |
| Wave 2 | 39.1 | 39.8 | 47.2 |
| Percentage-point change | -13.7* | -11.3* | |
| Modified tests | | | |
| Wave 1 | 37.0 | 50.2 | 51.3 |
| Wave 2 | 27.6 | 31.5 | 42.5 |
| Percentage-point change | | -18.7*** | |
| Alternative tests/assessments | | | |
| Wave 1 | 27.6 | 35.2 | 24.9 |
| Wave 2 | 22.9 | 23.3 | 24.0 |
| Percentage-point change | | -11.9* | |
| Modified grading standards | | | |
| Wave 1 | 32.9 | 37.6 | 33.2 |
| Wave 2 | 21.3 | 24.3 | 27.0 |
| Percentage-point change | -11.6* | -13.3** | |
| Slower-paced instruction | | | |
| Wave 1 | 43.5 | 51.0 | 46.3 |
| Wave 2 | 31.3 | 38.9 | 37.4 |
| Percentage-point change | 12.2* | 12.1* | |
| More time for assignments | | | |
| Wave 1 | 61.3 | 73.0 | 65.1 |
| Wave 2 | 43.5 | 51.7 | 61.9 |
| Percentage-point change | -17.8*** | -21.3*** | -3.2 |
| Shorter or different assignments | | | |
| Wave 1 | 46.1 | 53.2 | 45.3 |
| Wave 2 | 32.8 | 37.7 | 38.9 |
| Percentage-point change | -13.3* | -15.5** | |
| More frequent feedback | | | |
| Wave 1 | 38.5 | 43.4 | 38.0 |
| Wave 2 | 27.6 | 28.1 | 25.9 |
| Percentage-point change | -10.9* | -15.3** | -12.2* |

**Exhibit 6-9**
**Changes in Learning Supports Provided to Students with Disabilities, by Grade Level (Concluded)**

| | Grade level in the 2000-01 school year | | |
|---|---|---|---|
| | 1st through 3rd | 4th or 5th | 6th or above |
| Percentage provided: | | | |
| Progress monitored by a special education teacher | | | |
| Wave 1 | 69.3 | 68.8 | 62.6 |
| Wave 2 | 47.4 | 53.4 | 57.1 |
| Percentage-point change | -21.9*** | -15.4** | |
| Teacher aide, instructional assistant, or other personal assistant | | | |
| Wave 1 | 41.6 | 42.1 | 36.1 |
| Wave 2 | 27.7 | 27.7 | 37.2 |
| Percentage-point change | -13.9** | -14.4** | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.

Note: Only learning aids that change significantly for students in at least one grade level grouping are included in the exhibit.

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

**Household income**. Students with disabilities from households with different income levels show different experiences with changes in receipt of various learning supports (Exhibit 6-10).

- Declines in receipt of learning supports has been most widespread among students from the middle income group—those from households with annual incomes of $25,001 to $50,000. They show declines in receipt of seven kinds of learning supports, ranging from 13 percentage points for being subject to modified grading standards and having progress monitored by a special education teacher to 16 percentage points for taking modified forms of tests.
- Students with disabilities in the lowest and highest income groups show declines in four and three forms of learning supports, respectively. Declines range from 10 to 14 percentage points for the lowest income group (for receipt of physical accommodations and receiving more frequent feedback) and 13 and 22 percentage points for the highest income group (13 percentage points for being given more time to take tests and having tests read aloud and 22 percentage points for having progress monitored).

**Exhibit 6-10**
**Changes in Accommodations Provided to Students with Disabilities, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage provided: | | | | | | |
| More time for tests | | | | | | |
| Wave 1 | 74.1 | 75.0 | 64.7 | 70.9 | 72.1 | 65.8 |
| Wave 2 | 66.7 | 64.2 | 51.8 | 58.8 | 67.2 | 57.6 |
| Percentage-point change | | | -12.9* | -12.1*** | | |
| Test read to student | | | | | | |
| Wave 1 | 52.7 | 56.8 | 45.8 | 53.7 | 53.1 | 46.9 |
| Wave 2 | 44.3 | 49.8 | 32.8 | 44.2 | 45.2 | 30.3 |
| Percentage-point change | | | -13.0* | -9.5** | | |
| Modified tests | | | | | | |
| Wave 1 | 47.5 | 52.4 | 35.9 | 43.7 | 50.7 | 56.4 |
| Wave 2 | 35.7 | 35.9 | 31.1 | 34.0 | 33.5 | 37.4 |
| Percentage-point change | -11.8* | -16.5** | | -9.7** | -17.2* | |
| Modified grading standards | | | | | | |
| Wave 1 | 41.1 | 36.7 | 27.9 | 32.0 | 42.5 | 37.9 |
| Wave 2 | 30.3 | 23.9 | 21.7 | 22.5 | 31.9 | 31.8 |
| Percentage-point change | | -12.8* | | -9.5** | | |
| Slower-paced instruction | | | | | | |
| Wave 1 | 54.1 | 51.3 | 37.3 | 43.3 | 64.5 | 48.5 |
| Wave 2 | 45.8 | 37.2 | 27.1 | 33.1 | 48.4 | 43.1 |
| Percentage-point change | | -14.1* | | -10.2** | -16.1* | |
| More time for assignments | | | | | | |
| Wave 1 | 71.8 | 68.7 | 58.1 | 63.5 | 71.1 | 74.2 |
| Wave 2 | 59.2 | 52.5 | 47.1 | 49.6 | 68.1 | 56.2 |
| Percentage-point change | -12.6* | -16.2** | | -13.9*** | -3.0 | -18.0 |
| Shorter or different assignments | | | | | | |
| Wave 1 | 53.1 | 50.0 | 36.6 | 43.8 | 55.7 | 61.1 |
| Wave 2 | 45.2 | 35.7 | 28.2 | 33.5 | 44.5 | 50.0 |
| Percentage-point change | | -14.3* | | -10.3** | | |
| More frequent feedback | | | | | | |
| Wave 1 | 44.1 | 43.6 | 32.7 | 37.2 | 51.3 | 41.0 |
| Wave 2 | 29.7 | 28.7 | 24.1 | 26.2 | 35.2 | 30.2 |
| Percentage-point change | -14.4* | -14.9* | | -11.0*** | -16.1* | |
| Physical accommodations | | | | | | |
| Wave 1 | 27.1 | 20.4 | 27.3 | 22.9 | 23.2 | 19.5 |
| Wave 2 | 16.6 | 16.9 | 21.2 | 16.8 | 20.9 | 11.8 |
| Percentage-point change | -10.5* | | | -6.9* | | |

**Exhibit 6-10**
**Changes in Accommodations Provided to Students with Disabilities , by Household Income and Race/Ethnicity (Concluded)**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage provided: | | | | | | |
| Progress monitored by a special education teacher | | | | | | |
| Wave 1 | 63.7 | 70.2 | 70.4 | 64.8 | 69.3 | 73.7 |
| Wave 2 | 57.5 | 56.9 | 48.1 | 52.3 | 57.8 | 56.5 |
| Percentage-point change | | -13.3* | | -12.5*** | | |
| Teacher aide, instructional assistant, or other personal aide | | | | | | |
| Wave 1 | 44.3 | 45.1 | 33.1 | 38.4 | 47.3 | 42.5 |
| Wave 2 | 39.5 | 35.8 | 27.8 | 31.4 | 39.4 | 29.8 |
| Percentage-point change | | | | -7.0* | | |
| Computer software for students with disabilities | | | | | | |
| Wave 1 | 13.3 | 13.4 | 8.2 | 11.0 | 18.1 | 13.4 |
| Wave 2 | 11.2 | 7.2 | 6.2 | 5.8 | 14.3 | 13.0 |
| Percentage-point change | | | | -5.2** | | |

Source: SEELS student's school program questionnaire, Waves 1 and 2.

Note: Only learning aids that change significantly for students in at least one income or racial/ethnic group are included in the exhibit.

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

**Racial/ethnic background.** Changes in receipt of learning supports vary with students' racial/ethnic background (Exhibit 6-10).

- White students with disabilities show declines in receipt of all 12 of the learning supports included in Exhibit 6-10. Declines range from 5 percentage points in the receipt of physical accommodations to 14 percentage points in being subject to modified grading standards.
- African-American students with disabilities have experienced declines in three forms of learning support: 16 percentage points decreases in receipt of slower-paced instruction and more frequent feedback on their performance and 17 percentage points in taking modified tests.
- Although Hispanic students with disabilities show declines in the receipt of some learning supports that equal or surpass the size of those experienced by white or African-American students with disabilities, those declines do not reach statistical significance for this relatively small group.

## Participation in Mandated Standardized Testing

NCLB requires that schools begin annual testing of students who are in grades three through eight and that they test students in grades nine or higher at least once during their high school careers. Students with disabilities are expected to be included to the maximum extent possible, with accommodations when necessary.

- In the 1-year period between Waves 1 and 2 of the SEELS school surveys, the percentage of students with disabilities who are reported to be at a grade level at which mandated standardized tests are given has increased, from 92% to 96%.
- The entire increase has occurred among students who were in first through third grades in Wave 1 (an increase from 85% to 98%) and who moved into the grade range at which annual mandatory testing applies the following school year.
- There have been no changes in the ways in which students with disabilities who are at grade levels in which testing occurs participate in testing; in Wave 2, 3% do not take the tests, 12% take an alternate form of the test, 62% are tested with modifications, and 19% take the tests without modifications.
- Changes in the participation of students with disabilities in mandated standardized testing have occurred similarly for students who differ in their primary disability category and demographic characteristics.

## Summary

It is reasonable to have modest expectations for the kinds of changes in the school programs of students with disabilities that might occur in a 1-year period. In fact, many important features of students' school programs have not changed, including, for example, their academic course taking and instructional settings.

However, some changes that have occurred suggest that an increasing emphasis on academics may be displacing nonacademic courses in students' school schedules. There have been marked declines in students' taking art or music and physical education and in their receiving study skills and social skills instruction. These declines have been particularly pronounced for students with learning disabilities and, to a lesser extent, those with speech, hearing, or visual impairments or mental retardation. At the same time that academics appear to be taking a larger portion of students' school days, they have experienced a decline in the likelihood of receiving a variety of learning supports that could help them succeed in those classes.

These changes are particularly notable among students in grade levels that often mark the transitions from elementary to middle and middle to high school. Students at grade levels at which these transition points generally occur have experienced virtually all the decline in nonacademic course taking that has occurred; students in the earlier elementary grades show almost no such declines. Further, the group of students transitioning to middle school show the most widespread declines in receiving learning supports.

The differential experiences with changes in receipt of learning supports that are apparent across disability categories appear generally to reflect differential rates of students being declassified from special education. Those with the highest rates of declassification, particularly students with speech impairments, have the largest declines in receipt of learning supports because they no longer are eligible for them.

# 7. *Parents' Perceptions of Students' School, Teachers, and School Programs* *By Phyllis Levine and Mary Wagner*

The previous two chapters describe several aspects of the schools, school programs, and services of students with disabilities, with a focus on the changes students have experienced between Waves 1 and 2 of SEELS. What do parents think of those schools and school programs? Have the changes described in previous chapters been associated with changes in parents' perceptions of their children's schools, teachers, and school programs, including their special education program and services?

This chapter describes changes in parents' perceptions of several aspects of their children's school experiences by using data from parent interviews conducted in 2000 and 2002. Parents' perceptions are measured in two ways. Parents were asked to rate their satisfaction with aspects of their children's school and school programs using a 4-point scale; parents reported whether they were "very satisfied," "somewhat satisfied," "somewhat dissatisfied," or "very dissatisfied." They reported their satisfaction with their children's school, teachers, overall education, and special education services as well as with two more specific issues regarding the homework their children receive and schools informing them of their children's academic performance. In addition, parents were asked to state their level of agreement with a variety of statements about their children's school and teachers. Levels of agreement are "strongly agree," "agree," "disagree," and "strongly disagree."

Findings are reported for Waves 1 and 2 for students with disabilities as a whole and for those who differ in their primary disability classification and selected demographic characteristics, when significant.

## Parents' Perceptions of Their Children's School

In interviews, parents reported their overall level of satisfaction with "the school (CHILD) attended this year." They also were asked to report their level of agreement with three statements about their children's school:

- The school is good at meeting my child's individual needs.
- The principal and assistant principal maintain good discipline at my child's school
- In school, most students and teachers respect each other.

Parents report less favorable perceptions of their children's school in Wave 2 than in Wave 1 (Exhibit 7-1).

**Exhibit 7-1**
**Changes in Parents' Perceptions of the Schools Attended by Students with Disabilities**

| | Wave 1 | Wave 2 | Percentage-Point Change |
|---|---|---|---|
| Percentage with parents reporting satisfaction with: | | | |
| Child's school | | | |
| Very satisfied | 52.8 | 38.1 | -14.7*** |
| Somewhat satisfied | 33.1 | 37.7 | +4.3 * |
| Somewhat or very dissatisfied | 14.1 | 24.2 | +10.1*** |
| How well school keeps me informed of my child's behavior and academic performance | | | |
| Very satisfied | 65.2 | 48.0 | -17.2*** |
| Somewhat satisfied | 23.4 | 33.1 | +9.7*** |
| Somewhat or very dissatisfied | 11.5 | 18.9 | +7.4*** |
| Percentage with parents reporting agreement that: | | | |
| The school is good at meeting my child's individual needs | | | |
| Strongly agree | 35.9 | 31.2 | -4.7* |
| Agree | 48.4 | 54.3 | +5.9** |
| Disagree or strongly disagree | 15.7 | 14.4 | |
| The principal and assistant principal maintain good discipline at my child's school. | | | |
| Strongly agree | 45.5 | 37.1 | -8.4*** |
| Agree | 48.1 | 56.5 | +8.4*** |
| Disagree or strongly disagree | 6.4 | 6.4 | |
| In school, most students and teachers respect each other | | | |
| Strongly agree | 39.4 | 32.3 | -7.1*** |
| Agree | 52.2 | 59.1 | +6.9** |
| Disagree or strongly disagree | 8.4 | 8.6 | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<>01, ***p<.001.

- In Wave 1, about half of parents (53%) reported being "very satisfied" with the school their child attended. In Wave 2, 38% of parents feel this way, a decrease of 15 percentage points. At the same time, the proportions of parents who rate their satisfaction with the schools as "somewhat or very

dissatisfied" rose 10 percentage points, from 14% in Wave 1 to 24% in Wave 2.

- A 17-percentage-point decline is evident in parents being "very satisfied" with how well schools inform them of their children's behavior and academic performance. There are accompanying increases of 10 and 7 percentage points in parents being "satisfied" and "dissatisfied" or "very dissatisfied" with how well schools inform them.
- Smaller declines in positive parental perceptions are indicated in the degree to which they "strongly agree" with three statements about their children's school.
- There are declines of 5 to 8 percentage points in parents strongly agreeing the school meets their children's individual needs and there is good discipline and mutual respect between teachers and students at school. Increases of similar size are evident in parents reporting they "agree" with the statements.
- Despite declines in strong positive perceptions, few parents report dissatisfaction with their children's school or disagreement with positive statements about them.

## Parents' Perceptions of Their Children's School Programs and Services

Parents were asked to report their overall level of satisfaction with "the education services or programs (CHILD) has received this year" and for students who continued to receive special education services, parents were asked their level of satisfaction with "the special education services (CHILD) receives."

Similar to their perceptions of their children's school overall, parents report less favorable perceptions over time regarding their children's education in general and special education services in particular (Exhibit 7-2).

**Exhibit 7-2**
**Changes in Parents' Perceptions of the General and Special Education Programs of Students with Disabilities**

| | Wave 1 | Wave 2 | Percentage-Point Change |
|---|---|---|---|
| **Percentage with parents reporting satisfaction with:** | | | |
| Children's education services or program | | | |
| Very satisfied | 55.2 | 33.9 | -21.3*** |
| Somewhat satisfied | 35.6 | 50.3 | +14.7*** |
| Somewhat or very dissatisfied | 9.1 | 15.8 | +5.4*** |
| Children's special education services | | | |
| Very satisfied | 60.9 | 46.1 | -14.8*** |
| Somewhat satisfied | 26.6 | 34.8 | +7.4*** |
| Somewhat or very dissatisfied | 12.5 | 19.9 | +7.4*** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- There has been a fairly steep 21-percentage-point drop in the percentage of students with disabilities whose parents report being "very satisfied" with the overall education program and services (55% vs. 34%). Most of this change is offset by an increase in parents being "somewhat satisfied" (15 percentage points), but the percentage of students whose parents express dissatisfaction has increased by 5 percentage points.
- There has been a somewhat smaller decrease in likelihood that parents report being "very satisfied" with their children's special education services (15 percentage, points from 61% to 46%). There has been a corresponding increase of 7 percentage points in students with disabilities having parents who report being "somewhat" or "very dissatisfied" (12% vs. 20%).
- It is important to note that despite parents' perceptions being less positive in Wave 2, a minority of students have parents who report dissatisfaction with children's overall school program (16%) or with their special education services (20%).

## Parents' Perceptions of Their Children's Teachers

Parents were asked to report their overall level of satisfaction with "the teachers (CHILD) has had this year" and with "the amount and difficulty of homework" assigned by teachers. They also were asked to report their level of agreement with the statement "teachers maintain good discipline in the classroom."

The pattern of decreased levels of positive perceptions from Wave 1 to Wave 2 is apparent in parent's views of their children's teachers and their homework practices (Exhibit 7-3).

**Exhibit 7-3**
**Changes in Parents' Perceptions of the Teachers of Students with Disabilities**

| | Wave 1 | Wave 2 | Percentage-Point Change |
|---|---|---|---|
| Percentage with parents reporting satisfaction with: | | | |
| Child's teachers | | | |
| Very satisfied | 64.1 | 44.5 | -19.6*** |
| Somewhat satisfied | 25.3 | 39.2 | +13.9*** |
| Somewhat or very dissatisfied | 10.5 | 16.3 | +5.8*** |
| The amount and difficulty of homework assigned by teachers | | | |
| Very satisfied | 41.4 | 23.0 | -18.4*** |
| Somewhat satisfied | 40.2 | 53.3 | +13.1*** |
| Somewhat or very dissatisfied | 18.3 | 23.7 | +5.4** |
| Percentage with parents reporting agreement that teachers maintain good discipline in the classroom | | | |
| Strongly agree | 40.9 | 34.4 | -6.5** |
| Agree | 51.2 | 56.2 | +5.0* |
| Disagree or strongly disagree | 7.9 | 9.4 | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- Whereas almost two-thirds of students had parents who were "very satisfied" with their children's teachers in Wave 1, 44% of students have parents who report this high level of satisfaction in Wave 2, a decline of 20 percentage points.
- In Wave 2, the proportion of students with parents who voice dissatisfaction with teachers increased over Wave 1 (16% vs. 10%).
- Changes in satisfaction with the homework teachers assign mirror those with teachers in general. An 18-percentage-point decline in students having parents who report being "very satisfied" with the amount and difficulty of children's homework is accompanied by a 13-percentage-point increase in parents being "somewhat satisfied" and a 5-percentage-point increase in reports of dissatisfaction.

- A decline of 6 percentage points in students with parents who report they "strongly agree" that teachers keep good discipline in the classroom is accompanied by a 5-percentage-point increase in reports of agreement.
- Despite declines in strong positive perceptions of teachers, the large majority of students with disabilities have parents who are at least somewhat satisfied with teachers and in general agreement that they maintain order in the classroom.

## Differential Changes in Parents' Perceptions across Disability Categories

### Perceptions of Students' School

Changes in parents' perceptions of their children's school were fairly widespread across disability categories (Exhibit 7-4).

- The patterns of declining parent satisfaction with the schools students with disabilities attend and with how well schools keep parents informed about students' behavior and academic performance are noted among students in virtually all disability categories. Only students with traumatic brain injuries do not have parents who are significantly less likely to be "very satisfied" with their schools.
- Declines in parents being "very satisfied" with their children's school range from 8 percentage points among students with other health impairments to 18 percentage points among students with emotional disturbances or orthopedic impairments.
- Declines in high levels of satisfaction with how well schools provide information about their children are larger, ranging from 11 percentage points for students with autism to 23 percentage points among students with speech impairments.
- Declines in strong agreement that schools meet students' individual needs are of similar size and are similarly widespread. They range from a 9-percentage-point decline in strong agreement among parents of students with autism to a 20-percentage point decline among parents of students with orthopedic impairments.
- Students in fewer categories have parents who report lower levels of strong agreement that good discipline is maintained at school and that there generally is mutual respect among teachers and students at school (three and four disability categories, respectively). Declines range from 10 to 15 percentage points across the two factors.
- Declines in positive perceptions of children's school are least apparent among parents of children with autism; a decline is noted only in high satisfaction with schools keeping parents well informed. In contrast, all

aspects of positive perceptions of schools decline among parents of students with speech or orthopedic impairments.

**Exhibit 7-4**
**Changes in Parents' Satisfaction with Children's School, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage whose parents are "very satisfied" with: | | | | | | | | | | | |
| Child's school | | | | | | | | | | | |
| Wave 1 | 49.4 | 60.5 | 51.6 | 43.3 | 53.5 | 57.3 | 54.3 | 43.9 | 47.9 | 46.2 | 50.7 |
| Wave 2 | 35.9 | 44.1 | 36.9 | 25.6 | 42.7 | 45.1 | 36.0 | 30.8 | 39.6 | 34.3 | 37.6 |
| Percentage-point change | -13.5*** | -16.4*** | -14.7*** | -17.7*** | -10.8** | -12.2* | -18.3*** | -13.1*** | -8.3* | | -13.1* |
| How well school informs parents of student's behavior and academic performance | | | | | | | | | | | |
| Wave 1 | 60.8 | 71.1 | 68.6 | 61.6 | 66.8 | 67.0 | 67.6 | 57.7 | 60.9 | 65.2 | 72.6 |
| Wave 2 | 46.8 | 48.4 | 54.8 | 43.7 | 55.0 | 52.3 | 50.6 | 42.1 | 50.0 | 49.2 | 54.5 |
| Percentage-point change | -14.0*** | -22.7*** | -13.8*** | -17.9*** | -11.8** | -14.7** | -17.0*** | -15.6*** | -10.9** | -16.0* | -18.1*** |
| Percentage whose parents "strongly agree" that: | | | | | | | | | | | |
| The school meets student's individual needs | | | | | | | | | | | |
| Wave 1 | 58.0 | 68.2 | 61.4 | 51.6 | 64.8 | 66.2 | 58.5 | 55.1 | 48.5 | 52.1 | 57.6 |
| Wave 2 | 45.1 | 56.2 | 42.3 | 33.2 | 48.1 | 54.1 | 38.3 | 42.0 | 39.5 | 39.1 | 38.9 |
| Percentage-point change | -12.9** | -12.0* | -19.1*** | -18.4*** | -16.7*** | -18.1* | -20.2*** | -13.1*** | -9.0* | | -18.7*** |
| Good discipline is maintained at school | | | | | | | | | | | |
| Wave 1 | 43.8 | 49.4 | 42.2 | 39.6 | 48.4 | 50.3 | 51.3 | 45.8 | 44.8 | 37.8 | 44.1 |
| Wave 2 | 36.6 | 38.8 | 37.5 | 28.9 | 43.2 | 40.7 | 42.9 | 33.3 | 39.9 | 37.8 | 38.4 |
| Percentage-point change | | -10.6** | | -10.7** | | | | -12.5** | | | |
| Most students and teachers respect each other | | | | | | | | | | | |
| Wave 1 | 34.4 | 46.3 | 37.7 | 30.3 | 43.9 | 46.9 | 47.9 | 44.3 | 41.7 | 31.8 | 41.5 |
| Wave 2 | 30.8 | 35.0 | 32.2 | 23.7 | 38.8 | 36.7 | 37.4 | 29.3 | 39.4 | 36.4 | 37.4 |
| Percentage-point change | | -11.3** | | | | -10.2* | -10.5* | -15.0*** | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- In Wave 2, parents of students with emotional disturbances have among the lowest levels of positive perceptions across the indicators included in Exhibit 7-4. Positive perceptions are among the highest for parents of students with visual or hearing impairments.

### Perceptions of Students' School Programs

Widespread declines in strong positive perceptions of students school programs and services are apparent for parents of students in most disability categories (Exhibit 7-5).

- Declines in parents being "very satisfied" with students' overall school programs and services range from 15 to 24 percentage points across eleven of the disability categories.
- Declines of 9 to 20 percentage points are evident in parents reporting they are "very satisfied" with children's special education services.
- Positive perceptions in Wave 2 are most evident for parents of students with speech, hearing, or visual impairments and least apparent among parents of students with emotional disturbances.

**Exhibit 7-5**
**Changes in Parents' Satisfaction with Children's School Programs and Services, by Disability Category**

| | Learning Disability | Speech/ Language Impair-ment | Mental Retar-dation | Emotion-al Distur-bance | Hearing Impair-ment | Visual Impair-ment | Ortho-pedic Impair-ment | Other Health Impair-ment | Autism | Traum-atic Brain Injury | Multiple Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage whose parents report being "very satisfied" with child's: | | | | | | | | | | | |
| Education program and services | | | | | | | | | | | |
| Wave 1 | 51.9 | 63.6 | 51.4 | 45.0 | 54.6 | 57.8 | 53.4 | 50.5 | 49.3 | 51.3 | 56.5 |
| Wave 2 | 32.5 | 39.1 | 35.9 | 22.4 | 39.3 | 42.7 | 37.4 | 29.6 | 34.2 | 35.0 | 33.4 |
| Percentage-point change | -19.4*** | -24.5*** | -15.5*** | -22.6*** | -15.3*** | -15.1** | -16.0*** | -20.9*** | -15.1*** | | -23.1*** |
| Special education services | | | | | | | | | | | |
| Wave 1 | 58.0 | 68.2 | 61.4 | 51.6 | 64.8 | 66.2 | 58.5 | 55.1 | 48.5 | 52.1 | 57.6 |
| Wave 2 | 45.1 | 56.2 | 42.3 | 33.2 | 48.1 | 54.1 | 38.3 | 42.0 | 39.5 | 39.1 | 38.9 |
| Percentage-point change | -12.9** | -12.0* | -19.1*** | -18.4*** | -16.7*** | -18.1* | -20.2*** | -13.1*** | -9.0* | | -18.7*** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

### Perceptions of Students' Teachers

Widespread declines in strong positive perceptions of students' teachers and their homework practices mirror those regarding students' schools and school programs and services (Exhibit 7-6).

- Declines in parents reporting they are "very satisfied" with students' teachers range from 11 to 23 percentage points; only the parents of students with autism do not show a decline in high satisfaction.
- Students in all categories have parents whose levels of high satisfaction with teachers and home work practices have declined over time, ranging from 13 to 27 percentage points
- Declines in positive perceptions of the ability of teachers to keep good discipline in their classrooms is much less widespread and smaller in magnitude. Only students with emotional disturbances or visual or other health impairments have parents who are less likely to "strongly agree" that teachers maintain good classroom discipline, (10 to 13 percentage points).

**Exhibit 7-6**
**Changes in Parents' Satisfaction with Children's Teachers, Homework Assignments, and Classroom Discipline, by Disability Category**

| | 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 Disabili-ties |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage whose parents are "very satisfied" with: | | | | | | | | | | | |
| Children's teachers | | | | | | | | | | | |
| Wave 1 | 59.2 | 72.2 | 64.3 | 54.5 | 63.2 | 71.7 | 66.2 | 60.4 | 64.3 | 57.7 | 66.7 |
| Wave 2 | 40.2 | 50.9 | 45.4 | 35.9 | 52.2 | 56.3 | 47.0 | 37.4 | 51.4 | 43.3 | 49.1 |
| Percentage-point change | -19.0*** | -21.3*** | -18.9*** | -18.6*** | -11.0** | -15.4*** | -19.2*** | -23.0*** | -12.9*** | - | -17.6*** |
| Quantity and difficulty of homework assigned by teachers | | | | | | | | | | | |
| Wave 1 | 37.2 | 48.1 | 42.2 | 35.4 | 41.1 | 39.6 | 42.8 | 34.8 | 37.9 | 39.7 | 52.2 |
| Wave 2 | 19.2 | 28.8 | 24.4 | 17.8 | 25.7 | 26.4 | 22.5 | 16.4 | 22.6 | 21.4 | 24.9 |
| Percentage-point change | -18.0*** | -19.3*** | -17.8*** | -17.6*** | -15.4*** | -13.2** | -20.3*** | -18.4*** | -15.3*** | -18.3* | -27.3*** |
| Percentage whose parents "strongly agree" that teachers maintain good discipline in the classroom | | | | | | | | | | | |
| Wave 1 | 38.4 | 44.4 | 38.6 | 36.0 | 44.7 | 48.5 | 46.9 | 42.9 | 42.0 | 31.4 | 46.6 |
| Wave 2 | 33.5 | 36.7 | 34.4 | 25.7 | 40.4 | 36.7 | 39.3 | 29.8 | 39.4 | 30.6 | 39.4 |
| Percentage-point change | | | | -10.3** | | -11.8* | | -13.1*** | | | |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: *p<.05, **p<.01, ***p<.001.

- As with other aspects of parents' perceptions, parents of students with emotional disturbances tend to have less positive perceptions of teachers than parents of students in other categories and parents of students with hearing or visual impairments tend to have the most positive perceptions.

## Differential Changes in Parent Perceptions across Demographic Groups

Students with disabilities who differ in age, household income, and race/ethnicity have parents who have experienced changes in their perceptions of children's schools, school programs, and teachers differently.[1]

### Age

Although parents' ratings of being "very satisfied" with most aspects of their children's education have decreased for all three age-groups, the declines are uniformly smaller among parents of the oldest students (Exhibit 7-7).

**Exhibit 7-7**
**Parents' Satisfaction with Students' School, School Programs, and Teachers, by Students' Age**

| | Age in Wave 1 | | |
|---|---|---|---|
| | 7 through 9 | 10 through 12 | 13 or 14 |
| Percentage whose parents are "very satisfied" with: | | | |
| Children's school | | | |
| Wave 1 | 57.7 | 50.4 | 44.6 |
| Wave 2 | 43.1 | 35.5 | 30.7 |
| Percentage-point change | -14.6*** | -14.9*** | -13.9* |
| Overall education program and services | | | |
| Wave 1 | 58.3 | 53.7 | 46.6 |
| Wave 2 | 38.5 | 30.7 | 31.7 |
| Percentage-point change | -19.8*** | -23.0*** | |
| Special education services | | | |
| Wave 1 | 65.9 | 58.1 | 52.4 |
| Wave 2 | 51.8 | 41.7 | 46.0 |
| Percentage-point change | -14.1*** | -16.4*** | |
| Children's teachers | | | |
| Wave 1 | 71.0 | 60.9 | 51.5 |
| Wave 2 | 53.4 | 39.4 | 36.7 |
| Percentage-point change | -17.6*** | -21.5*** | -14.8* |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels:
*p<.05, **p<.01, ***p<.001

- Although on all measures, higher satisfaction was evident among parents of younger students in Wave 1, 2 years later, there no longer is a difference across categories in parents' satisfaction with students' programs in general and their special education services in particular.

[1] Because the pattern of change for items reporting parents' agreement with various statements about schools, school programs, and teachers generally mirror changes in their satisfaction, only satisfaction items are reported in this section.

- Satisfaction continues to be higher among parents of younger students regarding their schools and teachers.

### Household income

The decline in high satisfaction ratings is consistent across household income with regard to children's schools, overall school programs, and teachers (Exhibit 7-8).

- Declines in parents being "very satisfied" range from 12 to 16 percentage points regarding schools, 20 to 23 percentage points regarding students' overall school programs and services, and 16 to 23 percentage points regarding students' teachers.
- Parents of students in the highest income group show no decline in their high satisfaction with students' special education services. The lowest and middle income groups show declines of 21 and 14 percentage points, respectively.
- In general, levels of high satisfaction do not differ across income groups at either wave. The exception is that parents of students in the highest income group are more likely than those in other groups to report being "very satisfied" with their children's school.

### Race/Ethnicity

Decreased satisfaction is apparent among all three racial/ethnic groups (Exhibit 7-8).

- As with income differences, declines in parents being "very satisfied" are evident for all racial/ethnic groups with regard to students' schools, overall school programs, and teachers, and the size of the declines do not differ systematically across the groups.
- Also similar to income differences, declines tend to be smaller regarding satisfaction with schools (14 and 18 percentage points) than overall school programs (20 to 23 percentage points) or teachers (18 to 24 percentage points).
- Parents of Hispanic students with disabilities do not share the reduced satisfaction with special education services evinced by parents of white and African-American students (14 and 20 percentage points, respectively).

**Exhibit 7-8**
**Parents' Satisfaction with Students' School, School Programs, and Teachers, by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Percentage whose parents are "very satisfied" with: | | | | | | |
| Children's school | | | | | | |
| Wave 1 | 47.8 | 51.8 | 58.0 | 55.4 | 41.4 | 55.2 |
| Wave 2 | 31.4 | 37.6 | 45.9 | 41.4 | 27.9 | 36.9 |
| Percentage-point change | -16.4*** | -14.2*** | -12.1** | -14.0*** | -13.5** | -18.3** |
| Overall education program and services | | | | | | |
| Wave 1 | 55.1 | 53.4 | 57.9 | 56.0 | 48.3 | 61.4 |
| Wave 2 | 31.9 | 33.7 | 35.4 | 35.0 | 28.8 | 38.1 |
| Percentage-point change | -23.2*** | -19.7*** | -22.5*** | -21.0*** | -19.5*** | -23.3** |
| Special education services | | | | | | |
| Wave 1 | 63.7 | 59.0 | 57.8 | 62.2 | 53.7 | 64.6 |
| Wave 2 | 42.7 | 45.4 | 50.5 | 48.2 | 33.2 | 56.6 |
| Percentage-point change | -21.0*** | -13.6** | | -14.0*** | -20.5*** | |
| Children's teachers | | | | | | |
| Wave 1 | 63.6 | 63.2 | 65.4 | 65.8 | 58.8 | 62.0 |
| Wave 2 | 40.5 | 43.1 | 49.2 | 47.1 | 34.5 | 44.3 |
| Percentage-point change | -23.1*** | -20.1*** | -16.2*** | -18.7*** | -24.3*** | -17.7** |

Source: SEELS parent interviews, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level: *p<.05, **p<.01, ***p<.001.

- Across the measures, parents of African-American students with disabilities are less likely to be "very satisfied" with their children's schools, school programs, and teachers than parents of white or Hispanic children.

## Summary

This chapter has examined changes in the way parents perceive their children's schools, education programs and teachers. Overall, there was a noticeable decline in parents' satisfaction with their children's school, teachers, and education programs in Wave 2. Parent report of being "very satisfied" with these aspects of their children's education decreased considerably from Wave 1 by 15 to 20 percentage points. At the same time the proportions of students with disabilities whose parents report being "somewhat to very dissatisfied" rose 6 to 10 percentage points in Wave 2. This pattern of declining parent satisfaction is consistent across all disability categories, age groups, income levels, and racial/ethnic groups.

In almost all aspects of parent perceptions highlighted in this chapter, parents of student with emotional disturbances tend to have less positive viewpoints than do parents of students in other disability categories. Parents of students with hearing or visual impairments tend to have the most positive perceptions.

### Changes in Parent Perceptions of their Children's Schools

The proportions of students with disabilities whose parents report being "very satisfied" with their children's school decreased 15 percentage points from Wave 1. At the same time, expressions of dissatisfaction with the schools rose 10 percentage points in Wave 2. There also is a 17-percentage-point decline in parents' strong positive perceptions of how well schools inform them of their children's behavior and academic performance. The corresponding trend towards being less satisfied includes a 7-percentage-point increase in parents reporting being "somewhat or very dissatisfied," sending a clear message that parents want consistent information about how their children are doing in school.

The patterns of decreasing parent satisfaction with the schools students with disabilities attend and with how well schools keep parents informed about students' behavior and academic performance are noted among students in virtually all disability categories. The decline in strong positive parent perceptions of their children's school is greatest for students with emotional disturbances or orthopedic impairments (18 percentage points). Students with speech impairments have parents with the largest decline in expressions of high satisfaction with how well schools inform them of their children's progress (23 percentage points).

Most students with disabilities have parents who agree that the administration at their children's schools maintains discipline and that there is mutual respect among teachers and students, although parents are less likely to report strong agreement in Wave 2. A similar trend is evident in parents' opinions regarding how well the school is meeting their children's individual needs; however it is important to note that in both Waves 1 and 2 about 15% of students with disabilities have parents who do not feel their children's needs are being met.

Declines in strong agreement that schools meet students' individual needs is apparent across all disability categories with the largest decrease (20 percentage points) among parents of students with orthopedic impairments. Students in only three categories have parents who report lower levels of strong agreement that good discipline is maintained at school. Students with other health impairments have parents who express the largest decrease in strong agreement that there is mutual respect among teachers and students at school.

### Changes in Parent Perceptions of their Children's School Programs and Services

There is a considerable decline in the proportions of students with disabilities whose parents report being "very satisfied" with their children's education in general (21 percentage points) and special education services in particular (15

percentage points). Most of the change is offset by an increase in parents being "somewhat satisfied;" however there is an increase of 5 and 7 percentage points of parents reporting dissatisfaction with their children's education programs and services. Although parent perceptions of school programs are generally positive, one in five students with disabilities has parents who are somewhat or very dissatisfied with their children's special education services.

Widespread declines in strong positive perceptions of students' general and special education programs and services are apparent for parents of students in almost all disability categories. Positive perceptions in Wave 2 are most evident for parents of students with speech, hearing, or visual impairments and least apparent among parents of students with emotional disturbances.

## Changes in Parent Perceptions of their Children's Teachers

Similar patterns of decreased levels of positive perceptions from Wave 1 to Wave 2 are apparent in parents' views of their children's teachers and their homework practices. There is a notable decline of about 19 percentage points in parent expressions of strong satisfaction with children's teachers, and with the amount and difficulty of homework. Although most of this decline appears in more parents reporting being satisfied but to a lesser degree (from "very" to "somewhat"), there is a 5-percentage-point increase in parents reporting dissatisfaction with their children's teachers and homework assignments. In Wave 2, almost one-quarter of students with disabilities have parents who are "somewhat or very dissatisfied" with their children's homework.

Despite a 6-percentage-point decline in strong positive agreement that teachers maintain order in their classrooms, a large majority of students with disabilities have parents who are at least somewhat satisfied with teachers and in general agreement that they maintain good discipline in the classroom.

Students in all disability categories have parents whose levels of high satisfaction with teachers and their homework practices have declined over time. Only students with emotional disturbances or visual or other health impairments have parents who are less likely to express strong agreement that teachers maintain good classroom discipline.

## Differential Changes in Parent Perceptions across Demographic Groups

Students with disabilities who differ in age, household income, and race/ethnicity have parents who have expressed changes in their perceptions of their children's schools, education programs, and teachers. There is a decrease in high levels of parent satisfaction with most aspects of their children's schools for all three age groups (7 through 9, 10 through 12, and 13 or 14); however the declines are uniformly smaller among parents of the oldest students. The decline in high satisfaction ratings is consistent across household income and racial/ethnic groups in regard to children's school, overall school programs, and teachers. Students in the highest income group and Hispanic students have parents who do not share the reduced satisfaction with their children's special education services

expressed by parents of students in the lowest or middle income groups, or parents of white and African American students.

## Conclusion

It is apparent that there is a growing discontent among parents of students with disabilities in regard to their schools their children attend, the education programs and special education services their children receive, and their children's teachers. In most cases, parents of students in all disability categories, age groups, household incomes, and racial/ethnic groups consistently express decreasing satisfaction with these aspects of their children's education. It is important to explore whether these declines in positive parent perceptions continue to decrease as children with disabilities transition into high school; and if they do, why.

# 8. *Changes in the School Engagement and Academic Performance of Students with Disabilities*

*By Jose Blackorby and Renée Cameto*

This chapter looks at change from one school year to the next in the experiences of students with disabilities in two areas of critical concern: engagement in school and academic performance. *Engagement, Academics, Social Adjustment, and Independence: The Achievements of Elementary and Middle School Students with Disabilities* (Blackorby, Wagner, Cameto, et al., 2004) paints a portrait of diversity in school engagement and academic performance both within and across disability categories. Most students with disabilities are reported to enjoy school, be motivated for schooling, and engage in classroom activities. Further, most students with disabilities receive grades at the positive end of the spectrum. In contrast, student performance on standardized tests suggests that many, if not most students with disabilities have significant deficits in core academic skills when compared with general education peers—deficits that are likely to present obstacles as they move into higher grades and more challenging academic work.

Several factors could contribute to this mix of findings changing over time. Regarding school engagement, for example, there is a well-researched tendency for students to be less engaged with school as they enter adolescence (Sabournie, 1994). Further, the diversity both within and across disability categories in engagement and performance suggests differences also might be reflected in different longitudinal patterns. There also could be variation in these trends across demographic characteristics or other features of students' school programs.

The following sections describe changes in a 1-year period in multiple measures of the school engagement and academic achievement of students with disabilities. Findings are reported for students with disabilities as a whole and for students who differ in their primary disability category, age, and selected demographic and school program characteristics when significant.

## School Engagement

The extent to which students participate actively in their educational experiences can have critical and lasting implications. Poor engagement in school has been identified as a strong predictor of academic failure (Donahoe & Zigmond, 1990; Hudley et al., 2002; Schellenberg, Frye, & Tomsic, 1988; Wagner et al., 1991). Low achievement, in turn, is a precursor to dropping out (Redd, Brooks, & McGarvey, 2001). Students need reasons to be enthusiastic about and dedicated to school, and many students with disabilities are considered to be at risk for lack of engagement because of difficulties faced at school.

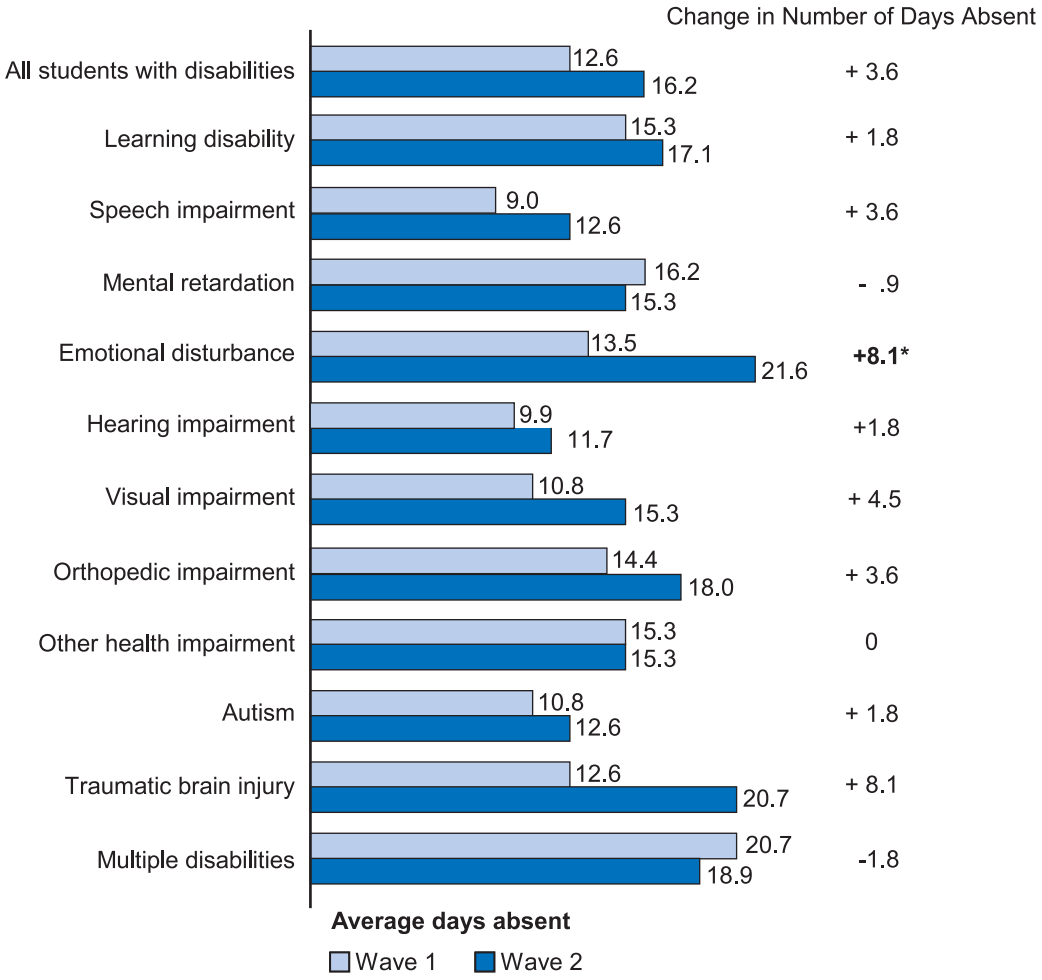
Analyses from Wave 1 of SEELS suggest that elementary and middle school students with disabilities are generally positively engaged, are reported to enjoy school, have relatively high motivation for schooling, and many are reported by their teachers to exhibit positive classroom behaviors. However, students with emotional disturbances stand out from their peers in other disability categories in having less positive results on most dimensions of engagement. Their peers with hearing or visual impairments generally have among the highest school engagement profiles. Wave 2 findings related to student engagement parallel Wave 1 results in the aggregate, with no significant changes in measures for students with disabilities as a group. However, changes vary among students in different disability categories over the 1-year time period, and when looking beyond aggregate measures, there is considerable fluctuation in some aspects of individual students' engagement. The following sections consider aggregate and individual change in the following aspects of engagement, including absenteeism, motivation for schooling, and classroom behavior.

## Absenteeism

A fundamental dimension of school engagement is simply whether students physically make it to school. Although absenteeism can be either involuntary (e.g., caused by health problems) or voluntary (i.e., students "skipping school"), high levels of absenteeism can contribute to lower grades and ultimately the failure to attain a diploma. Each missed day limits exposure to instructional materials and activities, and cumulatively, they can affect the ability to keep up, move to the next grade level, and in high school, and accumulate credits toward graduation. Absenteeism among students with disabilities is fairly high (Exhibit 8-1).

- In Wave 2 the estimated absenteeism of students with disabilities is more than 3 weeks of school, or almost 9% of a 180-day school calendar.
- Only among students with emotional disturbances is there a meaningful increase in absenteeism over the 1-year period (8 days per year)
- There is significant variation in absenteeism by disability category. In Wave 2, students with emotional disturbances, orthopedic impairments, traumatic brain injuries, or multiple disabilities have the highest levels of absenteeism—from 18 to 22 days per year; students with speech or visual impairments or autism are absent the least—an average of 12 or 13 days.

**Exhibit 8-1**
**Changes in Absenteeism, by Disability Category**




Source: SEELS school program questionnaires, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level:
* p < .05.

- Students aged 10-12 in 2001 were absent nearly 5 additional days while both younger and older peers rates were virtually unchanged.
- Changes in absenteeism across other demographic categories are not significant.

## Student Motivation for School

The psychological dimension of engagement at school reflects the extent to which a student identifies with the school environment (Finn, 1993; Hudley, 2002). Students who have positive feelings about school are more likely than other students to attend school and participate fully in their educational experience. Students' motivations, their overall attitudes toward coming to

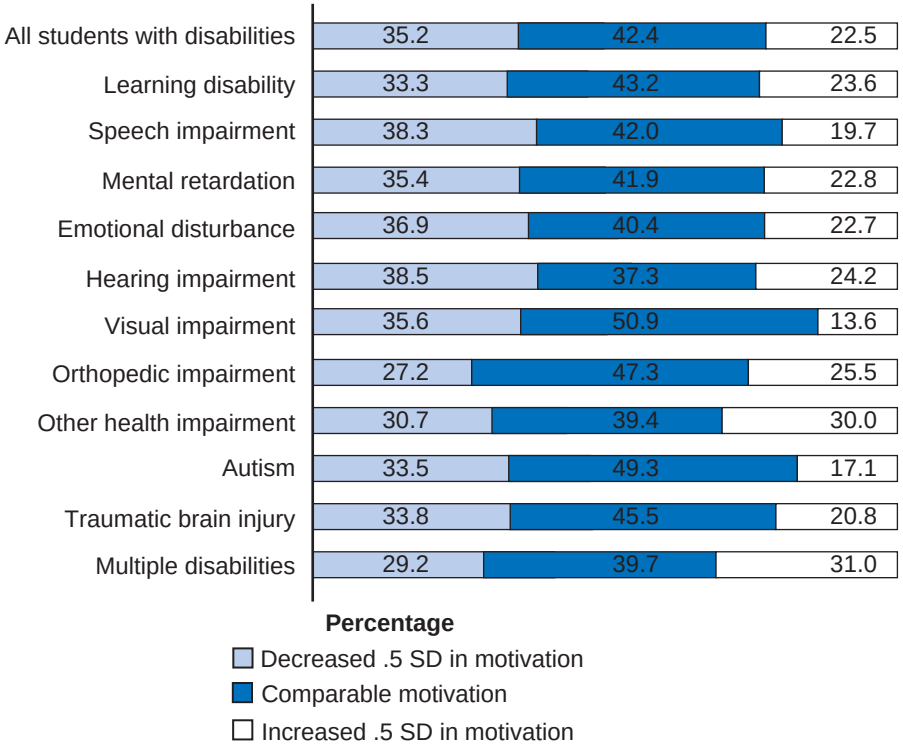
school each day, and their disposition while they are there are other psychological indicators of their engagement at school. SEELS uses the School Attitude Measure (Wick, 1990) to assess the psychological aspects of student engagement. It includes responses to statements such as: "School is the best place for me to learn," "I look forward to each new school year", "I am glad that I have many more years of school". A scale has been created from these responses to assess overall motivation for schooling (please see Appendix A for details regarding this scale).

In Wave 1, students with disabilities demonstrated a range of levels of motivation for schooling, but high levels of motivation were more common than low ones.

- A year later, in the aggregate, student motivation for schooling remains generally high, with no significant change over time in either the percentage scoring high or low for students with disabilities as a whole. Overall, 42% of students with disabilities are highly motivated toward schooling and 16% have low motivation in Wave 2.
- There is a large reduction in high scores on motivation for schooling among students with visual impairments (20 percentage points). Whereas in Wave 1, these students had among the largest proportion of highly motivated students, in Wave 2, they are well below students with disabilities as a whole on this measure.
- An increase in the level of low motivation is apparent among students with mental retardation (13 percentage points). Nonetheless, this group has the largest share of students with high motivation of the disability categories (53%) in Wave 2.
- In addition, at the individual level there is considerable fluctuation in this dimension of engagement (Exhibit 8-2)[1].

[1] Categories for increase or decrease in motivation were set to changer greater or less .5 of the standard deviation of the motivation scale.

**Exhibit 8-2**
**Fluctuation in Students' Motivation for Schooling, by Disability Category**




Source: SEELS student attitude questionnaires, Waves 1 and 2.

- Most students (42%) are about as motivated for school in Wave 2 as in Wave 1, but more than one in three are reported to be less motivated than in the previous year, and 23% are more motivated than previously.
- Stable levels of motivation are most apparent among students with visual impairments or autism; about half of these students show similar levels of motivation for school in both waves.
- Reductions in motivation range from 27% and 29% for students with orthopedic impairments or multiple disabilities, respectively, to 38% among students with speech or hearing impairments.
- Increases in motivation are least common among students with visual impairments or autism (14% and 17%) and most common among those with other health impairments (30%).
- Increases in motivation for schooling are about as common for students in disability categories with high Wave 1 levels (e.g., students with speech impairments or mental retardation) as with lower levels a year earlier (e.g., students with emotional disturbances).
- Fluctuation in student motivation is not related to student demographic characteristics.

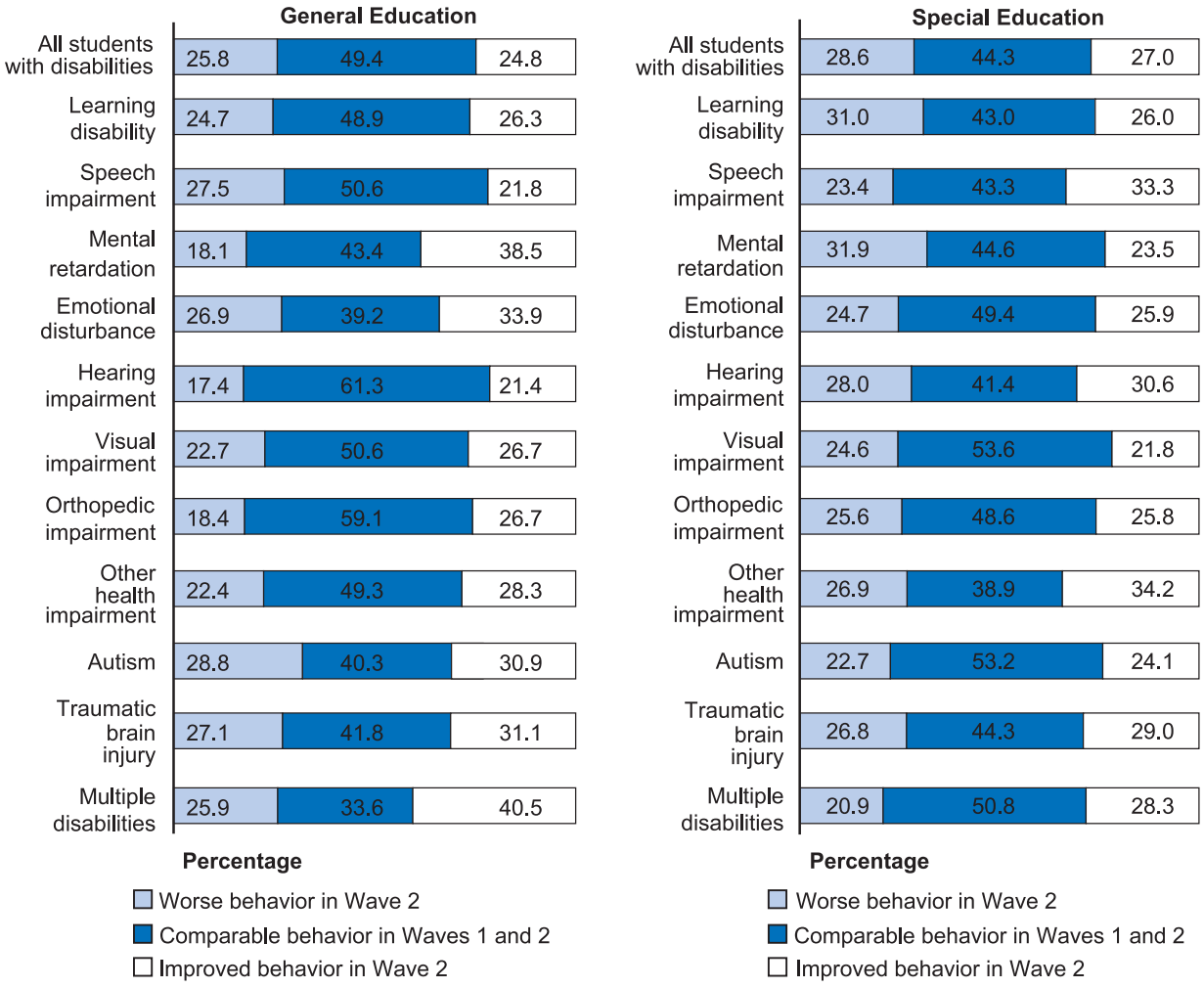
## Classroom Behavior

SEELS is investigating the behavioral dimension of engagement at school by using a scale of language arts teachers' ratings of the frequency that students complete homework on time, take part in group discussions in their classes, perform difficult tasks independently, and persevere until completing a task.[2] In Wave 1, levels of classroom behavior varied considerably by disability category and instructional setting. Students in many disability categories were more likely to be highly engaged when they were in a general rather than special education language arts class. Students with mental retardation showed the opposite pattern; they were more likely to be highly engaged when they were in a special education class. Students with learning disabilities, emotional disturbances, or autism were about as likely to be highly engaged in either setting. A year later, the Wave 2 classroom behavior scale generally mirrors the Wave 1 results; however, there is some fluctuation at the individual level (Exhibit 8-3).

- While the aggregate differences in classroom behavior ratings persist in Wave 2, the fluctuation between improved, stable, or worsened behavior is comparable in the two settings.
- Students with disabilities are more likely to exhibit stable classroom behaviors than to exhibit either improved or worsened behavior.
- In general education settings, the range in the number of students exhibiting improved behavior ranges from 39% (students with mental retardation) to 21% (students with hearing impairments).
- In special education settings, the range in the number of students exhibiting improved behavior ranges from 34% (students with other health impairments) to 22% (students with visual impairments).
- Students with hearing or orthopedic impairments are most likely to exhibit stable behavior in general education settings.
- Fluctuation in student behavior in both settings is not related to student demographic characteristics.

[2] Ratings are reported on a 3-point scale ranging from "never" to "very often."

**Exhibit 8-3**
**Fluctuation in Students' Classroom Behaviors, by Disability Category and Language Arts Setting**




Source: SEELS teacher & school program questionnaires, Waves 1 and 2.

## Suspensions and Expulsions

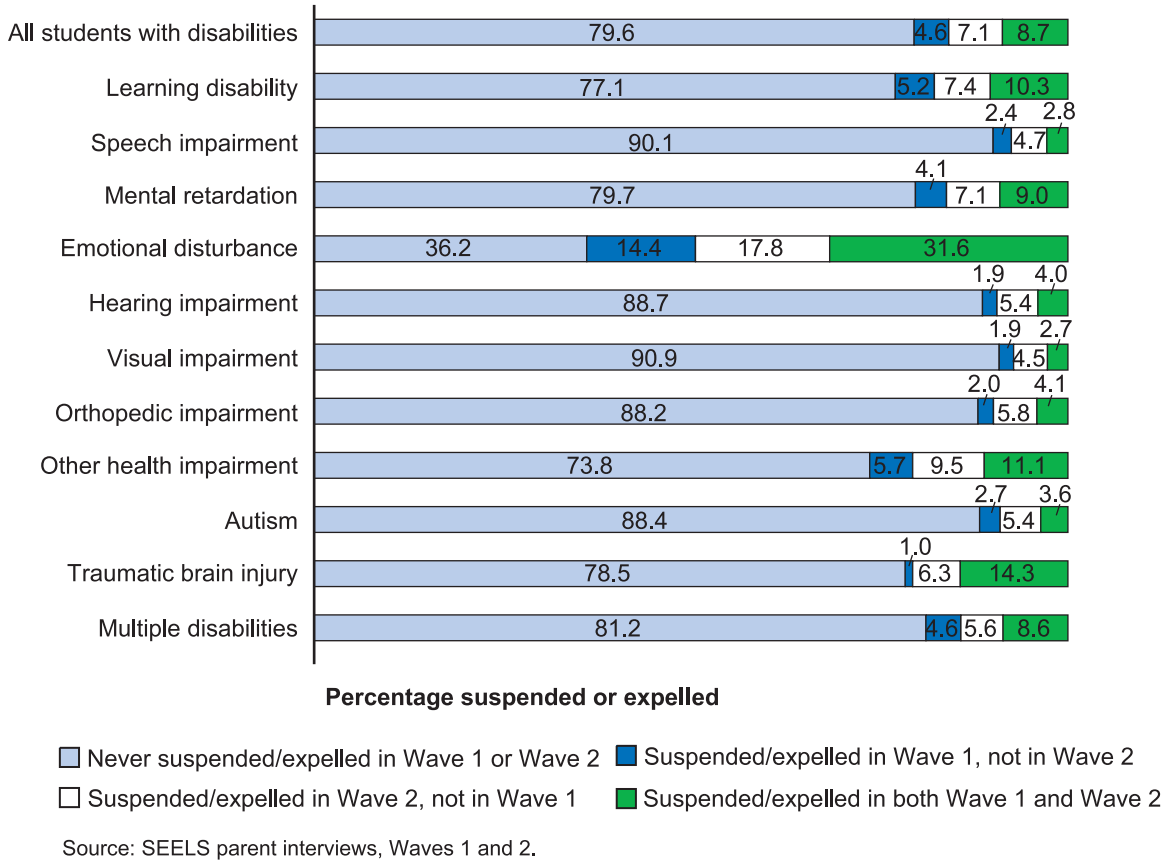
Like all organizations, schools have rules that govern student conduct and behavior and have procedures for disciplining students who break those rules. When events or behaviors are considered serious violations, schools use the mechanisms of "in-school" and "out-of-school" suspensions to seek improved behavior. For in-school suspensions, students are typically taken out their usual classroom routine for a period ranging from hours to days. Out-of-school suspensions require that students not to attend school at the specified period that can last from days to a week or more. In cases of extreme violations, schools may expel students. The behaviors that lead to these actions can represent low engagement and is linked to school dropout (Bock, Tapscott, & Shavner, 1998).

In Wave 1, although some students in all categories had been suspended or expelled at some time in their school careers, students with serious emotional disturbances had been subject to these disciplinary actions at school far more frequently. For example, nearly 50% of students with serious emotional disturbances in elementary and middle school had been suspended or expelled at some time in their school careers. Students with learning disabilities (16%), other health impairments (17%) and traumatic brain injuries (15%) all had been suspended or expelled at rates not markedly above the general population (13%), but still far below that of peers with emotional disturbance.

In addition to the aggregate changes over time in the number of students with disabilities who have been suspended or expelled, individual fluctuation also illustrates variation in students' behavior and/or the response of schools to it among different groups. Exhibit 8-4 displays 4 categories of students with respect to the longitudinal pattern of suspensions and/or expulsions: (1) Not suspended or expelled in either Wave 1 or Wave 2; (2) Suspended or expelled in Wave 1 but not in Wave 2; (3) Not suspended or expelled in Wave 1 but was in Wave 2; and (4) Suspended or expelled in both Wave 1 and Wave 2.

- As one would expect with the passage of time, in Wave 2, more students with disabilities have been suspended or expelled at some point in their school careers. The overall increase is 7 percentage points, bringing the rate to 20%. This includes 9% of students suspended or expelled in Wave 1 and Wave 2, 5% suspended in Wave 1 but not Wave 2, and 7 percent who were suspended or expelled for the first time in Wave 2.
- Increases in new and repeated suspensions/expulsions are evident for students in most disability categories. Increases in the total rates after Wave 2 range from 5 percentage points among students with speech or hearing impairments or autism to 18 points among students with emotional disturbances.
- The suspension/expulsion rate for students with emotional disturbances (64%) approaches three times that of students in any other category and nearly one in three of these students was suspended or expelled in both Waves, more than twice the rate of the next highest categories (i.e., learning disabilities, other health impairments, traumatic brain injuries).
- Only about 1 in 10 students with speech, hearing, or visual impairments have been suspended or expelled by Wave 2, representing the lowest among all disability categories.

**Exhibit 8-4**
**Changes in Suspensions or Expulsions of Students with Disabilities, by Disability Category**

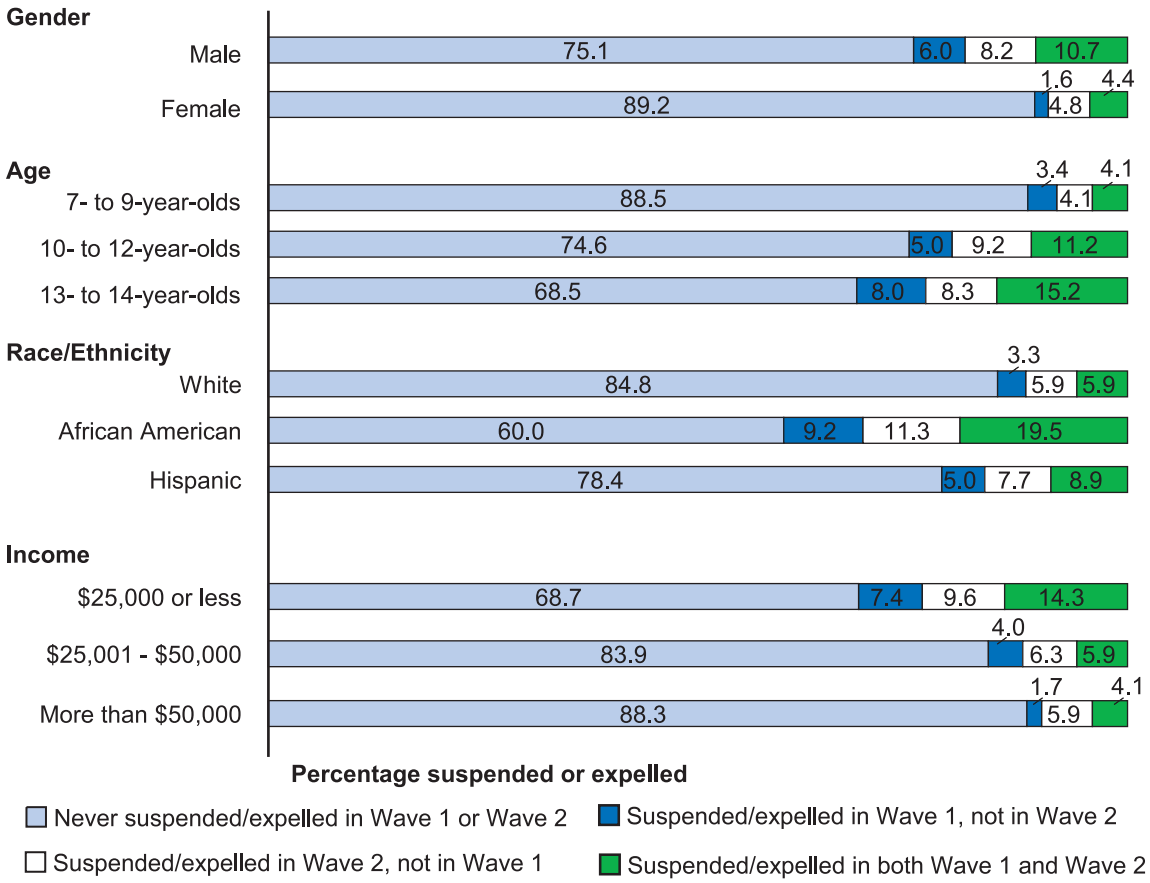



Source: SEELS parent interviews, Waves 1 and 2.

Exhibit 8-5 displays fluctuations with respect to the longitudinal pattern of suspensions and/or expulsions across student demographics.

- Consistent with the general population (Zoccolillo, 1993), boys with disabilities are more likely than girls to have been suspended or expelled (25% vs. 11%) and to have been expelled repeatedly (i.e., in both waves, 11% vs. 4%).
- African-American students are more likely than white peers to have been suspended or expelled (40% vs. 15%) and to have been subjects to these actions repeatedly (20% vs. 6%).
- Low-income students are more likely than their higher income counterparts to be suspended or expelled at all (69% vs. 84% and 88%) and repeatedly (14% vs. 6% and 4%).

**Exhibit 8-5**
**Changes in Rates of Suspensions and Expulsions of Students with Disabilities, by Students' Demographic Characteristics**




Source: SEELS parent interviews, Waves 1 and 2.

## Academic Performance

Student learning is the business of education. It is the primary purpose of schools, and the widespread evidence of inadequate student performance has made it the centerpiece of the most recent period of systemic and accountability reforms. Improving academic performance is the primary objective of the *No Child Left Behind Act of 2001* in its efforts make schools and school districts accountable for assessing and improving student performance annually (Linn, Baker, & Betebenner, 2002). Further, limitations in academic achievement represent the primary implication of disability for most students receiving special education services, and those limitations constrain their ability to be successful in school. In Wave 1, SEELS provided a national perspective on academic performance of students with disabilities from multiple perspectives, including teacher-given grades, deviations from expected grade-level performance in reading and mathematics, and standardized test scores in reading and

mathematics (Woodcock, McGrew, & Mather, 2001). The following sections consider changes in aggregate and individual performance on these measures one year later.

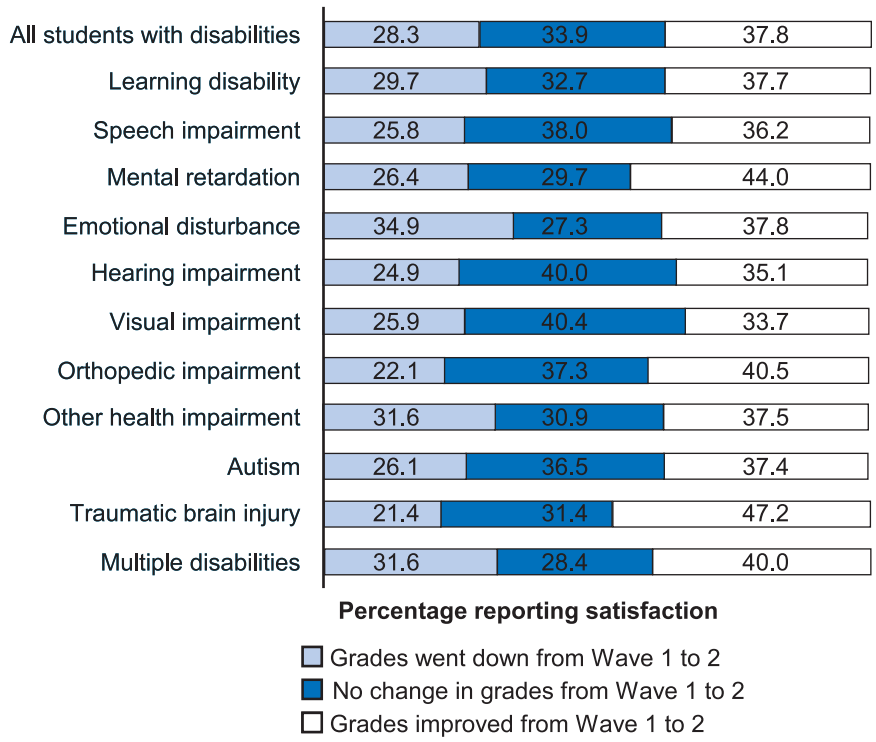
### Students' Grades

Although teacher-given grades have well known limitations related to grading standards and criteria and to their general reliability, teachers' evaluations of performance, as indicated by course grades, represent a common metric of student performance that is tied to the day-to-day business of teaching and learning. Grades communicate to students and parents information about students' mastery of course content and overall performance in class. When students reach secondary school, course grades become an important part of applications to postsecondary education. In both waves, students with disabilities generally received high grades; in Wave 2, 40% receive mostly As or Bs, according to parents' reports. Eleven percent are reported to be getting mostly Ds or below. This pattern of higher grades as students age suggests that students are continuing to make progress toward curriculum goals, in the judgment of the teachers.

- As observed in other domains, there is considerable fluctuation at the individual level. Thirty-eight percent of students with disabilities have seen their grades improve over a 1-year period, whereas 28% have seen them decline (Exhibit 8-6).[3]

[3] Increase or decrease in grades was defined by a difference between Wave 1 and Wave 2 equal to at least one category on the 9-category grade scale.

**Exhibit 8-6**
**Fluctuations in Grades, by Disability Category**




Source: SEELS parent interviews, Waves 1 and 2.

- Improvements generally outnumber declines in grades for students in most categories, particularly those with mental retardation (44% have improved, 26% have declined), orthopedic impairments (40% improved vs. 22% declined) or traumatic brain injuries (47% improved vs. 21% declined).
- Students with emotional disturbance are the most likely to have lower grades in Wave 2 than in Wave 1 (35%).
- Students in grades 6 and above (33%) are more likely to see lower grades over time than their peers in lower grades (24%).
- Compared to girls (23%), boys are more likely to see declines in their grades (31%).
- Increases in grade performance are more common among students from middle and low-income households (41%) than among peers from higher income ones (33%).

## Standardized Test Scores

**Reading.** SEELS uses research editions of the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001) to conduct standardized assessments of reading ability. The WJ III passage comprehension test presents students with a series of items requiring a "fill in the blank" response, which are ordinally ranked

in difficulty. The least difficult items present a sentence in conjunction with a graphic representation and students must provide the appropriate word to complete the sentence. The more difficult items are entirely text-based, address more technical topics, and require both greater vocabulary and ability to make inferences from context.

SEELS analyses include reports of students' raw scores, which are converted into standard scores for comparisons with same age peers in the general population. So, for example, students who provide the same number of correct responses in Wave 2 and Wave 1 would have the same raw score and difference of 0. However, the standard scores are calculated relative to the norm sample, so the student whose score does not differ over time would have a negative score because same-age peers generally would have improved over that interval. Performance also is reported relative to the percentile rank of the norm sample; for example, 50% of same-age peers in the general population score at or below the 50th percentile.

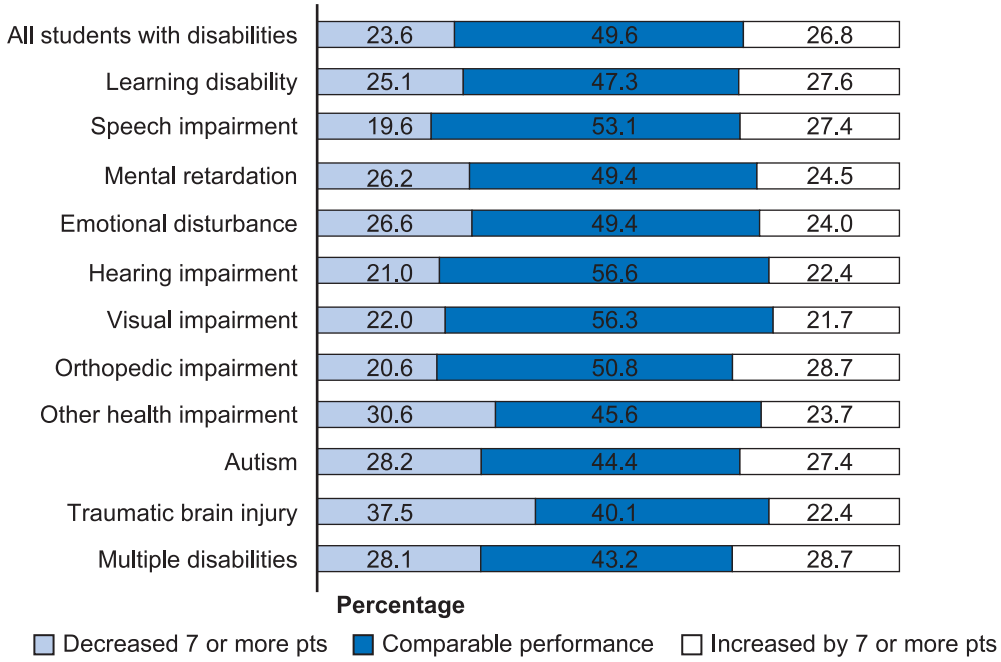
The performance of students with disabilities as a group has changed little over the single-year period. About 63% of students with disabilities have scores that fall at or below the 25$^{th}$ percentile at both time points, and the average achievement in reading is similar in Wave 1 (24$^{th}$ percentile) and Wave 2 (25$^{th}$ percentile). However, at both points in time, there is diversity in performance both within and across disability categories. In each disability category, there are students who perform close to peers in the general population. For example, at both points in time, students with speech or visual impairments have the highest scores and have distributions most like the general population. Students with mental retardation or multiple disabilities have the lowest scores.

Although the aggregate picture is one of consistency over time, there are some students who gain ground and others who lose ground relative to the general population over the single year period (Exhibit 8-7).[4]

- Nearly equal proportions of students with disabilities have meaningfully improved their performance (i.e., increased by 7 or more raw score points) as have lowered their performance (decreased by 7 or more raw score points) in reading comprehension in Wave 2 compared with Wave 1 (27% and 24%).

[4] The categories of "increased" and "decreased" performance were defined as 7.5 standard score points as this represents .5 of a standard deviation of the WJ III standard score scale and, in effect size terms, could be considered educationally meaningful.

**Exhibit 8-7**
**Fluctuation in Scores of Reading Passage Comprehension, by Disability Category**




Source: SEELS WJIII (research version), Waves 1 and 2.

- Students in all disability categories include those who improved as well as those who lost ground.
- Across disability categories, the percentages of students whose scores have improved are very similar; they range from 22 % (students with traumatic brain injuries) to 29 % (students with orthopedic impairments).
- Across disability category, the number of students whose scores worsened range more broadly, from 20 % (students with speech impairments) to 38 % (students with traumatic brain injuries).
- Students with among the highest scores in both Waves 1 and 2 had the most stable scores, including students with visual (56%) or hearing impairments (57%).

**Mathematics.** As well as reading, SEELS uses research editions of the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001) to conduct standardized assessments in mathematics. The WJ III calculation subtest measures students' computation skills, using a worksheet that presents the problems. An important characteristic of these problems is that the employed notation signals the operation (e.g., addition, etc.) that is required to produce the correct result. If the student understands the notation, then it tests his/her ability

to perform it accurately. The least difficult items are simple single digit addition problems, whereas the most difficult ones require knowledge of calculus.

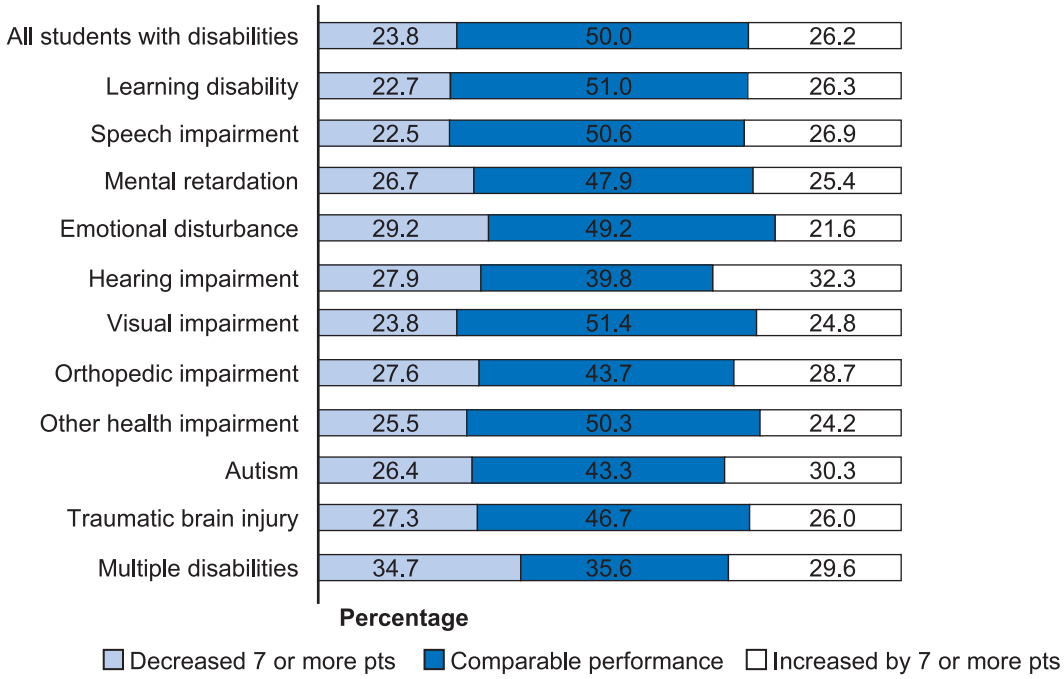
Analyses of WJ III mathematics calculation show comparable scores for Wave 1 and Wave 2 both within and across disability category, although students in virtually all disability categories exhibit higher scores in mathematics than reading. In Wave 2, 40% of students with disabilities score at or below the 25th percentile. Average achievement in mathematics is comparable in Wave 1 (36th percentile) and Wave 2 (38th percentile).

Similar to the results regarding passage comprehension, there is diversity in performance both within and across disability categories. Although scores below the 25$^{th}$ percentile are the most common for students in all disability categories, there are many more students in all disability categories with scores approaching and, in some cases, exceeding the general population mean. As was the case with reading comprehension, students with speech or visual impairments have the highest scores and show distributions most like the general population. Students with mental retardation or multiple disabilities have the lowest scores.

Also similar to test results for reading comprehension, the aggregate findings of stability over time mask considerable fluctuation in individual student math performance over the single year period (Exhibit 8-8).

- The percentage of students with disabilities whose math calculation performance improved significantly (i.e., increased by 7 or more points) is comparable to the percentage of their peers who did worse (i.e., decreased by 7 or more percentage points); 26% of students with disabilities showed this level of improvement or more, and 24% showed this level of decline or more.

**Exhibit 8-8**
**Fluctuations in Mathematics Calculation Scores, by Disability Category**




Source: SEELS WJIII (research version), Waves 1 and 2.

- Some students in all categories improved and some lost ground from Wave 1 to Wave 2. However, stable scores are most common for students in most disability categories.
- Across disability categories, the percentage of students whose scores improved ranges from 22% (students with emotional disturbances) to 32% (students with hearing impairments).
- Across disability categories, the percentage of students whose scores declined ranges from 23% (students with speech impairments) to 35% (students with multiple disabilities).
- Students with learning disabilities, speech impairments, visual impairments, or other health impairments have the most stable mathematics scores, relative to students with hearing impairments.

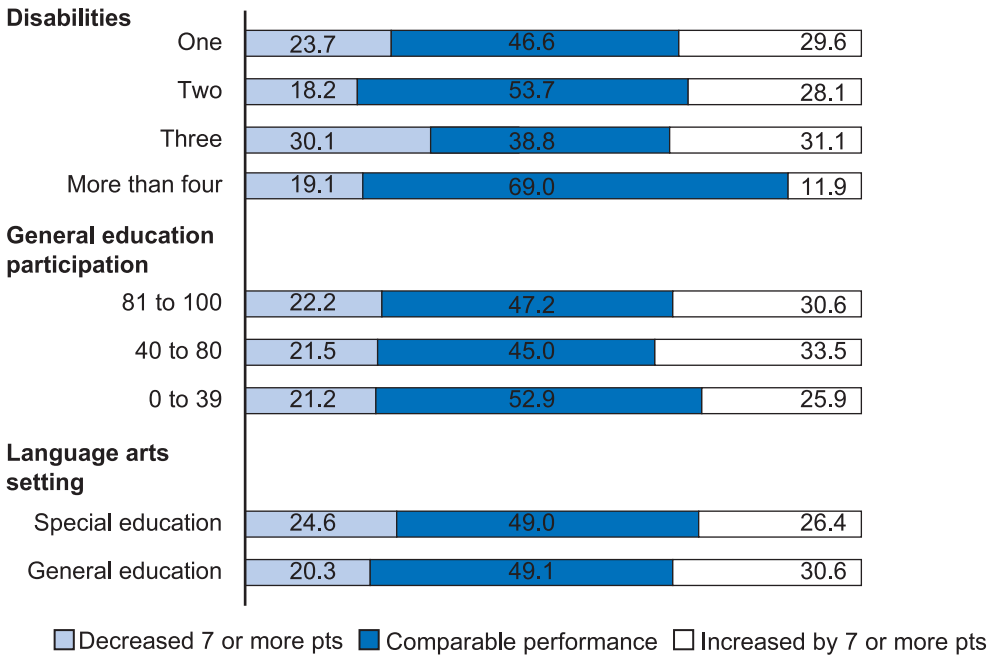
## Fluctuation in Performance by Functioning and Program Characteristics

Analyses of performance data from both Wave 1 and Wave 2 illustrate wide variation in light of student functioning and school program characteristics. For example, in both waves, students whose teachers report that they have a greater number of disabilities have significantly lower test scores in reading and mathematics than peers with just one affected domain. Similarly, from a programming perspective, students with disabilities who receive language arts instruction in a general education setting, or spend more time in general

education settings generally, also have higher test scores in both reading and mathematics. It reasonable to pose the question about the level of individual change in performance in light these kinds of characteristics as shown in Exhibit 8-9.

- While aggregate performance levels favor students with fewer identified disabilities, in terms of fluctuation across waves, comparable performance in comprehension represents the largest category for students in all severity groups, dramatically so students identified with four or more disabilities (69%).
- Similar proportions of student in all four groups are equally likely to see their reading comprehension scores improve as to see it decline.
- Students with four or more identified disabilities are less likely to see significant improvements in reading comprehension (12%) than peers with fewer disabilities (28% to 31%).
- Although there are significant differences in reading achievement with the amount of time students spend in general education settings, these differences are not reflected in fluctuations at the individual level. Those who spend more time in general education settings are not more likely to be either improving or declining in reading comprehension relative to students who spend more time in special education classes.
- Similarly, students who have special education as their primary language arts class are just as likely to improve in reading comprehension as their peers who receive language arts instruction in general education settings, although the aggregate achievement differences between the two groups of students remains large.

**Exhibit 8-9**
**Fluctuations in Measures of Passage Comprehension, by Number of Students' Disabilities, Level of Participation in General Education, and Students' Language Arts Setting**



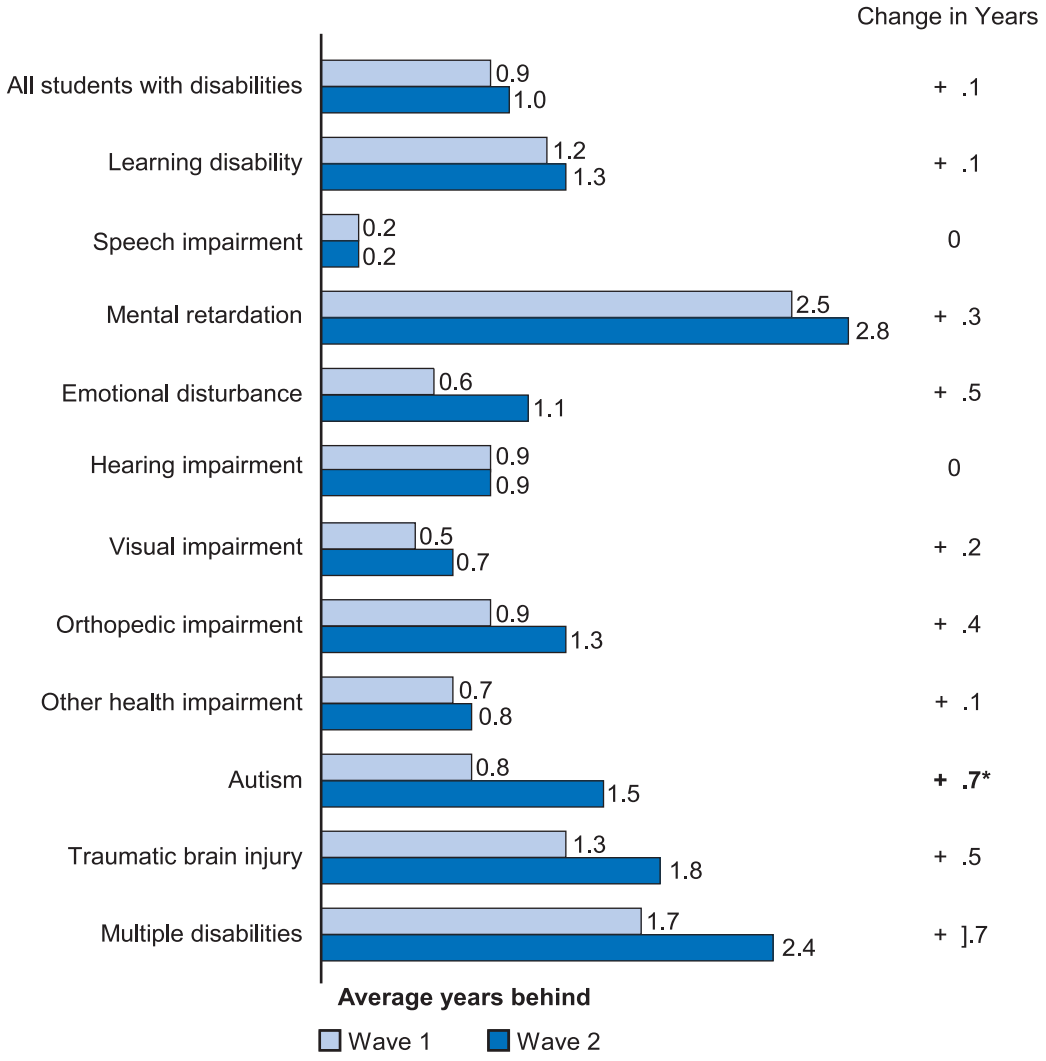

Source: SEELS WJIII, parent interviews, teacher and school program questionnaires, Waves 1 and 2.

## Expected Grade Level Performance

**Reading.** SEELS calculates a measure of the deviation between the actual grade level of students with disabilities and the grade-level equivalent of their tested performance in reading and mathematics. This measure indicates how far ahead or behind their actual grade level that students are functioning. (Exhibit 8-10)

- In both waves, students with disabilities as a group are an average of about 1 year behind grade level in reading.
- There also is diversity in performance both within and across disability categories. There has been little change in grade level discrepancy for students with learning disabilities, speech impairments, hearing impairments, visual impairments, or other health impairments.
- In contrast, students with autism are reported to be more than 6 months further behind in Wave 2 than they were in Wave 1.

**Exhibit 8-10**
**Changes in Average Years Behind Grade Level in Reading, by Disability Category**

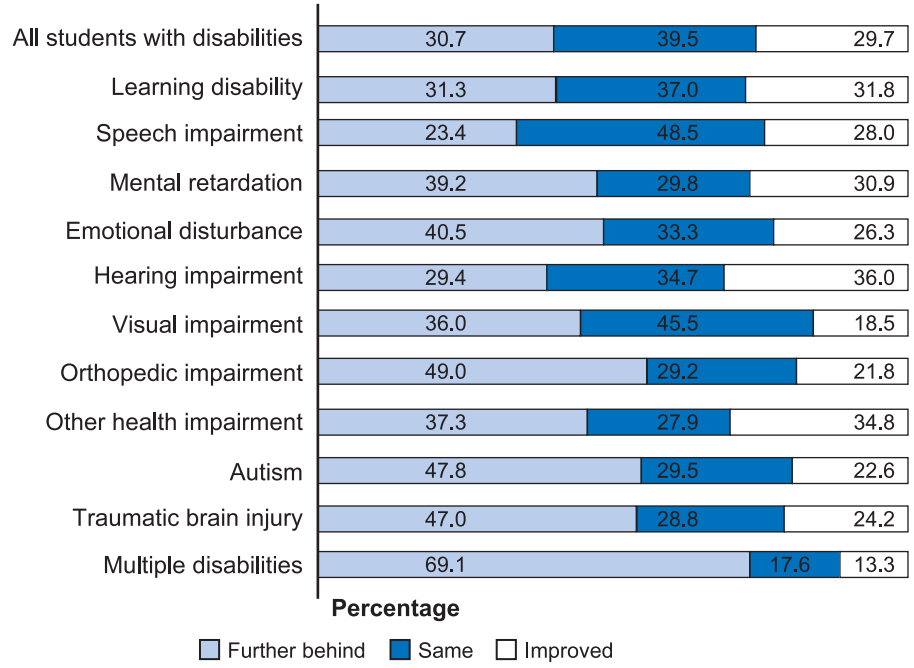



Source: SEELS school program questionnaires, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following level: * p < .05.

As is the case in other measures of engagement and academic performance, substantial fluctuation is evident among individual students in their grade-level discrepancies in reading (Exhibit 8-11).

- Forty percent of students with disabilities have remained essentially unchanged, with a grade-level discrepancy at Wave 2 that is within 1 year of their discrepancy at Wave 1.

**Exhibit 8-11**
**Fluctuations in Grade Level Discrepancy in Reading, by Disability Category**

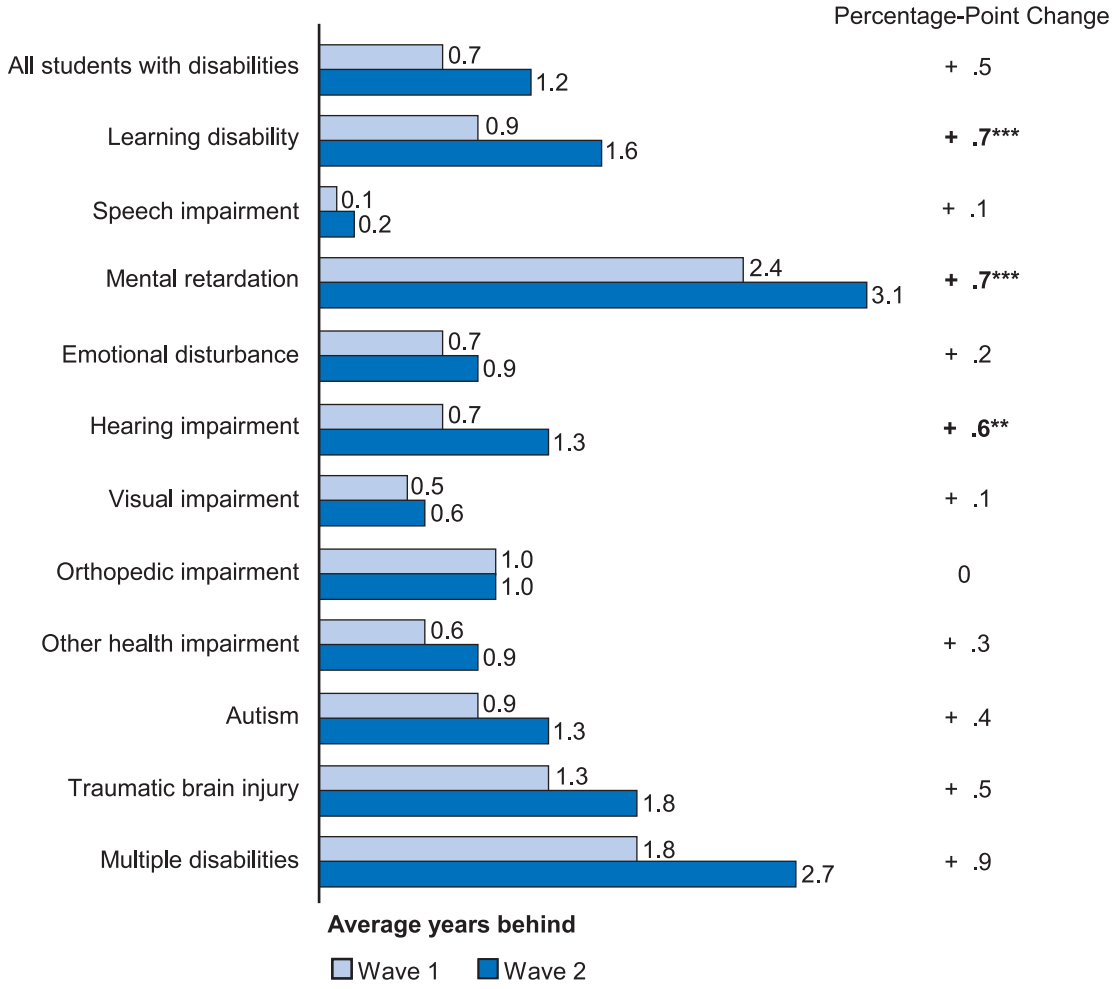



Source: SEELS school program questionnaires, Waves 1 and 2.

- The proportion of students who fell further behind grade level over the 1-year period is virtually the same as the proportion that improved their performance relative to grade level by more than 1 year.
- Students with hearing impairments or other health impairments are most likely to improve their performance relative to grade level over the 1-year time period.
- Students with autism, traumatic brain injuries, or multiple disabilities are the most likely to have lost ground.
- Students with speech impairments or visual impairments, who are among the students closest to grade level expectations in reading, are most likely to exhibit performance that is unchanged from one year to the next.
- Fluctuation in reading comprehension is not related to student demographic characteristics.

**Mathematics**. Variations from expected grade-level performance in mathematics for students with disabilities are presented in Exhibit 8-12.

**Exhibit 8-12**
**Changes in Years Behind Grade Level in Mathematics, by Disability Category**

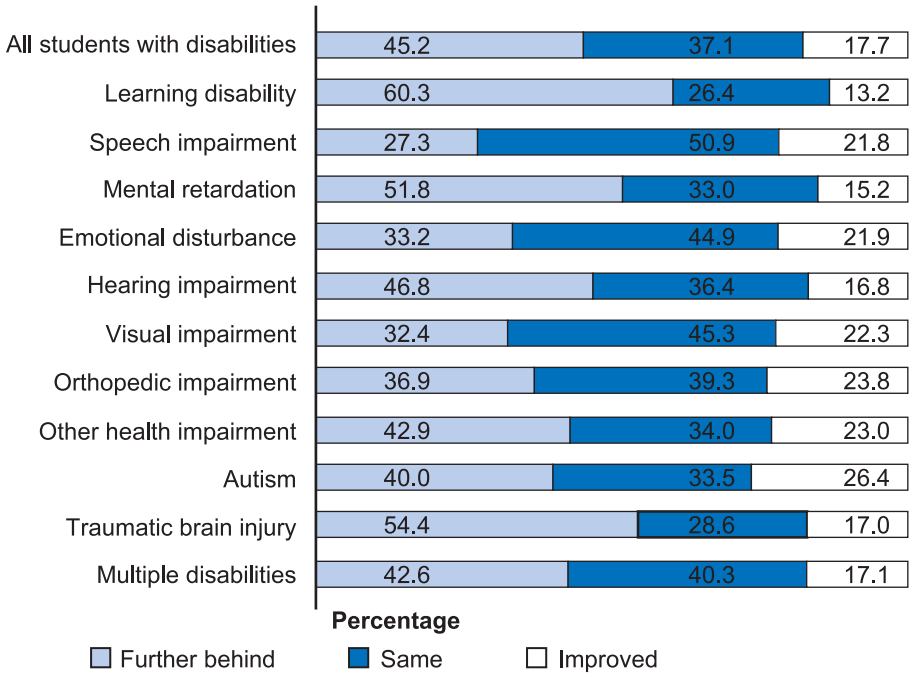



Source: SEELS school program questionnaires, Waves 1 and 2.
Statistically significant difference in a two-tailed test at the following levels: ** p < .01, *** p < .001.

- Over the one-year period from Wave 1 to Wave 2, students with disabilities' fell further behind in mathematics by approximately 6 months.
- The difference from grade level in mathematics was six or more months among several groups of students including those with learning disabilities, mental retardation, or hearing impairments, traumatic brain injury, or multiple disabilities.
- In terms of individual-level change in mathematics, performance has decreased for 45% of students with disabilities by more than 1 year, more than twice the proportion whose performance improved (18%, Exhibit 8-13).
- Substantially more students in all disability categories, with the exception of speech impairments, have had their performance in mathematics worsen than have had it improve.

- Students with learning disabilities, mental retardation, or traumatic brain injury are most likely to lose ground in mathematics over the one year time period.
- Students with speech impairments or visual impairments are least likely to lose ground.
- Fluctuation in mathematics calculation is not related to student demographic characteristics.

**Exhibit 8-13**
**Fluctuations in Discrepancy from Grade-Level Performance in Mathematics, by Disability Category**




Source: SEELS school program questionnaires, Waves 1 and 2.

## Summary

This chapter has examined changes in the school engagement and the academic performance of students with disabilities over a 1-year period. In this short time period, most of the change in both areas is modest, but there is considerable fluctuation when looking at individual student trajectories as well as some differences across disability categories or demographic groups.

## Changes in Engagement

A year is relatively small period of time, but many students are either in the midst or on the cusp of beginning their transition to adolescence and secondary school, where attitudes toward school frequently become less positive. SEELS findings confirm this trend among students with disabilities.

Absenteeism remains relatively high among students with disabilities, as they miss an average of 2 additional days in a 4-week period than they had a year earlier. This represents as much a 3 weeks over the course of a school year. Absenteeism is especially acute among students with emotional disturbances, orthopedic impairments, traumatic brain injuries, or multiple disabilities.

Students' self-ratings of motivation toward school, although generally positive, have shifted significantly in the negative direction. Consistent with the aggregate findings, more students with disabilities report themselves to feel less positively toward school than they had been the year earlier. Still, there are some students whose motivation has improved over that time period.

In the area of classroom behavior, Wave 2 performance mirrors Wave 1 in that students in general education language arts settings are more likely than special education peers to have high levels of participating in class, completing homework, etc. However, these differences are not as evident at the individual level. Change in behavior is comparable among students in the two settings.

Negative attitudes toward school can be demonstrated in behaviors that result in suspensions and expulsions. Increases in suspensions and expulsions have been experienced for students in many disability categories and most notably among students with emotional disturbances.

## Changes in Academic Performance

Wave 2 findings related to academic performance also illustrate a pattern of modest change over the previous year, variation by different measures, and student characteristics. As with engagement, fluctuation is quite common, with substantial numbers of students improving, but also similar numbers losing ground over the year.

Grades—the most common form of assessment of student progress—suggest that students with disabilities continue to be more likely to receive positive evaluations from teachers than negative ones. In fact, as a whole, and notably for students with mental retardation, students were more likely to have their grades improve than decline.

Wave 2 standardized test scores in reading and mathematics mirrored Wave 1 results closely, suggesting that, relative to the general population, students with disabilities' are holding their ground in both subjects but still have comparatively low scores. However, despite the relatively small amount of change at the group level, there is considerable movement in both positive as well as negative directions at the individual level. In tests measuring both reading comprehension

and mathematical calculation, the performance of about half of students with disabilities remained stable, but the performance of the other half fluctuated with equal likelihood of improving and declining. A slightly different picture emerges through the longitudinal analysis of teacher reported performance in reading and math relative to grade level expectations. Over the one year time period, students with disabilities were reported be just as far behind in reading than they were the previous year. By contrast, in mathematics calculation, students had fallen nearly 6 months further behind.

These results show the considerable individual variation in student engagement and academic performance. Future SEELS analyses will shed light both on change over a 3-year span of time and further focus on differences between students who succeed and their peers who have difficulty

# 9. Summary: Changes over Time among Students with Disabilities *By Jose Blackorby and Mary Wagner*

The elementary and middle school years are periods of rapid change for students both with and without disabilities. Evidence of these changes is visible in students' physical, psychological, and social development. Further, the context and demands of the education system also change during this period and transition towards ever-greater independence and higher stakes. Skill acquisition increasingly gives way to content area learning, and the organization of schools and social networks shift significantly as students move toward the challenges of adolescence and secondary school.

One of the advantages of having a longitudinal design is that SEELS can document these changes at both the group and individual levels. This report describes changes from the first wave of data collection to the second (a 2-year period in the case of data collected from parents and a 1-year period for topics addressed through data provided by schools) in eight topical areas, including household characteristics, student functioning, activities in students' nonschool hours, parental expectations and supports, school and special education enrollment, school programs, parents' perceptions of schools and school programs, and students' school engagement and academic performance. Taken together, these chapters paint a picture of stability in many areas, but significant change in others. Also, modest changes at the group level mask considerable fluctuation in status for individuals in many areas. The following sections summarize the results for students overall as well as variations observed by student disability and demographic characteristics.

## Household Characteristics

Students' households form their primary base of support as they develop, and the conditions of their households represent a significant influence on student success. In the aggregate, many household characteristics appear stable over time for students with disabilities, with no significant changes in the percentages of students in households with two parents, parents' marital status, or the employment status of their heads of household. However, there is greater fluctuation in these aspects of students' households among individual students with disabilities. For example, although there are no significant changes in living arrangements or employment or marital status among students with disabilities as a whole, substantial numbers of students' (6% to 15%) have experienced changes in at least one of those areas. Similarly, even though there has been a decline in students with disabilities living in households earning $25,000 or less and an increase those with incomes of more than $50,000, this includes 43% whose

household incomes have increased as well as 20% whose incomes have decreased from Wave 1 to Wave 2.

## Students' Functioning

Many aspects of students' functioning are developmental in nature, so one might expect to observe changes in functioning among students with disabilities represented in SEELS. Indeed, analyses confirm these trends in a number of areas. Students increasingly are able to manage their self-care needs, exhibit higher levels of social skills, take on greater degrees of household responsibilities, and exhibit improved functional cognitive abilities. In contrast, consistent with the general population, difficulties with vision become more prevalent, resulting in an increased likelihood that students use corrective lenses.

## Activities in the Nonschool Hours

Students spend most their time outside of school, and many significant events and experiences occur while at home or in the community. Between Waves 1 and 2 of SEELS, some out-of-school activities for students with disabilities have remained stable. For example, the frequency of seeing friends or participating in at least one extracurricular activity, particularly taking lessons or classes outside of school, have not changed. In other domains, however, a shift is observed from Wave 1 to Wave 2. Students have increased their use of the telephone and computers for social interactions as well as their participation in school-sponsored groups and in community service or volunteer activities.

## Parents' Expectations and Involvement

Parents' expectations for their children's educational attainment and the educational supports they provide have been linked to positive outcomes, ranging from academic achievement to postsecondary educational attendance. In general, students with disabilities who were expected to graduate from high school, attend a postsecondary school, or graduate from a 2- or 4-year college in Wave 1 largely still are expected to do so 2 years later. However, the picture is different among students who were not expected to achieve these milestones. Their parents have become more pessimistic about their children's probability of graduating or attending postsecondary education.

With respect to family involvement, the frequency of parents talking with their children about school or having family rules related to doing homework have remained stable from Wave 1 to Wave 2. However, in Wave 2, parents of students with disabilities are less involved in helping with homework and reading with their children.

## School Enrollment, Special Education Participation, and School Programs

Consistent with their peers in the general population, the majority of students with disabilities continue to attend regular public schools in their neighborhoods. However, between Waves 1 and 2, many students with disabilities have made the transition to a new school, as almost one-third of students are spending their first year in a new school in Wave 2. Students with disabilities represented in SEELS have made an average of 1.6 school changes since starting kindergarten.

By Wave 2, one in four students with disabilities have been declassified and no longer receive special education services; the declassification is particularly high among students with speech impairments. In part because of this declassification, the proportion of students with disabilities who receive any of the related services investigated in SEELS has decreased from 90% to 79%. However, most of this decline is concentrated in decreases in speech-language pathology services, consistent with the high declassification rate for the speech impairment category, and diagnostic medical services; most other related services were more stable.

SEELS measured changes in students' programs over a 1-year period, and the results show general stability in academic course taking and instructional settings. However, an increasing emphasis on academics is reflected in reductions in nonacademic courses in students' school schedules—art or music and physical education—and in their receiving study skills and social skills instruction.

## Parents' Perceptions

Since its inception, IDEA has included provisions for parental involvement in the IEP development and in students' educational programs more broadly. Indeed, the system is considered to work best when it is a partnership between schools and families. This partnership is reflected, in part, in the satisfaction that parents report with various aspects of their children's education. In Wave 1, parents were generally positive about their children's schools, special education programs, teachers, and school discipline practices. In Wave 2, although still positive overall, there has been a distinct negative shift in each of the areas investigated. There have been decreases in the percentages of parents who report being "very satisfied" and increases in those who report being "dissatisfied" or "very dissatisfied."

## School Engagement

Like their parents, students are generally positive in terms of their motivation for schooling, but there is evidence of overall declines in some measures of engagement. For example, student motivation for schooling, as indicated by such

things as looking forward to school, enjoying learning, and seeing school as a place to learn, are more negative in Wave 2 than in Wave 1. Students also are absent more frequently as they age. In contrast, students' behavior in class, such as completing homework on time or participating in class discussions, is comparable in the two school years. In both motivation and behavior ratings, the aggregate shifts mask the fact that many students improve, despite there being some who decline over time.

## Academic Performance

Academic performance currently is the most important educational outcome, and growth in academic achievement will be required in most schools in order for schools to comply with the No Child Left Behind Act (NCLB). The 1-year period from Wave 1 to Wave 2 shows only modest change over the previous year in academic performance measures, although there is variation in grades and test scores, as well as considerable fluctuation at the individual level.

In Wave 2, teacher-given grades continue to suggest that students with disabilities are more likely to receive positive evaluations from teachers than negative ones. In contrast, in Wave 2, comparatively low standardized test scores in reading and mathematics mirror Wave 1 results closely and indicate that many students have difficulties in these core subject areas. However, it is important to note that fluctuation over the 1-year period is evident, with substantial numbers of student posting improved scores but comparable numbers posting lower ones.

## Differential Changes across Disability Categories

This longitudinal look at changes in the experiences of students with disabilities once again stresses that students in specific disability categories both share features with each other and the general population, but also that they can differ from each other in dramatic ways.

Across the domains investigated, there are several in which the observed trend is comparable for students across the disability spectrum. For example, increases in functional cognitive and self-care skills and in school group memberships are observed for students in all disability categories. Further, students in all categories exhibit a trend toward lower motivation for schooling, as well as lower levels of parental satisfaction with general and special education, teachers, and the individualization of school programs. It is also interesting that, in the domain of academic achievement, although absolute differences in achievement continue to exist across disability categories, the likelihood of scores in reading or mathematics improving or declining over a 1-year period is comparable across disability categories.

From other perspectives, students in specific disability categories stand out from their peers. With regard to the important topic of declassification from special education, 24% of students with disabilities overall no longer require

services in Wave 2. Although from 1% to 11% of students in all other categories have exited the special education system by Wave 2, nearly half of students with speech impairments no longer receive special education or related services. Students with speech impairments also are among the most likely to increasingly join school-sponsored groups, to continue to be expected to graduate from high school, and to maintain more positive attitudes toward schooling.

Other students stand out from their peers in terms of an increasing disconnect from school. Students with emotional disturbances experience greater instability both at home and at school than peers in other disability categories. They also have a pattern of results that suggest decreaseing engagement in schooling over time, including higher absenteeism, lower absolute motivation for schooling, and increasingly higher rates of suspensions and expulsions than their peers in other disability categories. Further, the negative shift in parental perceptions regarding education and special education services is greatest among students with emotional disturbances. Despite this pattern of greater disengagement, academic indicators indicate that these students perform among the closest to general education norms in terms of grades and absolute achievement. Further, they are no more or less likely than others to see their reading and math scores improve or decline.

In the area of expectations for future educational attainment, there is also diversity across disability categories. Several groups of students have experienced greater shifts towards lower expectations over time. Students with mental retardation, traumatic brain injuries, autism, or multiple disabilities all have larger shares with parents who express doubt about the likelihood that they will complete secondary school or participate in postsecondary education. In contrast, students with visual or hearing impairments have experienced increases in parents' expectations of their attaining these milestones.

## Differential Changes across Demographic Groups

### Age/Grade

Many topics addressed in this volume include a developmental component, so it is logical to expect differences in rates of change for students of different ages. SEELS findings confirm this expectation in some areas but not in others. Some changes are most evident among the youngest group of students. For example, increases in self-care skills (independent dressing and feeding) are most common among the youngest students as are increases in participation in school sponsored group activities.

In several other areas, consistent with developmental expectations, changes over time are more prevalent among older students. They have the largest improvements in functional cognitive skills (i.e., counting change and looking up telephone numbers), increases in absenteeism, and increases in the use of the phone and computers for social interactions. Further, in Wave 2, fewer of them go directly home after school, and more of them participate in school-sponsored

group activities (with a corresponding drop in community-sponsored group activities). Also, older students are less likely to receive help with homework but are both more likely to have rules related to acceptable grades and more likely to have computers and use them for educational purposes. At school, they take fewer nonacademic classes as they age.

### Household Income

Household income also is associated with differential change over time in several domains. For example, students from wealthier households have experienced greater increases in participation in school-sponsored activities, a greater likelihood of having a home computer, declines in receipt of services over time, and higher parental satisfaction with schools and teachers. In addition, students from lower-income households are more likely to experience instability in their schooling by having ,pre school changes as well as higher rates of being suspended or expelled.

### Race/Ethnicity

Several changes from Wave 1 to Wave 2 occur differentially across racial/ethnic groups. For example, white children are most likely to see decreases in participation in after-school care and increased participation in both school-sponsored and community-sponsored group activities. In contrast, African-American students with disabilities are more likely than their white peers to have changed schools frequently and have been suspended or expelled, but have lower reductions in the receipt of related services as well as help with homework and reading at home. Finally, Hispanic students do not reflect the trend toward declining parental perceptions of schooling and teachers that is observed among white and African-American students.

## Conclusion

The changes from Wave 1 to Wave 2 in various aspects of the characteristics and experiences of students with disabilities show a diversity of stability, change, and individual fluctuation. There has been stability in many household and student characteristics as well as aspects of school programs and outcomes. There have been improvements for some students that are sufficient for them to no longer require special education services. And there are many students whose test scores in reading and math have improved. Unfortunately, a sizable proportion of students have lost ground academically, many who have had considerable instability at home and at school, and many who are absent more frequently. Finally, the lower levels of student motivation for schooling and parents' satisfaction illustrate the challenge that schools face in engaging students and families as partners in working for student success as they move toward secondary school.

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# Appendix A
# SEELS SAMPLING, DATA COLLECTION, AND ANALYSIS PROCEDURES: WAVES 1 & 2

This appendix describes several aspects of the SEELS methodology relevant to the Wave 1 parent interview/survey, including:

- Sampling local education agencies (LEAs), schools, and students
- Parent interview, school questionnaire, and assessment procedures and response rates
- Weighting of the SEELS data
- Estimating and using standard errors
- Calculating statistical significance
- Measurement issues.

## SEELS Sample Overview

The SEELS sample was constructed in two stages. A sample of 1,124 LEAs was selected randomly from the universe of approximately 14,000 LEAs that serve students receiving special education in at least one grade from first to seventh grade.[1] These districts and 77 state-supported special schools that serve primarily students with hearing and vision impairments and multiple disabilities were invited to participate in the study. A total of 245 LEAs and 32 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 receiving special education from each LEA[2] and special school was stratified by disability category. Students then were randomly selected from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study year, we can generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to both the parent interview and the direct assessment. A total of 11,512 students were selected and eligible to participate in the SEELS parent interview/survey sample.

Details of the LEA and student samples are provided below.

## The SEELS LEA Sample

### Defining the Universe of LEAs

The SEELS 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, such as correctional facilities;

[1] The 1999 Quality Education Data, Inc. (QED) database was used to construct the sampling frame.

[2] 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.

LEAs from U.S. territories; and LEAs with 10 or fewer students in the SEELS age range, which would be unlikely to have students with disabilities.

The public school universe data file maintained by Quality Education Data (QED, 1998) 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 (1997). Correcting for errors and duplications resulted in a master list of 13,426 LEAs that were expected to have at least one student receiving special education in the appropriate age range. These comprised the SEELS LEA sampling frame.

### Stratification

The SEELS LEA sample was stratified to increase the precision of estimates by eliminating between-strata variance, 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 SEELS 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 include Northeast, Southeast, Midwest, and West).

**LEA size (student enrollment).** LEAs vary considerably by size, the most useful available measure of which is pupil 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 enrollment greater than 17,411 in grades 1 through 7)
- **Large** (estimated enrollment from 4,707 to 17,411 in grades 1 through 7)
- **Medium** (estimated enrollment from 1,548 to 4,706 in grades 1 through 7)
- **Small** (estimated enrollment between 10 and 1,547 in grades 1 through 7).

**LEA/community wealth.** As a measure of district wealth, the Orshansky index (the proportion of the student population living below the federal definition of poverty) 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 2 through 7:

- High (0% to 12% Orshansky)
- Medium (13% to 34% Orshansky)

- Low (35% to 45% Orshansky)
- Very low (over 45% Orshansky).

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

### LEA Sample Size

On the basis of an analysis of LEAs' estimated enrollment across LEA size, and estimated sampling fractions for each disability category, 297 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 1,124 LEAs was invited to participate, from which 297 participating LEAs might be recruited. A total of 245 LEAs actually provided students for the sample. Although the sample of LEAs was somewhat smaller than anticipated, analyses of the characteristics of the LEA sample, in weighted and unweighted form, on the sampling variables of region, LEA size, and LEA wealth confirmed that that the weighted LEA sample closely resembled the LEA universe with respect to those variables, thus yielding an initial sample of LEAs that was representative of the nation.

In addition to ensuring that the LEA sample matched the universe of LEAs on variables used in the sampling, it was important to ascertain whether this stratified random sampling approach resulted in skewed distributions on relevant variables not included in the stratification scheme. Two variables from the QED database were chosen to compare the "fit" between the first-stage sample and the population: the LEA's metropolitan status and its proportion of minority students. Analyses revealed that the fit between the weighted LEA sample and the LEA universe was quite good.

## The SEELS Student Sample

Determining the size of the SEELS student sample took into account the duration of the study, desired levels of precision, and assumptions regarding attrition and response rates. We calculated that approximately three students would need to be sampled for each one student who would have both a parent/guardian interview and a direct assessment in Wave 3 of SEELS data collection.

The SEELS sample design emphasizes the need to generate fairly precise estimates of proportions and ratios for students receiving special education as a whole and for each of the 12 special education disability categories. A level of precision for standard errors of 3.6% was considered sufficient for study purposes. Thus, by sampling 1,150 students per disability category (except for TBI and deaf-blind) in year 1, we estimated there would be 388 students per category with both a parent interview and a direct assessment in year 5. Assuming a 50% sampling efficiency (which will tend to be exceeded for almost all disability categories), the 388 students would achieve a standard error of estimate of 3.6%. In addition, all students with traumatic brain injury or with deaf-blindness in participating LEAs and special schools were selected

SRI contacted LEAs and special schools to obtain their agreement to participate in the study and request rosters of students receiving special education who were between the ages of 6 and

12 on September 1, 1999 and in at least first 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 to SRI).

After estimating the number of students receiving special education in the SEELS age range, the appropriate fraction of students in each category was selected randomly from each LEA. In addition, from the state-supported special schools, 100% of students with deaf-blindness, 50% of students with visual impairments, and 15% of those with hearing impairments were sampled. In cases in which more than one child in a family was included on a roster, only one child was eligible to be selected. LEAs and special schools were notified of the students selected and contact information for their parents/guardians was requested.

### Parent Interview/Questionnaire

The data source for the findings reported here was parents/guardians of SEELS sample members, who were interviewed by telephone or through a questionnaire sent through the mail. The SEELS conceptual framework holds that a child'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.

Matches of names, addresses, and telephone numbers of SEELS parents with existing national locator databases were conducted to maximize the completeness and accuracy of contact information and subsequent response rates. Letters were sent to parents to notify them that their child had been selected for SEELS and that we would be attempting to contact them by telephone. A toll-free telephone number was included in the letter for parents to call in to be interviewed if they could not be reached by telephone or to make an appointment for the interview at a convenient time. If the computer match of contact information, letters mailed to parents, and attempted telephone interviews revealed that neither a working telephone number or accurate address was available for a student, that student was considered ineligible for the study and removed from the sample. Students who had no adult in the household who spoke either English or Spanish were ineligible for the study.

Computer-assisted telephone interviewing (CATI) was used for parent interviews, which were conducted between from mid-July through early December 2000. Interviews were conducted in both English and Spanish.

Because of the need to include a large urban LEA whose rosters were received to late participate in CATI process, all parents with an accurate address who could not be reached by telephone were mailed a self-administered questionnaire in a period that extended from

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

December 2000 through March 2001. The questionnaire contained a subset of key items from the telephone interview.

This process was repeated for Wave 2 from April through July, 2002. The paper questionnaire was not required for Wave 2. In terms of response rates, of 11,512 eligible respondents in Wave 1, 9,824 interviews/questionnaires were completed (85% response). In Wave 2, 7,126 interviews were completed from an eligible pool of 9,475 (75% response).

Overall, 93% of respondents reported that they were parents of sample members (biological, adoptive, or step), and almost 1% were foster parents. Four percent were relatives other than parents, 1% were nonrelative legal guardians, and fewer than 1% reported other relationships to sample members.

### Direct Assessment

Several of the dependent variables that are the subject of this report come from the SEELS direct assessment. Study designers felt that for students at this age level, some outcomes could only be assessed through a face to face assessment. The assessment was designed to measure a range of topics from academics to self concept and provide a mechanism to include the student "voice" in study data. The resulting standard assessment battery draws on the following published instruments to achieve these goals:

- Rapid letter naming and segmenting from the Comprehensive Test of Phonological Processing (CTOPP; Wagner, Torgeson, & Rashotte, 1997).
- Oral reading fluency from the Standard Reading Passages (Marston & Deno, 1986).
- Letter word identification (research edition) from the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001).
- Passage comprehension (research edition) from the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001).
- Mathematics calculation (research edition) from the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001).
- Math problem solving (research edition) from the Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001).
- Student self concept scale (Gresham & Elliott, 1991).
- Student attitude measure (Wick, 1991).
- Loneliness scale (Asher, 1986).

Students whose educational programs depart from that of the general population and who are judged by their teachers to be ineligible for the standard assessment were eligible for a teacher completed alternate assessment that draws on the following published instruments to achieve these goals:

- Scale of independent behavior-revised (SIBR; Bruininks, Woodcock, Weatherman & Hill, 1996).
- AAMR Adaptive Behavior Scales-School (ABS-S:2) (Lambert, Nihira & Leland, 1990).

The assessment data presented in this report come from the standard assessment. Eligibility for the assessment process included a complete parent interview or family questionnaire, parental consent, and availability of assessors in the area. Local assessors were hired by the study to conduct assessments. These assessors were predominantly school psychologists with backgrounds in assessment as well as some special education teachers. Assessors were responsible for completing between 9 and 30 assessments each. These assessments were conducted from March 2001 through August 2001 for Wave 1, and again from March to August, 2002 for Wave 2.

Several steps were followed in order to complete assessments. (1) A screening questionnaire was conducted with teachers knowledgeable about student abilities to determine eligibility for standard vs. alternate assessment, specific subtests, and necessary accommodations. Students received the standard assessment as long as they were able to complete the 1st item on WJ3 letter word identification test. Accommodations during the assessment were intended to reflect the same ones used during instruction. (2) Arrange a suitable time and place to conduct the assessment. Most SEELS assessments were conducted in students' school sites, but some were conducted in family homes. (3) Assessments were conducted as arranged and data were sent to SRI.

In Wave 1, 4,912 completed standard or alternate assessments were returned for 7,806 eligible sample members (63% response). In Wave 2, 5,963 completed standard or alternate assessments were returned for 8,095 eligible sample members (74% response).

## School Data Collection

Additional data sources for the analyses reported here were primary language arts teachers of SEELS sample members and teachers most knowledgeable of students' overall programs, who were surveyed by mail. The SEELS conceptual framework holds that language arts instruction is central to the educational experiences of students with disabilities and that classroom context, curriculum, instruction, accommodations, and assessment are crucial to student outcomes and are most amenable to intervention. Language arts teachers are the most knowledgeable about these aspects of students' language arts programs. Further, student experiences span the school day and that content classes, related services, IEP goals, participation in district/state assessments all describe student experiences and relate to student progress. These data are best provided by teachers who are most knowledgeable about the student's program.

The first step in the school data collection process was to identify the current school attended by the sampled students during the 2000-2001 school year. School attendance data had been collected during the parent interview during the summer and fall of 2000. Parent responses relating to schools were coded (e.g., address, phone) using the Quality Education Data (QED) database. For identified schools not in the QED or for students for whom there was no complete parent interview, school district records collected for sampling were used. School attendance

data was sent to schools for verification using the School Enrollment Form (SER). In addition to verification of attendance, the SER form requested that schools provide the name of the teacher who provided primary language arts instruction for the sampled student (for the teacher survey), as well as the name of the teacher who was most knowledgeable about the student's overall school program (for the school program survey).

In March 2001, packets were sent to each school (n=3,827), which included a teacher survey for each sample member, a school program survey for each sample member, and a single school characteristics survey for the school. A second packet was sent in April 2001. Additional mailings were conducted to individual teachers in May 2001 and September 2001.

For Wave 2, this process was repeated from March through August of 2002. There were several changes made in Wave 2. Teachers were provided a $5 incentive for returning the teacher or school program questionnaires. In addition, paid school coordinators were hired at the school sites to facilitate the data collection.

In Wave 1, completed teacher surveys were returned for 6,250 out of 10,410 eligible sample members (60% response), and completed school program surveys were returned for 6,213 out of 10,410 eligible sample members (59% response). In Wave 2, completed teacher surveys were returned for 5,733 out of 9,775 eligible sample members (59% response), and completed school program surveys were returned for 5,789 out of 9,775 eligible sample members (59% response).

### Weighting SEELS Data

The percentages and means reported in the data tables are estimates of the true values for the population of students with disabilities in the SEELS age range. The estimates are calculated from responses of parents of SEELS sample members. The response for each sample member is weighted to represent the number of students 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.

Exhibit A-4 illustrates the concept of sample weighting and its effect on percentages or means that are calculated for students with disabilities as a group. In this example, 10 students are included in a sample, 1 from each of 10 disability groups, and each has a hypothetical value regarding whether that student participated in organized group activities outside of school (1 for yes, 0 for no). Six students participated in such activities, which would result in an unweighted value of 60% participating. However, this would not accurately represent the national population of students with disabilities because many more students are classified as having a learning disability than 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 students in the population that are from each disability category (actual SEELS weights account for disability category and several aspects of the districts from which they 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 SEELS 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-1**
**EXAMPLE OF WEIGHTED PERCENTAGE CALCULATION**

| Disability Category | A<br>Number in Sample | B<br>Participated in Group Activities | C<br>Weight for Category | D<br>Weighted Value for Category |
|---|---|---|---|---|
| Learning disability | 1 | 1 | 4.3 | 4.3 |
| Speech/language impairment | 1 | 1 | 3.0 | 3.0 |
| Mental retardation | 1 | 1 | 1.0 | 1.0 |
| Emotional disturbance | 1 | 0 | .8 | 0 |
| Hearing impairment | 1 | 1 | .1 | .1 |
| Visual impairment | 1 | 1 | .1 | .1 |
| Orthopedic impairment | 1 | 0 | .1 | 0 |
| Other health impairment | 1 | 1 | .4 | .4 |
| Autism | 1 | 0 | .1 | 0 |
| Multiple disabilities | 1 | 0 | .1 | 0 |
| TOTAL | 10 | 6 | 10 | 8.9 |
| | Unweighted sample percentage = 60% (Column B total divided by Column A total) | | Weighted population estimate = 89% (Column D total divided by Column C total) | |

The students in LEAs and state schools with parent interview/survey data were weighted to represent the universe of students in LEAs and state schools using the following process:

- For each of the 64 LEA sampling cells, an LEA student sampling weight was computed. This weight is the ratio of the number of students in participating LEAs in that cell divided by the number of students in all LEAs in that cell in the universe of LEAs. The weight represents the number of students in the universe who are represented by each student in the participating LEAs. For example, if participating LEAs in a particular cell served 4,000 students and the universe of LEAs in the cell served 400,000 students, then the LEA student sampling weight would be 100.
- For each of the 64 LEA cells, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters of participating LEAs in a cell by the adjusted LEA student sampling weight for that cell. For example, if 350 students with learning disabilities were served by LEAs in a cell, and the LEA student sampling weight for that cell was 100 (that is, each student in the sample of participating LEAs in that cell represented 100 students in the universe), then we would estimate there to be 35,000 students with learning disabilities in that cell in the universe.
- For the state schools, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters by the inverse of the proportion of state schools that submitted rosters.
- The initial student sampling weights were adjusted by disability category so that the sum of the weights (that is, the initial student sampling weights multiplied by the number of

students with completed interviews) was equal to the number of students in the geographical and wealth cells of each size strata. The adjustments were typically small and essentially served as a nonresponse adjustment. However, the adjustments could become substantial when there were relatively few interviewees (as occurred in the small and medium strata for the lowest-incidence disabilities) because in these cases, there might not be any interviewees in some cells, and it was necessary to adjust the weights of other interviewees to compensate. Two constraints were imposed on the adjustments: 1) within each size stratum, the cells weights could not vary from the average weight by more than a factor of 2, and 2) the average weight within each size strata could not be larger than 5 times the overall average weight. These constraints substantially increased the efficiency of the sample at the cost of introducing a small amount of weighting bias (discussed below).

- In a final step, the weights were adjusted so that they summed to the number of students in each disability category, as reported to OSEP by the states for the 1999-2000 school year (OSEP, 2001).

As mentioned earlier, the imposition of constraints on the adjusted weights increased sampling efficiency at the cost of introducing a small amount of bias. The largest increases in sampling efficiency and the largest biases occurred for the categories of autism and visual impairment; the smallest increase in efficiency and biases occurred for specific learning disabilities. The principal bias for autism was the reduction in the proportion of students from the Northeast (from 22% to 18%), from the West/Southwest (from 34% to 30%) and from small LEAs (from 16% to 13%). The principal bias for visual impairment is in small LEAs (from 12% to 4%), in very wealthy LEAs (from 20% to 17%). For the category of learning disability, all biases introduced by the imposition of constraints on the student weights are negligible. Considering the increase in sampling efficiency for autism (from 23% to 53%) and visual impairment (from 18% to 53%), we consider these biases to be acceptable.

The reason for the reduction in the proportion of students represented in the cells mentioned above is that there were relatively few students with interview/survey data in those cells. For example, in small LEAs, there were only six students with visual impairments with data, requiring that they represent an estimated 1,771 students with visual impairments from small LEAs. The weighting program determined that the average weight required (i.e., 295) violated the constraints, and therefore reduced these weights to a more reasonable value (i.e., 84.4).

## Estimating Standard Errors

The SEELS sample is both stratified and clustered, so that calculating standard errors by formula is not straightforward. Standard errors for means and proportions can also be 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, we developed a set of weights for each of 50 half-replicate subsamples. Each half-replicate involved randomly selecting half of the total set of LEAs that provided contact information and then weighting that half to represent the entire universe. Randomization was accomplished within each of the 64 sampling cells. 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) calculate the squares of the deviations of the half-sample estimate from the full sample estimate; and 3) adding the squared deviations and divide 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 SEELS, and it is computationally expensive. In the past, we have found that 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 $X$.

SEELS respondents are not independent of each other because they are clustered in LEAs and the intra-cluster correlation is not zero. However, the intra-cluster correlation traditionally has been quite small, so that the formula for the effective sample size shown above has worked well. To be conservative, however, we multiplied the initial estimate by a "safety factor" that assures that we will not underestimate the standard error of estimate.

To determine the adequacy of fit of the variance estimate based on the effective sample size and to estimate the required safety factor, we selected 24 questions with 95 categorical and 2 continuous responses. We calculated standard errors of estimates for each response category and the mean response to each question for each disability group using both pseudo-replication 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 pseudo-replicate estimates of standard error are themselves estimates of the true standard error, and are therefore subject to sampling variability, we considered this to be an adequate margin of safety. All standard errors in Wave 1 are 3% or less, except for categories of deaf-blindness and traumatic brain injury, where sample sizes are very small.

## Calculating Significance Levels

Readers may want to compare percentages or means for different subgroups to determine, for example, whether the difference in the percentage of students in poverty between students with learning disabilities and those with mental retardation is greater than would be expected to occur by chance. To calculate whether the difference between percentages is statistically significant with 95% confidence (often denoted as $p<.05$), 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, products of 10.8 or greater are significant at the .001 level.

## Measurement Issues

The chapters in this report include information on specific variables included in analyses. However, several general points about SEELS 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 SEELS age range receiving special education in the 1999-2000 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. Definitions of disability categories and criteria and methods for assigning students to them vary from state and to state and even between districts within states. Because we have relied on category assignments made by schools and districts, SEELS 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 disability by their school or district. Hence, descriptive data are nationally generalizable to students in the SEELS age range who were classified as having a particular disability in the 1999-2000 school year.

**Measuring course grades.** Teacher grades are a key dependent variable for the academic performance outcome domain discussed in Chapter 4 and is an independent variable used in analyses of some other outcomes. As a dependent variable, grade information is taken from the parent interview. Respondents were asked to report students' overall grades on a 9-point scale (e.g., mostly As, mostly As and Bs, mostly Bs, etc.). For students with no parent interview, teachers of general or special education classes were asked to report students' grades in their classes on the same 9-point scale. Data were used for the setting in which students take the most classes. Only students who receive this kind of letter grade are included in the analysis of this outcome measure.

Parents and teachers also were given an option of reporting qualitative indicators of student performance (e.g., excellent, good, fair, poor, or passing/not passing) if students do not receive traditional letter grades. When grades are used as an independent variable, it was considered important to include all students, including both those who receive letter grades and those who receive grades that are measured on a qualitative scale. Thus, the letter grade metric and various qualitative metrics needed to be combined. To do so, a 4-category variable was created. Letter

grades from the 9-point scale were collapsed as indicated in the first column of Exhibit A-9. The corresponding qualitative grades appear in the second column.

**Exhibit A-2**

**CORRESPONDENCE OF LETTER AND QUALITATIVE GRADES IN CONSTRUCTING A COMPOSITE GRADE VARIABLE**

| Letter Grades | Qualitative Grades |
|---|---|
| Mostly As/Mostly As and Bs | Excellent |
| Mostly Bs/Mostly Bs and Cs | Good |
| Mostly Cs/Mostly Cs and Ds | Fair |
| Mostly Ds/Mostly Ds and Fs/Mostly Fs | Poor/Unsatisfactory/ Failing |

Note that grades reported as "needs improvement", "satisfactory," or "passing" were not included in the analyses because their correspondence to a letter grade category was not clear.

**Measuring motivation for schooling.** This outcome is presented as a measure of engagement in Chapter 3. The student interview portion of the direct assessment includes a series of seven semantic differential items from the Motivation for Schooling subscale from the School Attitude Measure (Wick, 1991). The SAM includes different sets of items for students in the age groups 6 and 7 years, 8 and 9 years, 10 and 11 years, 12 and 13 years and 14 years or older. The response categories for the 6- and 7-year-old group were dichotomous, with 0=no and 1=yes. For the remaining age groups, the response categories were as follows: 1=never agree; 2=sometimes agree; 3=usually agree; and 4=always agree. To create a common motivation for schooling variable across the age groups, dichotomous responses for the 6- and 7-year-olds were recoded into the following categories so that 0 (no)=1 (never agree) and 1 (yes)=4 (always agree). The scale includes the following items common across age groups:

- I am happiest when I am at school
- School is the best place for me to learn
- Mondays are great because I get to come back to school
- School will help me have a better life
- Going to school is not boring for me
- I am excited about school and look forward to it
- I am looking forward to several more years of school

A scale was created by summing values on these items, which ranges from 7 (all responses "never agree") to 28 (all responses "always agree").

**Comparisons with the general population of students.** Many of the analyses reported here do not have precise statistical comparisons with the general population of students. Instead, we usually have drawn comparisons using published data. For many of these comparisons, differences in samples (e.g., ages of students) or measurement (e.g., question wording on surveys) reduce the direct comparability of SEELS 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. Comparisons using data from the National Household Education Survey (NHES) are more precise because an analysis file was created from the publicly available data to match the age of SEELS students.

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# *Appendix B. Standard Errors and Unweighted Sample Sizes*

**Exhibit B-1**

**Standard Errors and Unweighted Sample Sizes for Exhibits for All Students and by Disability Category**

| | All Disabilities | 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 2-1 | | | | | | | | | | | | |
| Newly lives with two parents | (.7) | (1.1) | (1.3) | (1.4) | (1.9) | (1.5) | (1.2) | (1.5) | (1.3) | (.9) | (3.0) | (1.7) |
| Lived with two parents in both waves | (.9) | (1.5) | (1.9) | (1.9) | (2.4) | (2.0) | (2.4) | (1.7) | (1.7) | (1.3) | (4.7) | (2.3) |
| No longer lives with two parents | (.7) | (1.0) | (1.4) | (1.4) | (1.6) | (1.3) | (2.1) | (1.0) | (1.2) | (1.0) | (3.8) | (1.6) |
| Sample size | 5,918 | 556 | 468 | 473 | 438 | 590 | 492 | 620 | 655 | 841 | 195 | 562 |
| Exhibit 2-2 | | | | | | | | | | | | |
| Became employed | (.8) | (1.4) | (1.5) | (1.7) | (1.7) | (1.6) | (1.7) | (1.5) | (1.0) | (1.0) | (3.6) | (1.8) |
| Employed in both waves | (1.0) | (1.8) | (2.0) | (2.3) | (2.5) | (2.1) | (2.4) | (2.2) | (1.5) | (1.5) | (4.4) | (2.3) |
| Became unemployed | (.7) | (1.2) | (1.5) | (1.6) | (2.0) | (1.4) | (1.8) | (1.7) | (1.2) | (1.1) | (2.8) | (1.7) |
| Sample size | 5,966 | 580 | 480 | 465 | 438 | 602 | 499 | 629 | 647 | 852 | 194 | 552 |
| Exhibit 2-5 | | | | | | | | | | | | |
| Income increased | (1.5) | (2.8) | (3.0) | (3.0) | (3.0) | (2.9) | (3.6) | (3.2) | (2.9) | (2.8) | (5.9) | (3.2) |
| Income stayed the same | (1.5) | (2.7) | (3.0) | (3.1) | (3.0) | (3.0) | (3.6) | (3.2) | (2.9) | (2.9) | (6.2) | (3.1) |
| Income decreased | (1.3) | (2.2) | (2.4) | (2.6) | (2.6) | (2.2) | (3.1) | (2.5) | (2.4) | (2.3) | (5.3) | (2.8) |
| Sample size | 6,237 | 610 | 499 | 491 | 502 | 667 | 519 | 660 | 659 | 823 | 215 | 562 |
| Exhibit 2-6 | | | | | | | | | | | | |
| Wave 1 | (1.4) | (2.7) | (2.6) | (2.9) | (2.9) | (3.0) | (3.5) | (3.2) | (2.8) | (2.0) | (5.8) | (3.0) |
| Sample size | 6,339 | 607 | 495 | 511 | 492 | 627 | 518 | 655 | 698 | 881 | 216 | 608 |
| Wave 2 | (1.4) | (2.6) | (2.7) | (2.8) | (2.8) | (2.9) | (3.3) | (3.1) | (2.8) | (2.2) | (5.7) | (3.0) |
| Sample size | 6,863 | 692 | 548 | 570 | 552 | 721 | 575 | 723 | 705 | 887 | 239 | 620 |
| Exhibit 2-7 | | | | | | | | | | | | |
| Wave 1 | (1.6) | (2.5) | (3.0) | (2.9) | (2.8) | (3.3) | (3.3) | (3.2) | (2.8) | (2.4) | (6.2) | (2.9) |
| Sample size | 6,140 | 602 | 495 | 506 | 488 | 501 | 510 | 652 | 696 | 869 | 215 | 585 |
| Wave 2 | (1.4) | (2.2) | (2.9) | (2.9) | (2.4) | (3.1) | (3.0) | (3.0) | (2.6) | (2.5) | (5.9) | (2.9) |
| Sample size | 6,609 | 686 | 544 | 557 | 550 | 581 | 565 | 711 | 696 | 877 | 236 | 588 |
| Exhibit 2-9 | | | | | | | | | | | | |
| Self-care skills | | | | | | | | | | | | |
| Wave 1 | | (2.2) | (2.1) | (3.0) | (3.0) | (2.7) | (3.5) | (3.0) | (2.9) | (2.6) | (5.9) | (3.0) |
| Sample size | | 629 | 500 | 526 | 484 | 618 | 564 | 698 | 680 | 879 | 228 | 587 |
| Wave 2 | | (1.9) | (1.9) | (2.9) | (2.7) | (2.4) | (3.5) | (3.0) | (2.7) | (2.7) | (5.8) | (3.1) |
| Sample size | | 677 | 543 | 552 | 544 | 713 | 568 | 719 | 698 | 879 | 233 | 614 |
| Functional cognitive skills | | | | | | | | | | | | |

## Exhibit B-1 (Concluded)

## Standard Errors and Unweighted Sample Sizes for Exhibits for All Students and by Disability Category

| | All Disabilities | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wave 1 | | (2.3) | (2.7) | (1.3) | (2.6) | (2.4) | (2.8) | (2.6) | (2.5) | (1.5) | (3.7) | (1.7) |
| Sample size | | 684 | 543 | 560 | 547 | 719 | 550 | 709 | 703 | 874 | 238 | 596 |
| Wave 2 | | (2.6) | (2.9) | (2.0) | (2.9) | (2.9) | (3.1) | (2.9) | (2.8) | (1.9) | (5.2) | (2.2) |
| Sample size | | 677 | 542 | 560 | 546 | 714 | 561 | 719 | 698 | 873 | 239 | 607 |
| Social skills | | | | | | | | | | | | |
| Wave 1 | | (1.6) | (1.5) | (2.3) | (2.6) | (1.8) | (2.3) | (1.7) | (2.1) | (2.7) | (4.6) | (2.7) |
| Sample size | | 686 | 545 | 561 | 551 | 715 | 567 | 715 | 703 | 883 | 237 | 599 |
| Wave 2 | | (1.4) | (1.3) | (2.1) | (2.2) | (1.6) | (2.2) | (1.8) | (1.8) | (2.5) | (4.2) | (2.7) |
| Sample size | | 679 | 542 | 560 | 547 | 716 | 569 | 722 | 699 | 883 | 239 | 614 |
| Household responsibilities | | | | | | | | | | | | |
| Wave 1 | | (2.6) | (2.9) | (2.6) | (2.8) | (2.9) | (3.2) | (2.6) | (2.6) | (2.0) | (5.4) | (2.5) |
| Sample size | | 686 | 545 | 564 | 548 | 717 | 572 | 716 | 703 | 881 | 237 | 610 |
| Wave 2 | | (2.6) | (2.9) | (2.8) | (3.0) | (3.0) | (3.4) | (2.7) | (2.8) | (2.3) | (5.8) | (2.7) |
| Sample size | | 678 | 541 | 558 | 541 | 713 | 568 | 719 | 696 | 875 | 237 | 609 |

## Exhibit B-2
## Standard Errors and Unweighted Sample Sizes for Exhibits 2-3 and 2-4

| | $25,000 or Less | $25,001 to $50,000 | More than $50,000 |
|---|---|---|---|
| Exhibit 2-3 | | | |
| Wave 1 | (1.5) | (1.4) | (1.4) |
| Sample size | | 6,419 | |
| Wave 2 | (1.4) | (1.4) | (1.5) |
| Sample size | | 6,444 | |
| Exhibit 2-4 | | | |
| $25,000 or less | (2.3) | (1.8) | (.7) |
| $25,001 to $50,000 | (2.3) | (2.8) | (1.7) |
| $50,000 or more | (.7) | (2.5) | (1.8) |
| Sample size | 2,102 | 1,757 | 2,245 |

Standard errors are in parentheses.

## Exhibit B-3
## Standard Errors and Unweighted Sample Sizes for Exhibit 2-8

| | Scale Score | | |
|---|---|---|---|
| | High | Medium | Low |
| Percentage rated by parents on: | | | |
| Self-care skills | | | |
| Wave 1 | (1.3) | (1.3) | (.5) |
| Sample size | | 6,424 | |
| Wave 2 | (1.2) | (1.2) | (.4) |
| Sample size | | 6,772 | |
| Functional cognitive skills | | | |
| Wave 1 | (1.3) | (1.4) | (1.0) |
| Sample size | | 6,753 | |
| Wave 2 | (1.5) | (1.5) | (.8) |
| Sample size | | 6,766 | |
| Social skills | | | |
| Wave 1 | (1.2) | (.4) | (1.0) |
| Sample size | | 6,791 | |
| Wave 2 | (1.2) | (1.4) | (.9) |
| Sample size | | 6,802 | |
| Household responsibilities | | | |
| Wave 1 | (.5) | (1.4) | (1.5) |
| Sample size | | 6,810 | |
| Wave 2 | (.6) | (1.5) | (1.5) |
| Sample size | | 6,757 | |

Standard errors are in parentheses.

## Exhibit B-4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 2-10 | | | |
| Self-care skills | | | |
| Wave 1 | (2.2) | (1.8) | (4.2) |
| Sample size | 2,699 | 3,067 | 579 |
| Wave 2 | (2.0) | (1.7) | (3.4) |
| Sample size | 2,815 | 3,263 | 608 |
| Functional cognitive skills | | | |
| Wave 1 | (1.7) | (2.0) | (4.6) |
| Sample size | 2,806 | 3,253 | 612 |
| Wave 2 | (2.2) | (2.1) | (5.0) |
| Sample size | 2,805 | 3,265 | 611 |
| Social skills | | | |
| Wave 1 | (1.5) | (1.4) | (3.6) |
| Sample size | 2,819 | 3,272 | 616 |
| Wave 2 | (1.3) | (1.2) | (2.2) |
| Sample size | 2,827 | 3,276 | 613 |
| Household responsibilities | | | |
| Wave 1 | (2.1) | (2.1) | (4.9) |
| Sample size | 2,830 | 3,276 | 619 |
| Wave 2 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,815 | 3,261 | 606 |

Standard errors are in parentheses.

## Exhibit B-5 – Chapter 2
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 2-11 | | | | | | |
| Self-care skills | | | | | | |
| Wave 1 | (2.5) | (2.3) | (2.2) | (1.5) | (3.3) | (4.2) |
| Sample size | 2,072 | 1,729 | 2,228 | 4,241 | 1,182 | 774 |
| Wave 2 | (2.3) | (2.1) | (2.1) | (1.4) | (3.1) | (3.9) |
| Sample size | 2,199 | 1,830 | 2,304 | 4,435 | 1,276 | 827 |
| Functional cognitive skills | | | | | | |
| Wave 1 | (2.1) | (2.3) | (2.5) | (1.5) | (2.7) | (4.2) |
| Sample size | 2,221 | 1,826 | 2,305 | 4,423 | 1,277 | 820 |
| Wave 2 | (2.5) | (2.8) | (2.7) | (1.8) | (3.4) | (4.4) |
| Sample size | 2,199 | 1,821 | 2,299 | 4,432 | 1,275 | 825 |
| Social skills | | | | | | |
| Wave 1 | (2.0) | (1.8) | (1.2) | (1.1) | (2.4) | (3.2) |
| Sample size | 2,233 | 1,834 | 2,311 | 4,434 | 1,294 | 826 |
| Wave 2 | (1.8) | (1.4) | (1.2) | (.9) | (2.3) | (2.8) |
| Sample size | 2,209 | 1,827 | 2,315 | 4,454 | 1,282 | 829 |
| Household responsibilities (3 through 6) | | | | | | |
| Wave 1 | (2.5) | (2.7) | (2.6) | (1.7) | (3.5) | (4.6) |
| Sample size | 2,240 | 1,835 | 2,318 | 4,446 | 1,295 | 830 |
| Wave 2 | (2.6) | (2.8) | (2.7) | (1.8) | (3.6) | (4.7) |
| Sample size | 2,195 | 1,821 | 2,305 | 4,429 | 1,278 | 826 |

Standard errors are in parentheses.

## Exhibit B-6 – Chapter 3
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (3-2, 3-6)

| | 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 3-2 | | | | | | | | | | | |
| Receiving phone calls from friends at least weekly | | | | | | | | | | | |
| Wave 1 | (2.8) | (2.9) | (2.6) | (2.9) | (2.8) | (3.6) | (2.9) | (2.7) | (1.3) | (5.9) | (2.3) |
| Sample size | 598 | 490 | 505 | 481 | 553 | 478 | 647 | 695 | 864 | 212 | 602 |
| Wave 2 | (2.6) | (2.9) | (2.6) | (2.9) | (2.9) | (3.5) | (2.8) | (2.8) | (1.3) | (5.7) | (2.5) |
| Sample size | 676 | 542 | 557 | 528 | 635 | 529 | 716 | 689 | 866 | 238 | 606 |
| Using the computer for social interactions | | | | | | | | | | | |
| Wave 1 | (3.1) | (2.8) | (2.6) | (3.2) | (3.6) | (4.2) | (3.3) | (2.8) | (1.5) | (5.9) | (2.3) |
| Sample size | 385 | 353 | 271 | 276 | 399 | 320 | 466 | 534 | 699 | 132 | 377 |
| Wave 2 | (3.0) | (2.9) | (2.4) | (3.2) | (3.3) | (3.6) | (3.1) | (3.0) | (1.7) | (6.0) | (2.1) |
| Sample size | 507 | 450 | 351 | 358 | 513 | 406 | 587 | 587 | 758 | 164 | 448 |
| Exhibit 3-6 | | | | | | | | | | | |
| Participating in school-sponsored group activities | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.8) | (2.3) | (2.7) | (2.9) | (3.3) | (2.7) | (2.8) | (2.1) | (4.9) | (2.5) |
| Sample size | 689 | 548 | 566 | 551 | 712 | 569 | 722 | 703 | 887 | 238 | 618 |
| Wave 2 | (2.7) | (2.9) | (2.6) | (2.9) | (3.0) | (3.5) | (3.0) | (2.9) | (2.4) | (5.8) | (2.8) |
| Sample size | 671 | 543 | 556 | 543 | 710 | 560 | 703 | 685 | 872 | 236 | 603 |
| Participating in community-sponsored group activities | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.7) | (2.9) | (2.9) | (2.9) | (3.5) | (3.0) | (2.7) | (2.7) | (5.9) | (3.1) |
| Sample size | 689 | 549 | 568 | 550 | 716 | 572 | 724 | 705 | 890 | 238 | 619 |
| Wave 2 | (2.7) | (2.9) | (2.6) | (2.9) | (3.0) | (3.5) | (3.0) | (2.9) | (2.4) | (5.8) | (2.8) |
| Sample size | 671 | 543 | 556 | 543 | 710 | 560 | 703 | 685 | 872 | 236 | 603 |

Standard errors are in parentheses.

## Exhibit B-7 – Chapter 3
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (3-3)

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 3-3 | | | |
| Receiving phone calls from friends at least weekly | | | |
| Wave 1 | (2.1) | (2.2) | (5.2) |
| Sample size | 2,587 | 2,946 | 530 |
| Wave 2 | (2.2) | (2.1) | (5.0) |
| Sample size | 2,764 | 3,181 | 572 |
| Using the computer for social interactions | | | |
| Wave 1 | (1.9) | (2.4) | (6.5) |
| Sample size | 1,801 | 2,017 | 358 |
| Wave 2 | (2.1) | (2.4) | (5.7) |
| Sample size | 2,178 | 2,465 | 440 |
| Exhibit 3-7 | | | |
| Participating in school-sponsored group activities | | | |
| Wave 1 | (2.1) | (2.1) | (4.9) |
| Sample size | 2,842 | 3,287 | 621 |
| Wave 2 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,789 | 3,237 | 602 |
| Participating in community-sponsored group activities | | | |
| Wave 1 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,850 | 3,297 | 620 |
| Wave 2 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,827 | 3,278 | 612 |

Standard errors are in parentheses.

## Exhibit B-8 – Chapter 3
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (3-3)

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 3-3 | | | |
| Receiving phone calls from friends at least weekly | | | |
| Wave 1 | (2.1) | (2.2) | (5.2) |
| Sample size | 2,587 | 2,946 | 530 |
| Wave 2 | (2.2) | (2.1) | (5.0) |
| Sample size | 2,764 | 3,181 | 572 |
| Using the computer for social interactions | | | |
| Wave 1 | (1.9) | (2.4) | (6.5) |
| Sample size | 1,801 | 2,017 | 358 |
| Wave 2 | (2.1) | (2.4) | (5.7) |
| Sample size | 2,178 | 2,465 | 440 |
| Exhibit 3-7 | | | |
| Participating in school-sponsored group activities | | | |
| Wave 1 | (2.1) | (2.1) | (4.9) |
| Sample size | 2,842 | 3,287 | 621 |
| Wave 2 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,789 | 3,237 | 602 |
| Participating in community-sponsored group activities | | | |
| Wave 1 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,850 | 3,297 | 620 |
| Wave 2 | (2.3) | (2.1) | (5.0) |
| Sample size | 2,827 | 3,278 | 612 |

## Exhibit B-9 – Chapter 3
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income (3-4, 3-8)

| | Household Income | | |
|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 |
| Exhibit 3-4 | | | |
| Receiving phone calls from friends at least weekly | | | |
| Wave 1 | (2.6) | (2.7) | (2.7) |
| Sample size | 1,961 | 1,789 | 2,147 |
| Wave 2 | (2.6) | (2.8) | (2.7) |
| Sample size | 2,125 | 1,763 | 2,273 |
| Using the computer for social interactions | | | |
| Wave 1 | (3.2) | (2.7) | (2.5) |
| Sample size | 802 | 1,283 | 1,971 |
| Wave 2 | (3.0) | (2.9) | (2.7) |
| Sample size | 1,170 | 1,477 | 2,155 |
| Exhibit 3-8 | | | |
| Participating in school-sponsored group activities | | | |
| Wave 1 | (2.3) | (2.7) | (2.7) |
| Sample size | 2,236 | 1,838 | 2,312 |
| Wave 2 | (2.5) | (2.8) | (2.6) |
| Sample size | 2,186 | 1,799 | 2,284 |
| Participating in community-sponsored group activities | | | |
| Wave 1 | (2.6) | (2.7) | (2.2) |
| Sample size | 2,234 | 1,843 | 2,324 |
| Wave 2 | (2.6) | (2.7) | (2.4) |
| Sample size | 2,210 | 1,828 | 2,315 |

Standard errors are in parentheses.

## Exhibit B-10 – Chapter 3
## Standard Errors and Unweighted Sample Sizes for Exhibit 3-4

| | |
|---|---|
| Exhibit 3-5 | |
| Participating in any extracurricular activity | |
| Wave 1 | (1.3) |
| Sample size | 6,859 |
| Wave 2 | (1.3) |
| Sample size | 6,876 |
| Participating in volunteer activities | |
| Wave 1 | (1.4) |
| Sample size | 6,756 |
| Wave 2 | (1.4) |
| Sample size | 6,757 |
| Participating in community-sponsored group activities | |
| Wave 1 | (1.4) |
| Sample size | 6,852 |
| Wave 2 | (1.5) |
| Sample size | 6,803 |
| Participating in school-sponsored group activities | |
| Wave 1 | (1.4) |
| Sample size | 6,835 |
| Wave 2 | (1.5) |
| Sample size | 6,714 |
| Participating in lessons | |
| Wave 1 | (1.4) |
| Sample size | 6,810 |
| Wave 2 | (1.4) |
| Sample size | 6,798 |

## Exhibit B-11
## Standard Errors and Unweighted Sample Sizes for Exhibit 4-1

| | Definitely will | Probably will | Probably will not | Definitely will not |
|---|---|---|---|---|
| Exhibit 4-1 | | | | |
| Will attend postsecondary school | | | | |
| Wave 1 | (1.4) | (1.5) | (1.2) | (0.6) |
| Sample size | | 6,686 | | |
| Wave 2 | (1.4) | (1.5) | (1.0) | (0.9) |
| Sample size | | 6,709 | | |
| Will graduate from a 4-year school | | | | |
| Wave 1 | (1.2) | (1.5) | (1.4) | (.7) |
| Sample size | | 6,570 | | |
| Wave 2 | (1.2) | (1.5) | (1.0) | (1.3) |
| Sample size | | 6,628 | | |
| Will graduate from a 2-year college | | | | |
| Wave 1 | (0.9) | (2.1) | (2.3) | (1.4) |
| Sample size | | 2,884 | | |
| Wave 2 | (0.8) | (2.0) | (1.3) | (2.2) |
| Sample size | | 3,121 | | |

Standard errors are in parentheses.

## Exhibit B-12 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (4-2,)

| | 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 4-2 | | | | | | | | | | | |
| Will not attend postsecondary school | | | | | | | | | | | |
| Wave 1 | (0.7) | (0.6) | (2.2) | (0.9) | (0.7) | (2.1) | (1.4) | (1.1) | (1.9) | (3.0) | (2.6) |
| Sample size | 667 | 530 | 547 | 531 | 709 | 562 | 703 | 697 | 872 | 235 | 602 |
| Wave 2 | (1.4) | (1.2) | (2.7) | (2.0) | (1.5) | (2.5) | (2.3) | (1.9) | (2.7) | (5.0) | (3.1) |
| Sample size | 674 | 542 | 545 | 544 | 706 | 562 | 709 | 695 | 866 | 236 | 598 |
| Will not graduate from a 4-year school | | | | | | | | | | | |
| Wave 1 | (0.9) | (0.7) | (2.4) | (1.1) | (0.8) | (2.1) | (1.4) | (1.3) | (2.0) | (3.3) | (2.7) |
| Sample size | 647 | 529 | 533 | 520 | 693 | 552 | 688 | 694 | 857 | 231 | 595 |
| Wave 2 | (2.2) | (2.0) | (2.9) | (2.8) | (2.1) | (2.9) | (2.8) | (2.7) | (2.8) | (6.0) | (3.2) |
| Sample size | 663 | 541 | 537 | 537 | 697 | 559 | 701 | 686 | 856 | 232 | 587 |
| Will not graduate from a 2-year college | | | | | | | | | | | |
| Wave 1 | (1.9) | (2.6) | (3.2) | (2.2) | (2.8) | (5.7) | (3.8) | (2.4) | (3.0) | (5.9) | (3.8) |
| Sample size | 251 | 118 | 363 | 233 | 177 | 157 | 232 | 309 | 513 | 105 | 400 |
| Wave 2 | (4.3) | (6.2) | (3.0) | (4.1) | (6.4) | (5.4) | (4.3) | (4.0) | (3.0) | (5.8) | (2.9) |
| Sample size | 267 | 120 | 381 | 263 | 194 | 162 | 261 | 343 | 556 | 119 | 429 |

Standard errors are in parentheses.

## Exhibit B-13 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 4-3 | | | | | | |
| Will not attend postsecondary school | | | | | | |
| Wave 1 | (1.1) | (0.8) | (0.9) | (0.6) | (1.5) | (1.8) |
| Sample size | 2,186 | 1,828 | 2,297 | 4,372 | 1,274 | 808 |
| Wave 2 | (1.8) | (1.8) | (1.3) | (1.1) | (2.3) | (2.5) |
| Sample size | 2,168 | 1,806 | 2,300 | 4,408 | 1,254 | 817 |
| Will not graduate from a 4-year school | | | | | | |
| Wave 1 | (1.2) | (1.1) | (1.0) | (0.8) | (1.5) | (2.1) |
| Sample size | 2,133 | 1,815 | 2,269 | 4,293 | 1,254 | 794 |
| Wave 2 | (1.2) | (1.1) | (1.0) | (0.8) | (1.5) | (2.1) |
| Sample size | 2,133 | 1,815 | 2,269 | 4,293 | 1,254 | 794 |

Standard errors are in parentheses.

## Exhibit B-14
## Standard Errors and Unweighted Sample Sizes for Exhibit 4-4

| | Never or less than once a week | 1 to 2 times a week | 3 to 4 times a week | 5 or more times a week |
|---|---|---|---|---|
| Exhibit 4-4 | | | | |
| Families helping with homework | | | | |
| Wave 1 | (0.5) | (1.1) | (1.5) | (1.6) |
| Sample size | | 5,322 | | |
| Wave 2 | (0.8) | (1.4) | (1.4) | (1.5) |
| Sample size | | 5,706 | | |

Standard errors are in parentheses.

**Exhibit B-15**
**Standard Errors and Unweighted Sample Sizes for Exhibit 4-5**

| | Not at all | Once or twice a week | Three or more times a week | Everyday |
|---|---|---|---|---|
| Exhibit 4-5 | | | | |
| Families reading with children | | | | |
| Wave 1 | (0.8) | (1.4) | (1.4) | (1.4) |
| Sample size | | 6,635 | | |
| Wave 2 | (1.2) | (1.4) | (1.3) | (1.2) |
| Sample size | | 6,561 | | |

Standard errors are in parentheses.

**Exhibit B-16 – Chapter 4**
**Standard Errors and Unweighted Sample Sizes for Exhibit 4-6**

| | |
|---|---|
| Exhibit 4-6 | |
| Use of home computer for educational purposes | |
| Wave 1 | (1.5) |
| Sample size | 6,141 |
| Wave 2 | (1.3) |
| Sample size | 6,581 |
| For those with a computer at home, uses computer for educational purposes | |
| Wave 1 | (1.6) |
| Sample size | 6,137 |
| Wave 2 | (1.5) |
| Sample size | 6,576 |

Standard errors are in parentheses.

## Exhibit B-17 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (4-7)

| | 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 4-7 | | | | | | | | | | | |
| Are helped with homework five or more times a week | | | | | | | | | | | |
| Wave 1 | (2.8) | (3.1) | (3.3) | (3.4) | (3.4) | (4.2) | (3.5) | (2.9) | (3.4) | (6.6) | (3.7) |
| Sample size | 587 | 482 | 412 | 422 | 530 | 438 | 588 | 651 | 626 | 195 | 384 |
| Wave 2 | (2.6) | (2.8) | (3.1) | (3.0) | (3.0) | (3.8) | (3.3) | (2.9) | (3.2) | (6.3) | (3.7) |
| Sample size | 636 | 525 | 467 | 458 | 595 | 468 | 642 | 633 | 656 | 210 | 407 |
| Are read to every day | | | | | | | | | | | |
| Wave 1 | (2.3) | (2.8) | (2.6) | (2.6) | (2.8) | (3.5) | (2.9) | (2.7) | (2.7) | (5.2) | (3.0) |
| Sample size | 680 | 540 | 559 | 532 | 642 | 535 | 713 | 699 | 874 | 235 | 608 |
| Wave 2 | (1.2) | (2.0) | (2.4) | (2.6) | (2.2) | (2.4) | (3.0) | (2.7) | (2.3) | (2.6) | (4.9) |
| Sample size | 6,561 | 676 | 539 | 557 | 517 | 628 | 525 | 710 | 688 | 864 | 235 |
| Have rules about acceptable grades | | | | | | | | | | | |
| Wave 1 | (2.9) | (3.2) | (3.2) | (3.2) | (3.4) | (4.1) | (3.4) | (2.8) | (2.3) | (6.6) | (3.5) |
| Sample size | 596 | 485 | 496 | 473 | 549 | 444 | 636 | 678 | 816 | 206 | 540 |
| Wave 2 | (2.7) | (3.0) | (3.0) | (3.1) | (3.1) | (3.9) | (3.2) | (2.9) | (2.4) | (6.1) | (3.3) |
| Sample size | 668 | 538 | 549 | 510 | 622 | 488 | 702 | 680 | 821 | 231 | 547 |
| Of those with a home computer, percentage using it for educational purposes | | | | | | | | | | | |
| Wave 1 | (2.8) | (3.1) | (2.9) | (3.1) | (3.3) | (3.9) | (3.2) | (2.8) | (2.7) | (6.2) | (3.0) |
| Sample size | 600 | 489 | 503 | 477 | 553 | 481 | 648 | 693 | 865 | 214 | 597 |
| Wave 2 | (2.6) | (2.7) | (2.9) | (3.0) | (2.9) | (3.6) | (2.9) | (2.7) | (2.6) | (5.9) | (3.1) |
| Sample size | 677 | 541 | 554 | 520 | 632 | 526 | 716 | 689 | 863 | 236 | 602 |

Standard errors are in parentheses.

## Exhibit B-18 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (4-9)

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 4-8 | | | |
| Percentage helped with homework five or more times a week | | | |
| Wave 1 | (2.5) | (2.3) | (5.4) |
| Sample size | 2,183 | 2,614 | 461 |
| Wave 2 | (2.4) | (2.0) | (4.1) |
| Sample size | 2,430 | 2,718 | 483 |
| Percentage read to every day | | | |
| Wave 1 | (2.3) | (1.8) | (4.1) |
| Sample size | 2,790 | 3,188 | 575 |
| Wave 2 | (2.2) | (1.5) | (2.9) |
| Sample size | 2,758 | 3,160 | 559 |
| Percentage having family rules related to acceptable grades | | | |
| Wave 1 | (2.6) | (2.3) | (5.4) |
| Sample size | 2,493 | 2,848 | 514 |
| Wave 2 | (2.4) | (2.2) | (5.1) |
| Sample size | 2,686 | 3,063 | 540 |
| Of those with a family computer, percentage using it for educational purposes | | | |
| Wave 1 | (2.5) | (2.2) | (5.2) |
| Sample size | 2,586 | 2,944 | 529 |
| Wave 2 | (2.3) | (2.1) | (4.9) |
| Sample size | 2,765 | 3,167 | 561 |

Standard errors are in parentheses.

## Exhibit B-19 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 4-9 | | | | | | |
| Percentage helped with homework five or more times a week | | | | | | |
| Wave 1 | (2.9) | (2.9) | (2.9) | (1.9) | (3.6) | (5.0) |
| Sample size | 1,688 | 1,552 | 1,863 | 3,462 | 1,039 | 657 |
| Wave 2 | (2.7) | (2.8) | (2.5) | (1.7) | (3.7) | (4.5) |
| Sample size | 1,819 | 1,522 | 1,988 | 3,710 | 1,085 | 713 |
| Percentage read to every day | | | | | | |
| Wave 1 | (2.4) | (2.6) | (2.5) | (1.6) | (3.3) | (4.3) |
| Sample size | 2,165 | 1,780 | 2,275 | 4,324 | 1,262 | 816 |
| Wave 2 | (2.2) | (2.3) | (2.0) | (1.4) | (3.2) | (3.6) |
| Sample size | 2,112 | 1,757 | 2,255 | 4,293 | 1,233 | 805 |
| Percentage having family rules related to acceptable grades | | | | | | |
| Wave 1 | (2.8) | (2.8) | (2.9) | (1.9) | (3.6) | (5.0) |
| Sample size | 1,903 | 1,732 | 2,058 | 3,873 | 1,155 | 708 |
| Wave 2 | (2.7) | (2.9) | (2.7) | (1.8) | (3.5) | (4.7) |
| Sample size | 2,063 | 1,718 | 2,167 | 4,160 | 1,217 | 777 |
| Of those with a family computer, percentage using it for educational purposes | | | | | | |
| Wave 1 | (2.4) | (2.8) | (2.4) | (1.8) | (3.3) | (4.3) |
| Sample size | 1,957 | 1,786 | 2,146 | 4,020 | 1,175 | 737 |
| Wave 2 | (2.6) | (2.6) | (1.9) | (1.6) | (3.5) | (4.6) |
| Sample size | 2,115 | 1,761 | 2,264 | 4,303 | 1,236 | 807 |

Standard errors are in parentheses.

## Exhibit B-20 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibit 5-1

| | |
|---|---|
| Exhibit 5-1 | |
| Public school | |
| Wave 1 | (0.4) |
| Sample size | 6,252 |
| Wave 2 | (0.5) |
| Sample size | 6,720 |
| Regular school serving | |
| Wave 1 | (0.7) |
| Sample size | 6,802 |
| Wave 2 | (0.8) |
| Sample size | 6,827 |
| Neighborhood school | |
| Wave 1 | (1.3) |
| Sample size | 6,283 |
| Wave 2 | (1.3) |
| Sample size | 6,761 |
| Special school serving only students with disability | |
| Wave 1 | (0.4) |
| Sample size | 6,802 |
| Wave 2 | (0.5) |
| Sample size | 6,827 |
| Magnet school | |
| Wave 1 | (0.4) |
| Sample size | 6,802 |
| Wave 2 | (0.4) |
| Sample size | 6,827 |
| Charter school | |
| Wave 1 | (0.2) |
| Sample size | 6,802 |
| Wave 2 | (0.3) |
| Sample size | 6,827 |
| Alternative school | |
| Wave 1 | (0.2) |
| Sample size | 6,802 |
| Wave 2 | (0.3) |
| Sample size | 6,827 |

Standard errors are in parentheses.

## Exhibit B-21 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-2)

| | 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 5-2 | | | | | | | | | | | |
| Regular school | | | | | | | | | | | |
| Wave 1 | (1.0) | (1.1) | (1.2) | (2.0) | (2.0) | (2.6) | (1.4) | (1.1) | (1.8) | (4.0) | (2.6) |
| Sample size | 686 | 547 | 566 | 544 | 717 | 568 | 712 | 699 | 889 | 239 | 605 |
| Wave 2 | (1.3) | (1.3) | (1.6) | (2.3) | (2.0) | (2.6) | (1.6) | (1.6) | (1.9) | (4.2) | (2.7) |
| Sample size | 686 | 547 | 569 | 548 | 718 | 569 | 720 | 701 | 886 | 239 | 612 |
| Neighborhood school | | | | | | | | | | | |
| Wave 1 | (2.2) | (2.3) | (2.7) | (3.1) | (3.2) | (3.6) | (2.9) | (2.5) | (2.8) | (5.9) | (3.1) |
| Sample size | 607 | 493 | 508 | 490 | 628 | 518 | 642 | 690 | 878 | 213 | 586 |
| Wave 2 | (2.3) | (2.3) | (2.7) | (2.9) | (2.9) | (3.4) | (2.9) | (2.5) | (2.8) | (5.6) | (3.1) |
| Sample size | 676 | 546 | 564 | 547 | 712 | 565 | 707 | 690 | 878 | 236 | 608 |

Standard errors are in parentheses.

## Exhibit B-22 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 5-3 | | | | | | |
| Percentage attending a regular school | | | | | | |
| Wave 1 | (1.3) | (1.1) | (1.2) | (0.7) | (2.1) | (2.2) |
| Sample size | 2,224 | 1,823 | 2,314 | 4,452 | 1,285 | 827 |
| Wave 2 | (1.6) | (1.3) | (1.2) | (0.8) | (2.3) | (2.6) |
| Sample size | 2,222 | 1,839 | 2,315 | 4,463 | 1,291 | 833 |
| Percentage attending school in neighborhood | | | | | | |
| Wave 1 | (2.3) | (2.3) | (2.1) | (1.5) | (3.4) | (3.9) |
| Sample size | 2,021 | 1,821 | 2,166 | 4,124 | 1,195 | 752 |
| Wave 2 | (2.3) | (2.5) | (2.3) | (1.5) | (3.3) | (3.8) |
| Sample size | 2,209 | 1,810 | 2,292 | 4,401 | 1,289 | 832 |

Standard errors are in parentheses.

## Exhibit B-23 – Chapter 5

## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-4)

| | All Disabilities | 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 5-4 | | | | | | | | | | | | |
| Attending new schools | | | | | | | | | | | | |
| Wave 1 | (1.3) | (2.5) | (2.5) | (2.7) | (3.0) | (2.7) | (3.1) | (2.8) | (2.5) | (2.3) | (5.8) | (2.7) |
| Sample size | 6,334 | 607 | 494 | 511 | 490 | 627 | 517 | 654 | 698 | 881 | 216 | 608 |
| Wave 2 | (1.4) | (2.5) | (2.6) | (2.7) | (2.9) | (2.7) | (3.2) | (2.9) | (2.7) | (2.5) | (5.8) | (2.9) |
| Sample size | 6,835 | 685 | 548 | 568 | 549 | 719 | 570 | 720 | 702 | 887 | 239 | 616 |
| Standard errors are in parentheses. | | | | | | | | | | | | |

## Exhibit B-24 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibit 5-5

| | |
|---|---|
| Exhibit 5-5 | |
| Reasons for recent school mobility: | |
| Grade-level progression | |
| Wave 1 | (3.1) |
| Sample size | 1,579 |
| Wave 2 | (2.6) |
| Sample size | 2,169 |
| Family move | |
| Wave 1 | (2.7) |
| Sample size | 1,579 |
| Wave 2 | (2.1) |
| Sample size | 2,169 |
| Change in household or living situation | |
| Wave 1 | (1.1) |
| Sample size | 1,579 |
| Wave 2 | (0.6) |
| Sample size | 2,169 |
| Family chose different school | |
| Wave 1 | (2.1) |
| Sample size | 1,579 |
| Wave 2 | (1.6) |
| Sample size | 2,169 |
| School system assigned child to different school | |
| Wave 1 | (1.8) |
| Sample size | 1,579 |
| Wave 2 | (1.6) |
| Sample size | 2,169 |

Standard errors are in parentheses.

## Exhibit B-25 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-6)

| | 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 5-6 Percentage whose parents report students spending their first year in a new school changed schools due to: | | | | | | | | | | | |
| **Grade-level progression** | | | | | | | | | | | |
| Wave 1 | (5.3) | (7.0) | (5.9) | (4.6) | (6.1) | (7.1) | (5.6) | (5.5) | (5.6) | (10.8) | (5.7) |
| Sample size | 161 | 93 | 132 | 175 | 144 | 111 | 161 | 180 | 199 | 65 | 153 |
| Wave 2 | (4.4) | (5.5) | (4.9) | (4.8) | (5.1) | (6.3) | (5.5) | (4.6) | (4.6) | (9.3) | (5.4) |
| Sample size | 226 | 138 | 193 | 212 | 199 | 152 | 251 | 258 | 246 | 89 | 198 |
| **Family move** | | | | | | | | | | | |
| Wave 1 | (4.6) | (6.6) | (4.9) | (4.4) | (5.7) | (6.2) | (5.3) | (4.4) | (5.0) | (8.2) | (4.8) |
| Sample size | 161 | 93 | 132 | 175 | 144 | 111 | 161 | 180 | 199 | 65 | 153 |
| Wave 2 | (3.7) | (4.2) | (3.9) | (4.0) | (3.4) | (5.3) | (4.7) | (3.6) | (3.3) | (8.0) | (3.9) |
| Sample size | 226 | 138 | 193 | 212 | 199 | 152 | 251 | 258 | 246 | 89 | 198 |
| Percentage reporting number of school changes since starting kindergarten | | | | | | | | | | | |
| None | (2.4) | (3.1) | (2.4) | (2.3) | (3.0) | (3.4) | (2.9) | (2.5) | (2.4) | (4.9) | (2.6) |
| 1 or 2 | (2.8) | (3.1) | (3.0) | (3.0) | (3.2) | (3.8) | (3.3) | (2.9) | (2.8) | (6.3) | (3.1) |
| 3 or 4 | (2.4) | (2.0) | (2.6) | (2.8) | (2.6) | (2.8) | (2.4) | (2.3) | (2.3) | (5.4) | (2.8) |
| 5 or more | (0.5) | (0.3) | (0.3) | (1.2) | (0.2) | (0.6) | (0.4) | (0.5) | (0.2) | (0.7) | (0.5) |
| Mean number of changes | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | (0.2) | (0.1) |
| Sample size | 592 | 492 | 502 | 483 | 623 | 510 | 651 | 691 | 877 | 212 | 599 |

Standard errors are in parentheses.

## Exhibit B-26 – Chapter 4
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (5-7)

| | Age In 2000 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 5-7 | | | |
| Number of school changes since starting kindergarten | | | |
| 0 | (2.5) | (1.8) | (3.9) |
| 1 to 3 | (2.4) | (2.2) | (5.2) |
| 3 to 4 | (1.6) | (1.9) | (4.7) |
| 5 or more | 3.2 | 6.1 | 10.0 |
| Sample size | 2,614 | 3,007 | 563 |

Standard errors are in parentheses.

## Exhibit B-27 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 5-7 | | | | | | |
| Number of school changes since starting kindergarten | | | | | | |
| 0 | (2.4) | (2.6) | (2.6) | (1.7) | (3.1) | (4.3) |
| 1 to 3 | (2.7) | (2.8) | (2.8) | (1.9) | (3.7) | (4.7) |
| 3 to 4 | (2.3) | (2.2) | (2.0) | (1.4) | (3.2) | (4.2) |
| 5 or more | (1.4) | (1.2) | (1.0) | (0.8) | (1.8) | (2.7) |
| Sample size | 1,999 | 1,829 | 2,168 | 4,117 | 1,186 | 748 |

Standard errors are in parentheses.

## Exhibit B-28 – Chapter 5

## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-8)

| | All Disabilities | 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 5-8 | | | | | | | | | | | | |
| Changes in students continuing to receive special education services | | | | | | | | | | | | |
| Wave 1 | (0.7) | (1.1) | (1.8) | (0.5) | (1.1) | (0.8) | (1.1) | (0.9) | (1.0) | (0.6) | (1.3) | (0.7) |
| Sample size | 6,784 | 685 | 536 | 563 | 547 | 715 | 564 | 709 | 695 | 884 | 237 | 617 |
| Wave 2 | (1.3) | (1.9) | (2.9) | (1.0) | (2.1) | (2.0) | (1.9) | (2.0) | (2.1) | (1.0) | (1.9) | (1.3) |
| Sample size | 6,738 | 671 | 535 | 565 | 546 | 701 | 553 | 707 | 696 | 881 | 237 | 614 |
| Standard errors are in parentheses. | | | | | | | | | | | | |

## Exhibit B-29 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 5-9 | | | | | | |
| Changes in students continuing to receive special education services | | | | | | |
| Wave 1 | (1.1) | (1.2) | (1.4) | (0.8) | (1.3) | (2.6) |
| Sample size | 2,215 | 1,825 | 2,305 | 4,436 | 1,282 | 825 |
| Wave 2 | (2.1) | (2.3) | (2.5) | (1.5) | (2.7) | (4.1) |
| Sample size | 2,187 | 1,813 | 2,295 | 4,420 | 1,269 | 817 |
| Standard errors are in parentheses. | | | | | | |

## Exhibit B-30 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-10)

| | 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 5-10 Percentage with parents attending an IEP meeting in the current or preceding year | | | | | | | | | | | |
| Wave 1 | (1.3) | (1.7) | (1.2) | (1.6) | (1.3) | (1.2) | (1.0) | (1.1) | (0.8) | (2.2) | (1.5) |
| Sample size | 664 | 490 | 555 | 530 | 705 | 555 | 695 | 668 | 879 | 233 | 606 |
| Wave 2 | (2.1) | (2.9) | (1.8) | (2.1) | (1.9) | (2.1) | (1.9) | (1.7) | (1.5) | (3.9) | (2.2) |
| Sample size | 574 | 290 | 541 | 467 | 627 | 509 | 618 | 599 | 843 | 229 | 593 |
| Percentage whose parents report IEP goals were decided by: | | | | | | | | | | | |
| **Mostly school staff** | | | | | | | | | | | |
| Wave 1 | (2.7) | (3.3) | (3.0) | (3.0) | (3.0) | (3.4) | (2.9) | (2.6) | (2.5) | (5.5) | (3.0) |
| Sample size | 552 | 407 | 478 | 442 | 588 | 481 | 613 | 644 | 854 | 201 | 568 |
| Wave 2 | (2.6) | (3.9) | (2.6) | (3.0) | (2.9) | (3.2) | (2.8) | (2.7) | (2.4) | (5.0) | (2.9) |
| Sample size | 524 | 267 | 503 | 436 | 586 | 479 | 598 | 576 | 813 | 218 | 560 |
| **Families and staff together** | | | | | | | | | | | |
| Wave 1 | (2.8) | (3.3) | (3.0) | (3.1) | (3.0) | (3.5) | (2.9) | (2.7) | (2.5) | (5.6) | (3.1) |
| Sample size | 552 | 407 | 478 | 442 | 588 | 481 | 613 | 644 | 854 | 201 | 568 |
| Wave 2 | (2.7) | (4.0) | (2.7) | (3.0) | (3.0) | (3.3) | (2.9) | (2.8) | (2.5) | (5.2) | (3.0) |
| Sample size | 524 | 267 | 503 | 436 | 586 | 479 | 598 | 576 | 813 | 218 | 560 |

Standard errors are in parentheses.

## Exhibit B-31 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (5-11)

| | Age In Wave 1 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 5-11 | | | |
| Percentage with parents attending an IEP meeting in the current or preceding school year | | | |
| Wave 1 | (1.1) | (1.1) | (2.5) |
| Sample size | 2,756 | 3,180 | 593 |
| Wave 2 | (1.8) | (1.7) | (4.2) |
| Sample size | 2,451 | 2,859 | 536 |
| Percentage with parents reporting IEP goals mostly set by: | | | |
| **School staff** | | | |
| Wave 1 | (2.4) | (2.2) | (5.0) |
| Sample size | 2,459 | 2,795 | 528 |
| Wave 2 | (2.4) | (2.1) | (5.0) |
| Sample size | 2,321 | 2,698 | 500 |
| **Families and staff together** | | | |
| Wave 1 | (2.5) | (2.2) | (5.1) |
| Sample size | 2,459 | 2,795 | 528 |
| Wave 2 | (2.5) | (2.2) | (5.1) |
| Sample size | 2,321 | 2,698 | 500 |

Standard errors are in parentheses.

## Exhibit B-32– Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 5-12 | | | | | | |
| Percentage of parents who attend an IEP meeting during the 2-year period 1999-00 or 2001-02: | | | | | | |
| Wave 1 | (1.1) | (1.2) | (1.4) | (0.8) | (1.3) | (2.6) |
| Sample size | 2,215 | 1,825 | 2,305 | 4,436 | 1,282 | 825 |
| Wave 2 | (2.1) | (2.3) | (2.5) | (1.5) | (2.7) | (4.1) |
| Sample size | | | | | | |
| Percentage with parents reporting IEP goals mostly set by: | | | | | | |
| **School staff** | | | | | | |
| Wave 1 | (2.8) | (2.6) | (2.7) | (1.8) | (3.6) | (5.2) |
| Sample size | 1,835 | 1,736 | 2,063 | 3,917 | 1,076 | 666 |
| Wave 2 | (2.6) | (2.7) | (2.9) | (1.8) | (3.6) | (4.8) |
| Sample size | 1,796 | 1,512 | 1,916 | 3,720 | 1,034 | 642 |
| **Families and staff together** | | | | | | |
| Wave 1 | (2.8) | (2.7) | (2.7) | (1.8) | (3.7) | (5.2) |
| Sample size | 1,835 | 1,736 | 2,063 | 3,917 | 1,076 | 666 |
| Wave 2 | (2.7) | (2.8) | (2.9) | (1.8) | (3.7) | (4.8) |
| Sample size | 1,796 | 1,512 | 1,916 | 3,720 | 1,034 | 642 |

Standard errors are in parentheses.

## Exhibit B-33 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibit 5-13

| Exhibit 5-13 | From any source | From or through the school district |
|---|---|---|
| Percentage receiving service in the past 12 months: | | |
| **Speech-language pathology** | | |
| Wave 1 | (1.5) | (1.6) |
| Sample size | 6,334 | 6,330 |
| Wave 2 | (1.5) | (1.5) |
| Sample size | 6,831 | 6,823 |
| **Diagnostic medical services** | | |
| Wave 1 | (1.4) | (0.8) |
| Sample size | 6,334 | 6,330 |
| Wave 2 | (1.2) | (0.7) |
| Sample size | 6,831 | 6,823 |
| **Orientation/mobility services** | | |
| Wave 1 | (0.4) | |
| Sample size | 6,334 | 6,330 |
| Wave 2 | (0.3) | |
| Sample size | 6,831 | 6,823 |

Standard errors are in parentheses.

## Exhibit B-34 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category
## (5-14 and 5-15)

| | 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 5-14 Percentage receiving service in the past 12 months: | | | | | | | | | | | |
| **Any of the services investigated in SEELS** | | | | | | | | | | | |
| Wave 1 | | | | | | | | | | | |
| Sample size | | | | | | | | | | | |
| Wave 2 | | | | | | | | | | | |
| Sample size | | | | | | | | | | | |
| **Speech-language pathology services** | | | | | | | | | | | |
| Wave 1 | (2.6) | (1.9) | (2.8) | (2.8) | (2.6) | (3.6) | (3.2) | (2.8) | (1.6) | (6.2) | (2.5) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (2.2) | (2.9) | (2.8) | (2.4) | (2.8) | (3.3) | (3.0) | (2.7) | (1.9) | (6.0) | (2.7) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| **Occupational therapy** | | | | | | | | | | | |
| Wave 1 | (1.5) | (1.6) | (2.8) | (2.1) | (2.3) | (3.5) | (3.2) | (2.6) | (2.7) | (6.1) | (3.1) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (1.2) | (1.5) | (2.6) | (1.9) | (2.1) | (3.2) | (3.1) | (2.3) | (2.8) | (5.6) | (3.1) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| **Psychological/mental health** | | | | | | | | | | | |
| Wave 1 | (2.2) | (2.3) | (2.6) | (2.8) | (2.6) | (3.0) | (2.6) | (2.8) | (2.6) | (6.1) | (3.0) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (2.2) | (2.0) | (2.5) | (2.8) | (2.5) | (2.5) | (2.5) | (2.8) | (2.6) | (5.8) | (3.0) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| **Diagnostic medical services** | | | | | | | | | | | |
| Wave 1 | (2.4) | (2.5) | (2.9) | (3.1) | (3.0) | (3.7) | (3.2) | (2.9) | (2.8) | (6.3) | (3.2) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (2.1) | (2.0) | (2.6) | (2.9) | (2.8) | (3.5) | (3.1) | (2.8) | (2.8) | (5.9) | (3.1) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| **Nursing care** | | | | | | | | | | | |
| Wave 1 | (0.2) | (0.2) | (0.9) | (0.9) | (1.2) | (1.6) | (1.8) | (1.0) | (1.1) | (2.8) | (2.0) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (0.4) | (0.4) | (1.2) | (0.7) | (1.3) | (2.9) | (2.9) | (1.2) | (1.7) | (3.2) | (2.1) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |

## Exhibit B-34 – Chapter 5
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (5-14 and 5-15) (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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exhibit 5-14 | | | | | | | | | | | |
| **Audiology services** | | | | | | | | | | | |
| Wave 1 | (1.2) | (1.8) | (1.9) | (1.3) | (2.5) | (1.8) | (1.6) | (1.6) | (1.6) | (2.9) | (2.3) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | (1.1) | (1.3) | (1.8) | (1.2) | (2.6) | (1.6) | (1.4) | (1.1) | (1.7) | (2.4) | (2.1) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| **Orientation/mobility services** | | | | | | | | | | | |
| Wave 1 | (0.2) | (0.4) | (1.6) | (0.8) | (0.9) | (3.7) | (2.1) | (1.1) | (1.2) | (3.7) | (2.2) |
| Sample size | 607 | 496 | 512 | 489 | 626 | 517 | 655 | 697 | 880 | 216 | 608 |
| Wave 2 | -- | (0.3) | (0.7) | (0.4) | (1.1) | (3.5) | (1.4) | (0.6) | (0.3) | (3.7) | (1.5) |
| Sample size | 686 | 548 | 567 | 550 | 715 | 572 | 722 | 701 | 881 | 239 | 618 |
| Exhibit 5-15 Percentage receiving service in the past 12 months through school: | | | | | | | | | | | |
| **Speech- language pathology services** | | | | | | | | | | | |
| Wave 1 | (2.6) | (1.9) | (2.8) | (2.8) | (2.6) | (3.6) | (3.2) | (2.8) | (1.7) | (6.2) | (2.5) |
| Sample size | 607 | 496 | 511 | 489 | 625 | 517 | 655 | 697 | 879 | 216 | 607 |
| Wave 2 | (2.2) | (2.9) | (2.8) | (2.3) | (2.8) | (3.2) | (2.9) | (2.6) | (1.9) | (6.0) | (2.8) |
| Sample size | 686 | 548 | 567 | 549 | 715 | 572 | 721 | 701 | 880 | 239 | 613 |
| **Diagnostic medical services** | | | | | | | | | | | |
| Wave 1 | (1.3) | (1.1) | (2.1) | (2.3) | (2.1) | (2.2) | (1.9) | (1.6) | (1.5) | (4.4) | (2.2) |
| Sample size | 607 | 496 | 511 | 489 | 625 | 517 | 655 | 697 | 879 | 216 | 607 |
| Wave 2 | (1.2) | (0.9) | (1.6) | (1.9) | (1.9) | (2.1) | (1.6) | (1.5) | (1.9) | (4.1) | (2.0) |
| Sample size | 686 | 548 | 567 | 549 | 715 | 572 | 721 | 701 | 880 | 239 | 613 |
| **Nursing care** | | | | | | | | | | | |
| Wave 1 | (2.7) | -- | (0.8) | (0.8) | (0.9) | (1.0) | (1.4) | (1.1) | (0.8) | (2.2) | (1.7) |
| Sample size | 607 | 496 | 511 | 489 | 625 | 517 | 655 | 697 | 879 | 216 | 607 |
| Wave 2 | (0.8) | -- | (1.4) | (0.9) | (0.9) | (2.4) | (2.3) | (1.3) | (1.5) | (2.6) | (2.0) |
| Sample size | 686 | 548 | 567 | 549 | 715 | 572 | 721 | 701 | 880 | 239 | 613 |

Standard errors are in parentheses

## Exhibit B-35 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibit 6-1

| Exhibit 6-1 | |
|---|---|
| Grade level of students in the 2001-02 school year | |
| Second | (0.5) |
| Third | (1.3) |
| Fourth | (1.5) |
| Fifth | (1.4) |
| Sixth | (1.4) |
| Seventh | (1.3) |
| Eighth | (1.3) |
| Ninth | (0.9) |
| Tenth | (0.2) |
| Ungraded | (0.6) |
| Sample size | 3,702 |

Standard errors are in parentheses.

## Exhibit B-36 – Chapter 6

### Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (6-2)

| | All Disabilities | 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 6-2 | | | | | | | | | | | | |
| Students retained at grade level in the 2001-02 school year | (1.3) | (2.5) | (2.4) | (2.7) | (2.5) | (2.6) | (2.8) | (2.6) | (2.6) | (2.2) | (5.2) | (2.8) |
| Sample size | 6,861 | 692 | 549 | 569 | 552 | 722 | 574 | 723 | 705 | 886 | 241 | 618 |

Standard errors are in parentheses.

## Exhibit B-37 – Chapter 6

## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (6-3 and 6-4)

| | All Disabilities | 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 6-3 and 6-4 | | | | | | | | | | | | |
| Art and music | | | | | | | | | | | | |
| Wave 1 | (0.7) | (1.2) | (0.9) | (1.5) | (2.2) | (1.7) | (1.6) | (1.8) | (2.1) | (1.3) | (3.5) | (1.9) |
| Sample size | 3580 | 380 | 323 | 364 | 282 | 440 | 279 | 363 | 290 | 461 | 114 | 257 |
| Wave 2 | (1.3) | (2.8) | (1.7) | (2.3) | (2.7) | (2.7) | (3.1) | (2.3) | (3.0) | (2.1) | (3.6) | (2.7) |
| Sample size | 3700 | 394 | 328 | 372 | 302 | 459 | 289 | 380 | 304 | 464 | 118 | 261 |
| Physical education | | | | | | | | | | | | |
| Wave 1 | (0.5) | (1.2) | (0.4) | (0.8) | (1.2) | (1.1) | (1.7) | (1.5) | (1.4) | (0.9) | (1.0) | (2.2) |
| Sample size | 3598 | 384 | 320 | 364 | 287 | 451 | 282 | 361 | 293 | 464 | 116 | 249 |
| Wave 2 | (0.9) | (2.0) | (1.3) | (1.6) | (1.7) | (1.6) | (3.1) | (2.4) | (1.7) | (1.6) | (2.9) | (2.7) |
| Sample size | 3700 | 394 | 328 | 372 | 302 | 459 | 289 | 380 | 304 | 464 | 118 | 261 |
| Study skills instructions | | | | | | | | | | | | |
| Wave 1 | (3.8) | (4.4) | (3.9) | (4.6) | (4.4) | (4.9) | (4.6) | (4.8) | (4.1) | (7.7) | (5.8) | (3.8) |
| Sample size | 357 | 272 | 316 | 247 | 389 | 247 | 313 | 263 | 414 | 103 | 232 | 357 |
| Wave 2 | (2.1) | (3.7) | (3.9) | (3.7) | (4.2) | (3.9) | (4.5) | (4.1) | (4.6) | (3.6) | (7.3) | (5.4) |
| Sample size | 3700 | 394 | 328 | 372 | 302 | 459 | 289 | 380 | 304 | 464 | 118 | 261 |
| Social skills instruction | | | | | | | | | | | | |
| Wave 1 | (2.3) | (4.1) | (4.5) | (3.3) | (3.6) | (4.3) | (4.8) | (4.6) | (5.0) | (2.9) | (7.6) | (4.5) |
| Sample size | 3204 | 327 | 260 | 335 | 257 | 400 | 244 | 312 | 256 | 442 | 101 | 244 |
| Wave 2 | (2.0) | (3.4) | (3.7) | (3.5) | (4.1) | (3.8) | (4.5) | (4.1) | (4.5) | (3.1) | (7.3) | (4.7) |
| Sample size | 3700 | 394 | 328 | 372 | 302 | 459 | 289 | 380 | 304 | 464 | 118 | 261 |

Standard errors are in parentheses.

## Exhibit B-38 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (6-5)

| | Age In Wave 1 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 6-5 | | | |
| Percentage taking: | | | |
| **Art or music** | | | |
| Wave 1 | (0.7) | (0.7) | (1.9) |
| Sample size | 1,178 | 1,107 | 1,041 |
| Wave 2 | (0.8) | (2.1) | (3.1) |
| Sample size | 1,191 | 1,122 | 1,125 |
| **Physical education** | | | |
| Wave 1 | (1.5) | (0.5) | (0.5) |
| Sample size | 245 | 1,168 | 1,100 |
| Wave 2 | (2.9) | (1.0) | (1.7) |
| Sample size | 250 | 1,191 | 1,122 |
| **Study skills instruction** | | | |
| Wave 1 | (3.9) | (3.9) | (3.8) |
| Sample size | 1,027 | 981 | 950 |
| Wave 2 | (3.6) | (3.8) | (3.6) |
| Sample size | 1,191 | 1,122 | 1,125 |
| **Social skills instruction** | | | |
| Wave 1 | (3.8) | (4.1) | (3.9) |
| Sample size | 1,051 | 970 | 934 |
| Wave 2 | (3.6) | (3.7) | (3.3) |
| Sample size | 1,191 | 1,122 | 1,125 |

## Exhibit B-39– Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 6-6 | | | | | | |
| Percentage taking: | | | | | | |
| **Art or music** | | | | | | |
| Wave 1 | (1.4) | (1.4) | (1.5) | (0.8) | (2.0) | (2.2) |
| Sample size | 935 | 834 | 985 | 2,483 | 602 | 379 |
| Wave 2 | (2.9) | (2.6) | (2.7) | (1.4) | (4.2) | (4.9) |
| Sample size | 981 | 844 | 1,017 | 2,557 | 629 | 395 |
| **Physical education** | | | | | | |
| Wave 1 | (1.3) | (0.9) | (0.9) | (0.6) | (0.8) | (2.6) |
| Sample size | 945 | 831 | 991 | 2,487 | 610 | 385 |
| Wave 2 | (2.1) | (2.1) | (2.1) | (1.1) | (2.6) | (2.9) |
| Sample size | 981 | 844 | 1,017 | 2,557 | 629 | 395 |
| **Study skills instruction** | | | | | | |
| Wave 1 | (4.5) | (4.5) | (4.5) | (2.5) | (5.8) | (7.2) |
| Sample size | 826 | 749 | 878 | 2,231 | 504 | 337 |
| Wave 2 | (4.1) | (4.4) | (4.1) | (2.4) | (5.1) | (6.8) |
| Sample size | 981 | 844 | 1,017 | 2,557 | 629 | 395 |
| **Social skills instruction** | | | | | | |
| Wave 1 | (4.6) | (4.7) | (4.5) | (2.6) | (5.5) | (7.6) |
| Sample size | 859 | 755 | 865 | 2,211 | 546 | 341 |
| Wave 2 | (4.1) | (4.3) | (3.8) | (2.3) | (5.2) | (6.6) |
| Sample size | 981 | 844 | 1,017 | 2,557 | 629 | 395 |

Standard errors are in parentheses.

**Exhibit B-40 – Chapter 6**
**Standard Errors and Unweighted Sample Sizes for Exhibit 6-7**

| Exhibit 6-7 | Wave 1 | Wave 2 |
|---|---|---|
| More time for tests | (2.1) | (2.0) |
| Tests read aloud | (2.3) | (2.4) |
| Modified tests | (2.3) | (2.3) |
| Alternate test | (2.1) | (2.2) |
| Modified grading standards | (2.2) | (2.2) |
| Slower-paced instruction | (2.3) | (2.4) |
| More time for assignments | (2.2) | (2.2) |
| Shorter/different assignments | (2.3) | (2.4) |
| More frequent feedback | (2.3) | (2.3) |
| Physical adaptations | (2.0) | (1.9) |
| Sample size | 3,289 | 3,190 |

Standard errors are in parentheses.

## Exhibit B-41 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (6-8)

| | 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 6-8 Percentage provided: | | | | | | | | | | | |
| More time for tests | | | | | | | | | | | |
| Wave 1 | (3.1) | (6.1) | (3.6) | (3.8) | (4.1) | (4.4) | (4.0) | (4.1) | (3.9) | (6.6) | (5.6) |
| Wave 2 | (3.0) | (6.2) | (3.5) | (3.7) | (4.2) | (4.4) | (4.2) | (4.0) | (4.0) | (5.2) | (5.6) |
| Test read to student | | | | | | | | | | | |
| Wave 1 | (3.9) | (6.2) | (3.7) | (4.4) | (4.0) | (4.5) | (4.2) | (4.8) | (3.8) | (7.3) | (5.5) |
| Wave 2 | (4.0) | (6.4) | (3.8) | (4.6) | (4.1) | (4.6) | (4.3) | (4.9) | (3.8) | (7.5) | (5.4) |
| Modified tests | | | | | | | | | | | |
| Wave 1 | (3.9) | (6.1) | (3.7) | (4.4) | (3.8) | (4.5) | (4.2) | (4.8) | (3.8) | (7.3) | (5.3) |
| Wave 2 | (4.0) | (6.1) | (3.8) | (4.5) | (3.8) | (4.6) | (4.3) | (4.9) | (3.9) | (7.5) | (5.3) |
| Modified grading standards | | | | | | | | | | | |
| Wave 1 | (3.7) | (5.4) | (3.8) | (4.3) | (2.7) | (3.7) | (4.2) | (4.6) | (3.8) | (7.3) | (5.4) |
| Wave 2 | (3.6) | (6.0) | (3.8) | (4.3) | (3.2) | (3.8) | (4.1) | (4.4) | (3.9) | (6.9) | (5.3) |
| Slower-paced instruction | | | | | | | | | | | |
| Wave 1 | (3.9) | (6.0) | (3.4) | (4.4) | (3.9) | (4.3) | (4.3) | (4.7) | (3.9) | (7.2) | (5.7) |
| Wave 2 | (4.0) | (6.3) | (3.7) | (4.6) | (4.1) | (4.4) | (4.4) | (4.6) | (3.9) | (7.3) | (5.6) |
| More time for assignments | | | | | | | | | | | |
| Wave 1 | (3.5) | (6.3) | (3.3) | (4.1) | (4.1) | (4.5) | (3.9) | (4.3) | (3.9) | (6.6) | (5.6) |
| Wave 2 | | | | | | | | | | | |
| Shorter or different assignments | | | | | | | | | | | |
| Wave 1 | (3.9) | (6.0) | (3.6) | (4.4) | (3.6) | (4.5) | (4.3) | (4.8) | (3.9) | (7.0) | (5.4) |
| Wave 2 | (4.0) | (6.4) | (3.8) | (4.5) | (3.8) | (4.6) | (4.4) | (4.8) | (4.0) | (7.0) | (5.5) |
| More frequent feedback | | | | | | | | | | | |
| Wave 1 | (3.8) | (5.8) | (3.8) | (4.4) | (3.6) | (4.1) | (4.2) | (4.7) | (3.9) | (7.3) | (5.2) |
| Wave 2 | (3.8) | (6.0) | (3.8) | (4.5) | (3.7) | (4.1) | (4.0) | (4.7) | (3.8) | (7.4) | (5.5) |
| Progress monitored by special education teacher | | | | | | | | | | | |
| Wave 1 | (3.7) | (6.0) | (3.2) | (3.9) | (4.0) | (3.9) | (3.9) | (4.3) | (3.4) | (6.1) | (5.1) |
| Wave 2 | (3.7) | (6.1) | (3.6) | (4.5) | (4.1) | (4.4) | (4.3) | (4.6) | (3.7) | (6.5) | (5.0) |
| Wave 1 Sample size | 357 | 140 | 357 | 278 | 424 | 275 | 352 | 282 | 443 | 114 | 241 |
| Wave 2 Sample size | 344 | 130 | 342 | 264 | 413 | 267 | 338 | 275 | 432 | 113 | 249 |

## Exhibit B-41 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (6-8) (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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Teacher aide, instructional assistant, or other personal aide | | | | | | | | | | | |
| Wave 1 | (3.7) | (6.0) | (3.7) | (4.4) | (4.0) | (4.6) | (4.3) | (4.8) | (3.4) | (7.2) | (5.1) |
| Wave 2 | (3.8) | (5.9) | (3.8) | (4.6) | (3.9) | (4.6) | (4.4) | (4.6) | (3.6) | (7.5) | (5.0) |
| Computer software for students with disabilities | | | | | | | | | | | |
| Wave 1 | (2.4) | (3.6) | (3.3) | (2.6) | (1.9) | (4.5) | (3.6) | (2.9) | (3.1) | (6.7) | (5.2) |
| Wave 2 | (1.9) | (3.8) | (3.2) | (1.9) | (2.0) | (4.7) | (3.6) | (3.1) | (3.5) | (5.4) | (5.1) |
| Wave 1 Sample size | 357 | 140 | 357 | 278 | 424 | 275 | 352 | 282 | 443 | 114 | 241 |
| Wave 2 Sample size | 344 | 130 | 342 | 264 | 413 | 267 | 338 | 275 | 432 | 113 | 249 |

Standard errors are in parentheses

## Exhibit B-42 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (6-9)

| | Grade level in the 2000-01 school year | | |
|---|---|---|---|
| | 1st through 3rd | 4th or 5th | 6th or above |
| Exhibit 6-9 | | | |
| Percentage provided: | | | |
| **More time for tests** | | | |
| Wave 1 | (4.1) | (3.7) | (3.2) |
| Wave 2 | (3.9) | (4.0) | (3.0) |
| **Test read to student** | | | |
| Wave 1 | (4.3) | (4.3) | (3.8) |
| Wave 2 | (4.3) | (4.4) | (3.9) |
| **Modified tests** | | | |
| Wave 1 | (4.2) | (4.3) | (3.8) |
| Wave 2 | (4.3) | (4.3) | (3.9) |
| **Alternative test/ assessments** | | | |
| Wave 1 | (3.9) | (4.1) | (3.3) |
| Wave 2 | (4.1) | (4.1) | (3.4) |
| **Modified grading standards** | | | |
| Wave 1 | (4.1) | (4.2) | (3.6) |
| Wave 2 | (4.1) | (4.1) | (3.6) |
| **Slower-paced instruction** | | | |
| Wave 1 | (4.3) | (4.3) | (3.8) |
| Wave 2 | (4.3) | (4.4) | (3.8) |
| **More time for assignments** | | | |
| Wave 1 | (4.1) | (3.7) | (3.6) |
| Wave 2 | (4.2) | (4.2) | (3.6) |
| **Shorter or different assignments** | | | |
| Wave 1 | (4.3) | (4.3) | (3.8) |
| Wave 2 | (4.3) | (4.4) | (3.8) |
| **More frequent feedback** | | | |
| Wave 1 | (4.2) | (4.3) | (3.7) |
| Wave 2 | (4.3) | (4.3) | (3.5) |
| **Progress monitored by a special education teacher** | | | |
| Wave 1 | (3.9) | (3.9) | (3.6) |
| Wave 2 | (4.0) | (4.1) | (3.7) |
| Wave 1 Sample size | 1,012 | 1,006 | 1,031 |
| Wave 2 Sample size | 982 | 951 | 1,004 |

## Exhibit B-42 – Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (6-9) (Concluded)

| | Grade level in the 2000-01 school year | | |
|---|---|---|---|
| | 1st through 3rd | 4th or 5th | 6th or above |
| Exhibit 6-9 | | | |
| Percentage provided: | | | |
| **Teacher aide. Instructional assistant, or other personal assistant** | | | |
| Wave 1 | (4.3) | (4.2) | (3.7) |
| Wave 2 | (4.3) | (4.2) | (3.8) |
| Wave 1 Sample size | 1,012 | 1,006 | 1,031 |
| Wave 2 Sample size | 982 | 951 | 1,004 |

## Exhibit B-43– Chapter 6
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 6-10 | | | | | | |
| Percentage provided: | | | | | | |
| **More time for tests** | | | | | | |
| Wave 1 | (3.8) | (4.1) | (4.6) | (2.4) | (5.0) | (7.3) |
| Wave 2 | (3.7) | (4.2) | (4.4) | (2.4) | (4.9) | (7.0) |
| **Test read to student** | | | | | | |
| Wave 1 | (4.5) | (4.8) | (4.8) | (2.7) | (5.7) | (7.7) |
| Wave 2 | (4.6) | (4.9) | (4.8) | (2.7) | (5.7) | (7.5) |
| **Modified tests** | | | | | | |
| Wave 1 | (4.5) | (4.8) | (4.6) | (2.7) | (5.7) | (7.6) |
| Wave 2 | (4.5) | (4.9) | (4.7) | (2.7) | (5.5) | (7.7) |
| **Modified grading standards** | | | | | | |
| Wave 1 | (4.5) | (4.7) | (4.2) | (2.5) | (5.7) | (7.5) |
| Wave 2 | (4.4) | (4.5) | (4.4) | (2.5) | (5.4) | (7.6) |
| **Slower-paced instruction** | | | | | | |
| Wave 1 | (4.5) | (4.8) | (4.6) | (2.7) | (5.4) | (7.7) |
| Wave 2 | (4.6) | (5.0) | (4.6) | (2.7) | (5.6) | (7.8) |
| **More time for assignments** | | | | | | |
| Wave 1 | (3.9) | (4.4) | (4.8) | (2.6) | (5.1) | (6.6) |
| Wave 2 | (4.2) | (4.8) | (4.7) | (2.7) | (4.8) | (7.2) |
| **Shorter or different assignments** | | | | | | |
| Wave 1 | (4.5) | (4.9) | (4.6) | (2.7) | (5.7) | (7.5) |
| Wave 2 | (4.6) | (4.9) | (4.7) | (2.7) | (5.7) | (7.5) |
| **More frequent feedback** | | | | | | |
| Wave 1 | (4.5) | (4.8) | (4.5) | (2.6) | (5.7) | (7.6) |
| Wave 2 | (4.4) | (4.8) | (4.5) | (2.6) | (5.5) | (7.4) |
| **Physical accommodations** | | | | | | |
| Wave 1 | (4.0) | (3.9) | (4.4) | (2.3) | (4.8) | (6.0) |
| Wave 2 | (3.7) | (4.1) | (4.4) | (2.3) | (4.9) | (5.2) |
| **Progress monitored by a special education teacher** | | | | | | |
| Wave 1 | (4.3) | (4.4) | (4.3) | (2.5) | (5.2) | (6.8) |
| Wave 2 | (4.3) | (4.7) | (4.6) | (2.6) | (5.4) | (7.1) |
| **Teacher aide. Instructional assistant, or other personal assistant** | | | | | | |
| Wave 1 | (4.5) | (4.8) | (4.6) | (2.6) | (5.7) | (7.6) |
| Wave 2 | (4.6) | (4.9) | (4.7) | (2.7) | (5.6) | (7.5) |
| **Computer software for students with disabilities** | | | | | | |
| Wave 1 | (3.1) | (3.4) | (2.7) | (1.7) | (4.3) | (5.2) |
| Wave 2 | (3.1) | (2.9) | (2.7) | (1.5) | (4.1) | (5.7) |
| Wave 1 Sample size | 889 | 764 | 899 | 2,268 | 556 | 357 |
| Wave 2 Sample size | 858 | 736 | 876 | 2,179 | 560 | 347 |

Standard errors are in parentheses.

## Exhibit B-44 – Chapter 7
## Standard Errors and Unweighted Sample Sizes for Exhibit 7-1, 7-2, 7-3

| | Wave 1 | Wave 2 |
|---|---|---|
| Exhibit 7-1 | | |
| Percentage with parents reporting satisfaction with: | | |
| **Child's school** | | |
| Very satisfied | (1.5) | (1.5) |
| Somewhat satisfied | (1.4) | (1.5) |
| Somewhat or very dissatisfied | (0.8) | (1.1) |
| Sample size | 6,809 | 6,727 |
| **How well school keeps me informed of my child's behavior and academic performance** | | |
| Very satisfied | (1.4) | (1.5) |
| Somewhat satisfied | (1.3) | (1.4) |
| Somewhat or very dissatisfied | (0.7) | (0.9) |
| Sample size | 6,799 | 6,728 |
| Percentage with parents reporting satisfaction with: | | |
| **The school is good at meeting my child's individual needs** | | |
| Strongly agree | (1.4) | (1.4) |
| Agree | (1.5) | (1.5) |
| Disagree or strongly disagree | (1.0) | (0.9) |
| Sample size | 6,762 | 6,668 |
| **The principal and assistant principal maintain good discipline at my child's school** | | |
| Strongly agree | (1.5) | (1.5) |
| Agree | (1.5) | (1.5) |
| Disagree or strongly disagree | (0.6) | (0.7) |
| Sample size | 6,663 | 6,555 |
| **In school, most students and teachers respect other** | | |
| Strongly agree | (1.5) | (1.4) |
| Agree | (1.5) | (1.5) |
| Disagree or strongly disagree | (0.8) | (0.8) |
| Sample size | 6,683 | 6,598 |

## Exhibit B-44 – Chapter 7
## Standard Errors and Unweighted Sample Sizes for Exhibit 7-1, 7-2, 7-3 (Concluded)

| | Wave 1 | Wave 2 |
|---|---|---|
| Exhibit 7-2 | | |
| Percentage with parents reporting satisfaction with: | | |
| **Children's education services or program** | | |
| Very satisfied | (1.6) | (1.7) |
| Somewhat satisfied | (1.5) | (1.8) |
| Somewhat or very dissatisfied | (0.8) | (1.1) |
| Sample size | 6,025 | 5,183 |
| **Children's special education services** | | |
| Very satisfied | (1.6) | (1.7) |
| Somewhat satisfied | (1.4) | (1.6) |
| Somewhat or very dissatisfied | (0.9) | (1.2) |
| Sample size | 6,052 | 5,846 |
| Exhibit 7-3 | | |
| Percentage with parents reporting satisfaction with: | | |
| **Children's teacher** | | |
| Very satisfied | (1.4) | (1.5) |
| Somewhat satisfied | (1.3) | (1.5) |
| Somewhat or very dissatisfied | (0.7) | (1.0) |
| Sample size | 6,777 | 6,701 |
| **The amount and difficulty of homework assigned by teachers** | | |
| Very satisfied | (1.5) | (1.3) |
| Somewhat satisfied | (1.5) | (1.6) |
| Somewhat or very dissatisfied | (1.0) | (1.0) |
| Sample size | 6,043 | 5,979 |
| Percentage with parents reporting agreement that teachers maintain good discipline in the classroom: | | |
| Very satisfied | (1.5) | (1.4) |
| Somewhat satisfied | (1.5) | (1.5) |
| Somewhat or very dissatisfied | (0.7) | (0.8) |
| Sample size | 6,681 | 6,586 |
| Standard errors are in parentheses | | |

Numbers are slightly different from report and data on server for **The school meets student's individual needs**

**Exhibit B-45 – Chapter 7**
**Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category**
**(7-4, 7-5, and 7-6)**

| | 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 7-4 Percentage whose parents report being "very satisfied" with child's: | | | | | | | | | | | |
| **Child's school** | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.9) | (2.9) | (2.9) | (3.0) | (3.5) | (3.1) | (2.8) | (2.8) | (5.9) | (3.1) |
| Sample size | 691 | 546 | 567 | 549 | 714 | 571 | 715 | 700 | 880 | 237 | 607 |
| Wave 2 | (2.6) | (2.9) | (2.8) | (2.6) | (2.9) | (3.5) | (3.0) | (2.7) | (2.7) | (5.6) | (3.1) |
| Sample size | 671 | 546 | 557 | 543 | 711 | 565 | 705 | 685 | 874 | 236 | 602 |
| **How well school informs parents of student's behavior and academic performance** | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.7) | (2.7) | (2.9) | (2.8) | (3.3) | (2.9) | (2.8) | (2.7) | (5.6) | (2.8) |
| Sample size | 690 | 546 | 565 | 546 | 715 | 571 | 713 | 697 | 881 | 237 | 606 |
| Wave 2 | (2.7) | (2.9) | (2.9) | (3.0) | (2.9) | (3.5) | (3.1) | (2.9) | (2.8) | (5.9) | (3.1) |
| Sample size | 675 | 545 | 557 | 544 | 712 | 563 | 704 | 686 | 875 | 236 | 600 |
| Percentage whose parents "strongly agree" that | | | | | | | | | | | |
| **The school meets student's individual needs** | | | | | | | | | | | |
| Wave 1 | (2.5) | (2.9) | (2.8) | (2.7) | (2.9) | (3.5) | (3.0) | (2.7) | (2.6) | (5.8) | (3.0) |
| Sample size | 685 | 541 | 559 | 543 | 709 | 570 | 712 | 699 | 877 | 233 | 603 |
| Wave 2 | (2.5) | (2.8) | (2.7) | (2.5) | (2.8) | (3.5) | (2.9) | (2.6) | (2.6) | (5.5) | (3.0) |
| Sample size | 669 | 544 | 550 | 537 | 711 | 563 | 706 | 680 | 866 | 235 | 595 |
| **Good discipline is maintained at school** | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.9) | (2.9) | (2.9) | (3.0) | (3.6) | (3.1) | (2.9) | (2.8) | (5.8) | (3.2) |
| Sample size | 683 | 543 | 551 | 538 | 705 | 555 | 701 | 687 | 853 | 232 | 586 |
| Wave 2 | (2.6) | (2.9) | (2.8) | (2.7) | (3.0) | (3.5) | (3.1) | (2.8) | (2.8) | (5.8) | (3.1) |
| Sample size | 663 | 538 | 546 | 537 | 700 | 546 | 686 | 671 | 834 | 232 | 573 |

## Exhibit B-45 – Chapter 7
## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (7-4, 7-5, and 7-6) (Continued)

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Most students and teachers respect each other** | | | | | | | | | | | |
| Wave 1 | (2.5) | (2.9) | (2.8) | (2.8) | (3.0) | (3.5) | (3.1) | (2.9) | (2.8) | (5.7) | (3.1) |
| Sample size | 680 | 538 | 552 | 532 | 704 | 559 | 708 | 690 | 866 | 228 | 597 |
| Wave 2 | (2.5) | (2.8) | (2.7) | (2.6) | (2.9) | (3.4) | (3.0) | (2.7) | (2.8) | (5.8) | (3.1) |
| Sample size | 657 | 537 | 545 | 530 | 704 | 553 | 697 | 674 | 851 | 230 | 590 |
| Exhibit 7-5 | | | | | | | | | | | |
| Percentage whose parents report being "very satisfied" with child's: | | | | | | | | | | | |
| **Education program and services** | | | | | | | | | | | |
| Wave 1 | (2.7) | (3.0) | (3.1) | (3.1) | (3.1) | (3.7) | (3.2) | (3.0) | (3.0) | (6.3) | (3.5) |
| Sample size | 642 | 477 | 500 | 489 | 644 | 502 | 645 | 623 | 772 | 210 | 492 |
| Wave 2 | (2.8) | (4.1) | (3.0) | (2.9) | (3.3) | (4.0) | (3.4) | (3.0) | (3.0) | (6.1) | (3.2) |
| Sample size | 525 | 270 | 474 | 408 | 546 | 433 | 545 | 532 | 715 | 201 | 509 |
| **Special education services** | | | | | | | | | | | |
| Wave 1 | (2.8) | (3.1) | (3.0) | (3.2) | (3.1) | (3.6) | (3.3) | (2.9) | (2.8) | (6.4) | (3.2) |
| Sample size | 581 | 437 | 500 | 466 | 609 | 495 | 623 | 657 | 860 | 205 | 588 |
| Wave 2 | (2.9) | (4.0) | (2.9) | (3.0) | (3.2) | (3.7) | (3.3) | (3.1) | (2.8) | (5.9) | (3.1) |
| Sample size | 566 | 291 | 535 | 465 | 620 | 504 | 603 | 581 | 836 | 227 | 586 |
| Exhibit 7-6 | | | | | | | | | | | |
| Percentage whose parents report being "very satisfied" with: | | | | | | | | | | | |
| **Children's teachers** | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.6) | (2.8) | (3.0) | (2.9) | (3.1) | (2.9) | (2.8) | (2.7) | (5.9) | (3.0) |
| Sample size | 686 | 546 | 562 | 545 | 713 | 571 | 713 | 696 | 875 | 235 | 603 |
| Wave 2 | (2.6) | (2.9) | (2.9) | (2.9) | (3.0) | (3.5) | (3.1) | (2.8) | (2.8) | (5.9) | (3.2) |
| Sample size | 662 | 544 | 557 | 540 | 711 | 563 | 702 | 684 | 870 | 236 | 600 |
| **Quantity and difficulty of homework assigned by teachers** | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.9) | (3.1) | (3.0) | (3.0) | (3.7) | (3.2) | (2.8) | (3.1) | (6.1) | (3.7) |
| Sample size | 679 | 537 | 481 | 497 | 691 | 512 | 660 | 662 | 674 | 218 | 421 |
| Wave 2 | (2.2) | (2.7) | (2.7) | (2.4) | (2.7) | (3.3) | (2.7) | (2.2) | (2.6) | (5.2) | (3.2) |
| Sample size | 639 | 531 | 487 | 490 | 675 | 502 | 655 | 648 | 695 | 216 | 428 |

**Exhibit B-45 – Chapter 7**
**Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category**
**(7-4, 7-5, and 7-6) (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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exhibit 7-5 | | | | | | | | | | | |
| Percentage whose parents "strongly agree" that teachers maintain good discipline in the classroom | | | | | | | | | | | |
| Wave 1 | (2.6) | (2.9) | (2.8) | (2.9) | (3.0) | (3.5) | (3.1) | (2.9) | (2.8) | (5.6) | (3.2) |
| Sample size | 672 | 543 | 559 | 532 | 705 | 561 | 707 | 684 | 871 | 228 | 588 |
| Wave 2 | (2.6) | (2.8) | (2.8) | (2.6) | (2.9) | (3.4) | (3.1) | (2.7) | (2.8) | (5.5) | (3.1) |
| Sample size | 654 | 537 | 550 | 529 | 701 | 559 | 692 | 667 | 854 | 228 | 585 |
| Standard errors are in parentheses | | | | | | | | | | | |

## Exhibit B-46 – Chapter 7
## Standard Errors and Unweighted Sample Sizes for Exhibits by Age (7-7)

| | Age In Wave 1 | | |
|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 or 14 |
| Exhibit 7-7 | | | |
| Percentage whose parents are "very satisfied" with: | | | |
| **Children's school** | | | |
| Wave 1 | (2.3) | (2.1) | (4.9) |
| Sample size | 2,832 | 3,279 | 614 |
| Wave 2 | (2.3) | (2.0) | (4.6) |
| Sample size | 2,801 | 3,237 | 603 |
| **Overall education program and services** | | | |
| Wave 1 | (2.4) | (2.2) | (5.3) |
| Sample size | 2,501 | 2,915 | 530 |
| Wave 2 | (2.8) | (2.3) | (5.3) |
| Sample size | 2,133 | 2,512 | 473 |
| **Special education services** | | | |
| Wave 1 | (2.4) | (2.3) | (5.4) |
| Sample size | 2,527 | 2,907 | 541 |
| Wave 2 | (2.7) | (2.3) | (5.5) |
| Sample size | 2,425 | 2,819 | 525 |
| **Children's teachers** | | | |
| Wave 1 | (2.1) | (2.1) | (5.0) |
| Sample size | 2,825 | 3,260 | 609 |
| Wave 2 | (2.4) | (2.1) | (4.9) |
| Sample size | 2,793 | 3,223 | 599 |

## Exhibit B-47– Chapter 7
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 7-8 | | | | | | |
| Percentage whose parents are "very satisfied" with: | | | | | | |
| **Children's school** | | | | | | |
| Wave 1 | (2.6) | (2.8) | (2.6) | (1.8) | (3.5) | (4.6) |
| Sample size | 2,227 | 1,831 | 2,311 | 4,449 | 1,296 | 829 |
| Wave 2 | (2.4) | (2.7) | (2.7) | (1.8) | (3.2) | (4.5) |
| Sample size | 2,190 | 1,806 | 2,287 | 4,387 | 1,281 | 824 |
| **Overall education program and services** | | | | | | |
| Wave 1 | (2.7) | (2.9) | (2.8) | (1.8) | (3.7) | (4.9) |
| Sample size | 1,972 | 1,621 | 2,042 | 3,966 | 1,145 | 702 |
| Wave 2 | (2.8) | (3.1) | (3.2) | (2.0) | (3.7) | (5.6) |
| Sample size | 1,712 | 1,421 | 1,712 | 3,402 | 1,023 | 578 |
| **Special education services** | | | | | | |
| Wave 1 | (2.7) | (2.8) | (2.8) | (1.8) | (3.7) | (4.9) |
| Sample size | 1,942 | 1,770 | 2,088 | 3,981 | 1,155 | 709 |
| Wave 2 | (2.8) | (3.1) | (3.1) | (2.0) | (3.6) | (5.2) |
| Sample size | 1,946 | 1,571 | 1,942 | 3,788 | 1,140 | 710 |
| **Children's teachers** | | | | | | |
| Wave 1 | (2.5) | (2.7) | (2.5) | (1.7) | (3.5) | (4.5) |
| Sample size | 2,215 | 1,825 | 2,304 | 2,215 | 1,825 | 2,304 |
| Wave 2 | (2.6) | (2.8) | (2.7) | (1.8) | (3.4) | (4.6) |
| Sample size | 2,185 | 1,797 | 2,276 | 4,367 | 1,273 | 822 |

Standard errors are in parentheses.

## Exhibit B-48 – Chapter 8

### Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-1)

| | All Disabilities | 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 8-1 | | | | | | | | | | | | |
| Changes in absenteeism | | | | | | | | | | | | |
| Wave 1 | (1.2) | (2.6) | (1.8) | (2.1) | (2.2) | (1.8) | (2.1) | (2.5) | (2.9) | (1.9) | (4.1) | (5.1) |
| Sample size | 2,900 | 299 | 256 | 295 | 224 | 350 | 226 | 297 | 232 | 397 | 91 | 207 |
| Wave 2 | (1.1) | (2.2) | (2.0) | (1.8) | (2.9) | (1.9) | (2.4) | (2.5) | (2.4) | (2.0) | (4.2) | (3.3) |
| Sample size | 3,036 | 305 | 268 | 306 | 243 | 381 | 233 | 307 | 247 | 395 | 98 | 226 |
| Standard errors are in parentheses. | | | | | | | | | | | | |

## Exhibit B-49 – Chapter 8

### Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-2)

| | All Disabilities | 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 8-2 | | | | | | | | | | | | |
| Students motivation for schooling | | | | | | | | | | | | |
| High - Wave 1 | (2.5) | (4.2) | (4.7) | (4.8) | (4.6) | (4.8) | (6.6) | (5.0) | (4.1) | (6.3) | (8.9) | (9.4) |
| Sample size | 2,384 | 297 | 225 | 218 | 243 | 292 | 141 | 268 | 323 | 198 | 78 | 99 |
| High - Wave 2 | (2.2) | (3.8) | (4.1) | (4.4) | (4.3) | (4.3) | (5.4) | (4.5) | (3.6) | (5.7) | (8.0) | (8.6) |
| Sample size | 2,894 | 352 | 296 | 282 | 269 | 364 | 179 | 326 | 376 | 238 | 93 | 116 |
| Low - Wave 1 | (1.6) | (3.0) | (2.1) | (2.6) | (3.4) | (3.0) | (3.6) | (2.9) | (3.2) | (3.6) | (6.5) | (3.8) |
| Sample size | 2,384 | 297 | 225 | 218 | 243 | 292 | 141 | 268 | 323 | 198 | 78 | 99 |
| Low - Wave 2 | (1.6) | (3.1) | (2.4) | (3.5) | (3.6) | (3.0) | (3.7) | (3.0) | (2.9) | (4.1) | (6.2) | (6.3) |
| Sample size | 2,894 | 352 | 296 | 282 | 269 | 364 | 179 | 326 | 376 | 238 | 93 | 116 |
| Standard errors are in parentheses. | | | | | | | | | | | | |

## Exhibit B-50 – Chapter 8

### Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-3)

| | All Disabilities | 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 8-3 | | | | | | | | | | | | |
| Students motivation for schooling | | | | | | | | | | | | |
| Decreased .5 SD in motivation | (1.8) | (3.1) | (3.5) | (3.8) | (3.9) | (3.5) | (4.6) | (3.8) | (3.3) | (4.6) | (6.4) | (6.6) |
| Comparable motivation | (2.1) | (3.7) | (4.0) | (3.9) | (4.2) | (4.0) | (5.7) | (4.2) | (3.7) | (5.2) | (8.0) | (7.8) |
| Increased .5 SD in motivation | (2.1) | (3.6) | (4.0) | (4.2) | (4.2) | (4.1) | (5.4) | (4.3) | (3.7) | (5.3) | (7.7) | (8.2) |
| Sample size | 3,027 | 372 | 302 | 296 | 281 | 383 | 182 | 338 | 390 | 257 | 96 | 127 |

Standard errors are in parentheses.

## Exhibit B-51 – Chapter 8

## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-4)

| | All Disabilities | 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 8-4 | | | | | | | | | | | | |
| Students' classroom behavior : | | | | | | | | | | | | |
| **General Education** | | | | | | | | | | | | |
| Worsen behavior in W2 | (2.6) | (4.6) | (4.0) | (6.9) | (5.9) | (4.5) | (4.8) | (4.7) | (5.2) | (6.1) | (11.3) | (13.8) |
| Comparable behavior in W1 & W2 | (2.9) | (5.3) | (4.5) | (8.9) | (6.4) | (5.8) | (5.7) | (5.9) | (6.2) | (6.7) | (12.5) | (14.8) |
| Improved behavior in W2 | (2.5) | (4.7) | (3.7) | (8.7) | (6.2) | (4.9) | (5.0) | (5.1) | (5.6) | (6.3) | (11.7) | (15.4) |
| Sample size | 1,572 | 191 | 265 | 59 | 119 | 176 | 168 | 186 | 166 | 147 | 44 | 41 |
| **Special Education** | | | | | | | | | | | | |
| Worsen behavior in W2 | (2.7) | (4.7) | (9.1) | (3.9) | (4.8) | (4.8) | (6.9) | (5.6) | (6.0) | (3.9) | (8.3) | (4.6) |
| Comparable behavior in W1 & W2 | (2.9) | (5.0) | (10.6) | (4.2) | (5.5) | (5.3) | (8.0) | (6.4) | (6.6) | (4.6) | (9.3) | (5.7) |
| Improved behavior in W2 | (2.6) | (4.5) | (10.1) | (3.5) | (4.9) | (4.9) | (6.6) | (5.6) | (6.4) | (3.9) | (8.5) | (5.1) |
| Sample size | 2,077 | 204 | 51 | 303 | 178 | 268 | 106 | 166 | 148 | 319 | 81 | 231 |

Standard errors are in parentheses.

## Exhibit B-52 – Chapter 8

## Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-5)

| | All Disabilities | 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 8-5 | | | | | | | | | | | | |
| Changes in suspension or expulsions: | | | | | | | | | | | | |
| Never suspended/expelled in W1 or W2 | (1.2) | (2.2) | (1.7) | (2.3) | (2.9) | (1.9) | (2.0) | (2.0) | (2.5) | (1.8) | (4.8) | (2.4) |
| Suspended/expelled in W1, not in W2 | (1.0) | (1.9) | (1.3) | (1.9) | (3.0) | (1.4) | (1.5) | (1.5) | (2.1) | (1.3) | (4.2) | (2.1) |
| Suspended/expelled in W2, not in W1 | (1.0) | (1.7) | (1.3) | (1.6) | (2.7) | (1.4) | (1.5) | (1.4) | (2.0) | (1.3) | (3.8) | (1.7) |
| Suspended/expelled in both W1 and W2 | (0.8) | (1.4) | (1.2) | (1.5) | (2.3) | (1.3) | (1.4) | (1.4) | (1.7) | (1.3) | (2.8) | (1.4) |
| Sample size | 6,838 | 689 | 547 | 568 | 547 | 718 | 569 | 719 | 705 | 886 | 240 | 618 |

Standard errors are in parentheses.

## Exhibit B-53– Chapter 8
## Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity

| | Age in Wave 1 | | | Gender | |
|---|---|---|---|---|---|
| | 7 to 9 | 10 to 12 | 13 to 14 | Male | Female |
| Exhibit 8-6 | | | | | |
| Changes in suspension or expulsions: | | | | | |
| Never suspended/expelled in W1 or W2 | (1.5) | (1.8) | (4.6) | (1.6) | (1.6) |
| Suspended/expelled in W1, not in W2 | (1.2) | (1.6) | (4.2) | (1.4) | (1.2) |
| Suspended/expelled in W2, not in W1 | (1.1) | (1.3) | (3.3) | (1.2) | (1.2) |
| Suspended/expelled in both W1 and W2 | (0.9) | (1.2) | (2.7) | (1.0) | (1.1) |
| Sample size | 2,847 | 3,290 | 617 | 4,530 | 2,268 |

Standard errors are in parentheses.

**Exhibit B-54– Chapter 8**
**Standard Errors and Unweighted Sample Sizes for Exhibits by Household Income and Race/Ethnicity**

| | Household Income | | | Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| | $25,000 and Less | $25,001 to $50,000 | More than $50,000 | White | African American | Hispanic |
| Exhibit 8-6 | | | | | | |
| Changes in suspension or expulsions: | | | | | | |
| Never suspended/expelled in W1 or W2 | (2.4) | (2.0) | (1.7) | (1.3) | (3.5) | (3.8) |
| Suspended/expelled in W1, not in W2 | (2.1) | (1.7) | (1.2) | (1.0) | (3.2) | (3.2) |
| Suspended/expelled in W2, not in W1 | (1.4) | (1.3) | (1.2) | (0.7) | (2.2) | (2.2) |
| Suspended/expelled in both W1 and W2 | (1.5) | (1.3) | (1.3) | (0.8) | (2.2) | (2.5) |
| Sample size | 2,234 | 1,840 | 2,322 | 4,470 | 1,300 | 827 |

Standard errors are in parentheses.

## Exhibit B-55 – Chapter 8

### Standard Errors and Unweighted Sample Sizes for Exhibits by Disability Category (8-7, 8-8, and 8-9)

| | All Disabilities | 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 8-7 | | | | | | | | | | | | |
| Fluctuations in grades: | | | | | | | | | | | | |
| Grades went down from W1 to W2 | (1.4) | (2.4) | (2.6) | (2.6) | (2.9) | (2.6) | (3.1) | (2.6) | (2.7) | (2.5) | (5.0) | (3.1) |
| No change in grades from W1 to W2 | (1.4) | (2.5) | (2.9) | (2.7) | (2.7) | (2.9) | (3.5) | (3.0) | (2.7) | (2.7) | (5.6) | (3.0) |
| Grades improved from W1 to W2 | (1.5) | (2.6) | (2.8) | (2.9) | (2.9) | (2.8) | (3.4) | (3.1) | (2.8) | (2.8) | (6.0) | (3.3) |
| Sample size | 6,522 | 676 | 541 | 541 | 536 | 709 | 549 | 695 | 685 | 811 | 229 | 522 |
| Exhibit 8-8 | | | | | | | | | | | | |
| Fluctuations in scores of reading passage comprehension: | | | | | | | | | | | | |
| Decreased 7 or more pts | (1.8) | (3.3) | (3.3) | (3.7) | (3.9) | (3.4) | (4.8) | (3.6) | (3.5) | (4.5) | (7.7) | (7.1) |
| Comparable performance | (2.2) | (3.8) | (4.1) | (4.2) | (4.4) | (4.1) | (5.7) | (4.5) | (3.8) | (4.9) | (7.8) | (7.9) |
| Increased by 7 or more pts | (2.2) | (3.8) | (4.1) | (4.2) | (4.4) | (4.1) | (5.7) | (4.5) | (3.8) | (4.9) | (7.8) | (7.9) |
| Sample size | 3,079 | 372 | 296 | 301 | 285 | 390 | 181 | 331 | 388 | 291 | 99 | 142 |
| Exhibit 8-9 | | | | | | | | | | | | |
| Fluctuations in mathematics calculation scores: | | | | | | | | | | | | |
| Decreased 7 or more pts | (1.9) | (3.2) | (3.6) | (4.0) | (4.0) | (3.8) | (5.0) | (4.1) | (3.4) | (4.8) | (7.5) | (8.4) |
| Comparable performance | (2.2) | (3.8) | (4.3) | (4.6) | (4.4) | (4.2) | (5.9) | (4.6) | (3.9) | (5.3) | (8.3) | (8.4) |
| Increased by 7 or more pts | (2.0) | (3.4) | (3.8) | (4.0) | (3.7) | (4.0) | (5.1) | (4.2) | (3.3) | (5.0) | (7.3) | (8.0) |
| Sample size | 2,872 | 360 | 278 | 257 | 275 | 379 | 175 | 310 | 377 | 256 | 90 | 113 |

Standard errors are in parentheses.