

6. *The Emerging Independence of Elementary and Middle School Students with Disabilities*

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For the better part of the last century, children with disabilities often were sent to special residential schools (e.g., those for young people with visual or hearing impairments) or institutions that provided little in the way of educational programs (e.g., for children with significant mental retardation). Students who did attend public schools were likely to be placed in “special classes” where they were segregated from their peers without disabilities. By the latter part of the 20th century, the de-institutionalization movement, a surge in advocacy, a heightened public awareness, and the support from legislation had changed how society interacts with people with disabilities. Support is growing for the notion that all children with disabilities are capable of learning, becoming contributing citizens in the community, and living as independent a life as possible (McVilly & Rawlinson, 1998).

In recent years, this perspective has been reflected in a notable change in the way children with disabilities are viewed and treated by the adults in their lives. Increasingly and justifiably, students with disabilities are viewed as capable of growing up to determine their own futures. Students receiving special education services are being encouraged to develop decision-making and self-determination skills as early as elementary school (e.g., through games and activities that encourage making choices). Attributes of self-care and personal responsibility take on greater importance as children enter adolescence. These types of skills are essential during the middle school years, when children are forming self-identify, discovering independence, and being heavily influenced by their peers. As they move toward high school, students increasingly are expected to be able to advocate for their preferences and needs, including being part of the transition planning process, and to make personal judgments regarding their future (Johnson & Sharpe, 2000; Zhang, 2001).

Studies show that students who are expected to take responsibility for planning their futures and to engage in self-determination activities in school also take greater responsibility for their lives after school (Malian & Nevin, 2002; Price, Wolensky, & Mulligan, 2002). This early experience with responsibility can be manifested in several ways. For example, students who are expected to complete chores both at home and at school are exposed to decision-making opportunities and gain experience in personal responsibility (e.g., setting priorities, taking initiative, persisting with a task until it is completed). As the self-determination movement grows, students with disabilities are likely to gain increased functional, self-care, and household skills, and to become increasingly active in contributing to decisions as they age. These types of experiences help

students to develop a keen locus of control; that is, to recognize their own responsibility for accomplishments and disappointments (Ross & Taylor, 1989).¹

This chapter highlights skills that support students' emerging independence, their behaviors that express that independence at home, and their general sense of their own self-efficacy, focusing on the following indicators:

- Managing self-care activities
- Using functional cognitive skills
- Getting around independently outside the home
- Persisting in completing tasks
- Self-advocating
- Taking on household responsibilities
- Evidencing a sense of locus of control.

Independence on these dimensions is described both for students with disabilities as a group and for those who differ in their primary disability category. Then, the relationships among these multiple indicators of independence are explored. Finally, a measure of locus of control has been chosen for multivariate because it is a foundation for increasing independence as children age.

Dimensions of Emerging Independence of Students with Disabilities

Skills that Support Emerging Independence

SEELS has investigated the extent to which students with disabilities are acquiring a variety of skills that enhance their ability to become increasingly independent as they age. These skills involve caring for their personal physical needs, cognitively processing and acting on information, moving around in the environment, persisting with tasks, and advocating for oneself.

Self-care skills. To assess the independence of students with disabilities in caring for their fundamental physical needs, their parents were asked to rate how well students can feed and dress themselves without help on a 4-point scale that ranges from “not at all well” to “very well.” A summative scale of abilities ranges from 2 (both skills done “not at all well”) to 8 (both skills done “very well”) (Exhibit 6-1).

¹ Analyses similar to those reported in this chapter were conducted for secondary age students as part of the National Longitudinal Transition Study 2 (NLTS2) and are reported in Cameto, Levine, Wagner, & Marder, 2003.

Exhibit 6-1
Self-care Skills of Students with Disabilities

Percentage who:

Feed themselves without help:	
Very well	89.2
Pretty well	8.5
Not very or not at all well	2.3
Dress themselves without help:	
Very well	78.0
Pretty well	16.1
Not very or not at all well	5.9
Have a self-care scale score of:	
High (8)	75.7
Medium (5 to 7)	22.4
Low (2 to 4)	1.9

Source: Wave 1 parent interviews.
Standard errors and sample sizes are in Appendix B.

- According to parents, almost 90% of students are able to feed themselves on their own “very well,” and 8% do so “pretty well.” Only 2% feed themselves less well.
- Fewer students (78%) can dress themselves “very well,” and more than 16% can do so “pretty well.” Only 6% dress themselves not very or not at all well.
- About three-fourths of students have a high self-care skills scale score; only 2% have a low score.

Functional cognitive skills. Parents were asked to evaluate their children regarding four common skills that arise in the context of daily living: reading and understanding common signs, telling time on a clock with hands (i.e., an analog clock), counting change, and looking up telephone numbers and using the telephone. These skills are referred to here as functional cognitive skills because they require the cognitive ability to read, count, and calculate. As such, they suggest much about students’ abilities to perform a variety of more complex cognitive tasks independently. However, they also require sensory and physical skills (e.g., seeing signs, manipulating a telephone). Consequently, a high score indicates high functioning in all of these areas, but a low score can result from a deficit in one or more of the cognitive, sensory, or physical domains.

- Parents report that students with disabilities have more difficulty performing functional cognitive skills (Exhibit 6-2) than the self-care skills described above. Still, most students can competently complete these tasks.

Exhibit 6-2
Functional Cognitive Skills of Students with
Disabilities

Percentage who:

Read and understand common signs:	
Very well	70.3
Pretty well	18.3
Not very well	7.6
Not at all well	3.7
Tell time on an analog clock:	
Very well	37.5
Pretty well	32.1
Not very well	19.8
Not at all well	10.5
Count change:	
Very well	42.4
Pretty well	28.5
Not very well	21.5
Not at all well	7.6
Look up telephone numbers and use the phone:	
Very well	30.9
Pretty well	24.3
Not very well	23.0
Not at all well	21.7
Have a functional cognitive skills scale score of:	
High (15 or 16)	24.4
Medium (9 to 14)	63.6
Low (4 to 8)	12.0

Source: Wave 1 parent interviews.
Standard errors and sample sizes are in Appendix B.

- Approximately 90% of students read and understand common signs “very well” or “pretty well.”
- About 70% tell time and a similar percentage count change “very well” or “pretty well.”
- Looking up telephone numbers and using the telephone is the task that presents students with the greatest difficulty; 55% of students perform this task “very well” or “pretty well” according to parents.
- A summative scale of parents’ ratings of students’ abilities to perform these functional mental skills was created, which ranges from 4 (all skill done “not at all well”) to 16 (all skills done “very well”). About one-fourth of students with disabilities score high on this scale (15 or 16), whereas 12% score at the low range (4 to 8), indicating they encounter difficulty with several of the tasks.

Mobility. As children enter the middle childhood and adolescent years, being able to go places outside the home by themselves becomes a hallmark of emerging maturity and independence. But getting around outside the home involves both cognitive and physical abilities, and this can be difficult for some students who have limitations in either or both of these areas of functioning. The ability of students to navigate the nearby environment outside their homes was assessed for students age 12 or older using parents’ ratings of how well students are able to “get to places outside the home, like to school, to a nearby store or park, or to a neighbor’s house.” Parents responded using a 4-point scale ranging from “very well” to “not at all well.”

In addition, information was collected for all students identified as having a visual impairment as the primary disability classification, as reported by school districts, a disability that has particular implications for mobility. School staff who were best able to describe the overall school programs of these students were asked to report how well (“not very well,” “pretty well,” “very well”) they are able to perform 10 mobility activities (e.g., travel indoors using remotely learned routes, execute a route given a verbal set of directions).² A composite mobility performance score was calculated by summing these responses, which range from a low of 10 to a maximum of 30:

- The majority of students get around in their local area “very well” (about 70%) or “pretty well” (about 11%), although 12% do not get around well on their own at all (Exhibit 6-3).

Exhibit 6-3
Mobility of Students with Disabilities

Percentage who:	
Get to places outside the home. ^a	
Very well	70.1
Pretty well	11.4
Not very well	6.6
Not at all well	11.9
Have a mobility scale score for students with visual impairments of: ^b	
High (24-30)	56.3
Medium (16-23)	32.9
Low (10-16)	10.8

^aSource: Wave 1 parent interviews. Includes students 12 years old or older.

^bSource: Wave 1 student’s school program questionnaire.

Standard errors and sample sizes are in Appendix B.

- School staff reported that more than half (56%) of students with visual impairments perform in the high range and that another third have medium

² Appendix A provides the full set of these items.

mobility scores. They reported low mobility performance scores for 11% of students with visual impairments.

Self-determination skills. The road to independence for children and adolescents includes the development of self-determination skills, such as persisting with tasks to completion or advocating for oneself. To assess persistence, parents and teachers³ were asked how often students “keep working at something until finished, even if it takes a long time.” Responses included “very often,” “sometimes,” and “never.” Self-advocacy is assessed by school staff ratings of how well a student can “ask for what he/she needs to do his or her best in class.” They rated this self-advocacy skill on a 4-point scale that ranges from “very well” to “not at all well.”

- Most students with disabilities are reported to persistent with a task “very often” (34%) or “sometimes” (50%). Sixteen percent of students reportedly “never” follow a task through to completion.
- School staff report that most students with disabilities are developing self-advocacy skills, with about one-third (33%) asking for what they need to do their best in class “very often,” and almost half (49%) self-advocating “sometimes.” Eighteen percent are reported to “never” ask for what they need to do their best in class.

Exhibit 6-4
Persistence and Self-advocacy Skills of Students with Disabilities

Percentage who:	
Keep working at something until finished: ^a	
Very often	34.2
Sometimes	49.9
Never	15.8
Ask for what they need to do their best in class: ^a	
Very often	33.4
Sometimes	48.5
Never	18.2

^aSource: Wave 1 parent interviews or teacher questionnaire.

^bSource: Wave 1 teacher questionnaire.

Standard errors and sample sizes are in Appendix B.

³ In measuring persistence, data from teachers has been used when a parent report was missing.

Household Responsibilities

Most elementary-school-age children are expected to perform some household chores. More than 96% of this age group in the general population were reported by parents to be involved in household chores in some way (National Center for Education Statistics, 2000), and 90% of parents of students with disabilities in elementary and middle school say they have rules at home about students doing household chores. Responsibilities around the house for children can include fixing their own breakfasts or lunches, straightening up their rooms or living areas, and doing their own laundry. These kinds of daily living responsibilities can measure students' competence and growing independence.

Parents were asked how often students fix their own breakfasts or lunches, straighten up their living areas, and do their laundry (Exhibit 6-5). The frequency of performing these tasks was reported on a 4-point scale ranging from “never” to “always.” Summing these values creates a scale that ranges from 3 (all activities “never” done) to 12 (all activities “always” done).

Exhibit 6-5 Household Responsibilities of Students with Disabilities

Percentage who:	
Fix their own breakfast or lunch:	
Always	17.4
Usually	17.3
Sometimes	47.9
Never	17.4
Straighten up their own room/living area:	
Always	23.3
Usually	17.0
Sometimes	45.6
Never	14.6
Do their laundry:	
Always	3.6
Usually	3.7
Sometimes	20.9
Never	71.8
Have a household responsibilities scale score of:	
High (11 or 12)	2.5
Medium (7 to 10)	37.2
Low (3 to 6)	60.3

Source: Wave 1 parent interviews.
Standard errors and sample sizes are in Appendix B.

- About 85% of students with disabilities fix their own breakfasts or lunches and straighten up their own living areas at least “sometimes,” although no

more than 40% are reported to perform these household responsibilities “always” or “usually.”

- Doing laundry is a much less common activity for students with disabilities in the SEELS age range; fewer than 30% ever do laundry.
- More than 60% of students score “low” on the scale of household responsibilities, indicating that they do these activities “sometimes” or “never.” Only 2% are reported to do almost all the activities “always.”

Locus of Control

Locus of control refers to the tendency to attribute both success and difficulties either to internal factors (e.g., one’s own effort, skill, or choices) or external factors (e.g., luck or other people’s decisions) (Conner, 1995). Having a strong internal locus of control enables students to link their efforts, such as studying for tests and doing homework, to outcomes and to take responsibility for the consequences of their own choices. Those who have primarily an external locus of control are less likely to seek solutions to problems because they feel they have little control over what happens to them and is a factor in “learned helplessness” (Seligman, 1975; Wortman & Brehm, 1975). Having a strong internal locus of control has been linked to greater academic success (Findley & Cooper, 1983; Kernis, 1984; Ross & Taylor, 1989) and resilience (Garmezy & Rutter, 1983).

Locus of control scores were derived from the School Attitude Measure (Wick, 1990), which is the sum of items related to students’ perceptions of the cause of bad grades, how things turn out at school, whether “a student like me” can get good grades, whether the student has control over his or her grades, and whether the student knows how to be successful in school. Students rated themselves on these items on a 4-point scale that ranges from “never agree” to “always agree.” The scale ranges from 5 to 20, but actual scores fall between 8.6 and 12.3, with a mean of 10.

- Students with disabilities have self-reported locus of control scores that span a wide range. Almost one-fourth (23%) of students report very high internal locus of control, indicating that they believe that they have personal influence over the grades they receive and the success they achieve in school more generally. Almost one-fifth (19%) report high internal locus of control.
- In contrast, about one-third of students with disabilities report a moderate level of internal locus of control, and 1 in 4 indicate they do not feel they have such control and are unsure of how to do better in school.

Disability Differences in Emerging Independence

Students with different primary disability classifications differ dramatically in the extent to which they demonstrate skills and behaviors that indicate emerging independence (Exhibit 6-6).

- Larger proportions of students in all disability categories perform self-care skills with “high” ability than perform functional cognitive skills at that level.
- Dressing and feeding themselves are still difficult tasks for some students. Only among students with learning disabilities or speech or hearing impairments do more than three-fourths of students perform both tasks “very well”; 2% or fewer of these students reportedly have difficulty with either activity. In contrast, more than one in five students with multiple disabilities score in the low range on the self-care scale.
- In six disability categories, the proportion of students performing functional mental skills with high ability exceeds 20%: learning disability; emotional disturbance; and speech, hearing, orthopedic, and other health impairments. Even in these categories, however, from 7% to 22% of students score in the low range on the functional mental skills scale. Among students with mental retardation, autism, and multiple disabilities, from 40% to 51% of students score in the low range on the functional cognitive skills scale, as do almost 30% of students with visual impairments or traumatic brain injuries. In these categories, from 6% to 16% of students perform functional cognitive skills with high ability.
- A high level of mobility is reported for 70% to 80% of students with other health impairments, learning disabilities, or speech impairments. In contrast, from 28% to 34% of students with autism, visual impairments, or multiple disabilities manage to get around outside the house very well. However, about one-third of students with autism or multiple disabilities and about one-quarter of students with orthopedic or visual impairments are reported to get around outside the house “not at all well” on their own.
- Although the frequency of students exhibiting persistence and self-advocacy varies across disability categories, the ranges for students who do these “very often” is narrower than they are for mobility (24% to 42% for persistence and 15% to 40% for self-advocacy vs. 28% to 80% for mobility).

Exhibit 6-6
Skills and Behaviors that Support Emerging Independence, by Disability Category

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
Percentage who:											
Have a self-care skills scale score of: ^a											
High (8)	81.2	85.6	54.4	64.7	77.1	45.1	34.4	60.0	33.0	44.2	31.6
Medium (5 to 7)	18.4	14.2	39.4	33.0	21.3	44.7	47.8	36.8	58.8	43.9	47.6
Low (2 to 4)	.4	.2	6.2	2.3	1.6	10.2	17.8	3.2	8.2	11.9	20.8
Have a functional cognitive skills scale score of: ^a											
High (15 or 16)	23.3	31.8	6.2	27.0	22.9	15.9	21.4	28.1	9.1	10.6	9.0
Medium (9 to 14)	69.9	61.7	53.7	62.7	66.1	56.8	56.8	58.3	47.9	61.4	40.0
Low (4 to 8)	6.8	6.5	40.1	10.3	11.0	27.3	21.8	13.6	43.0	28.0	51.0
Get around outside the house ^{a, b}											
Very well	75.0	69.9	50.0	67.0	66.8	31.3	49.3	80.1	28.1	58.1	34.4
Not at all well	10.9	13.1	16.4	10.2	9.1	22.4	24.3	3.1	34.2	9.8	34.9
Keep working at something until finished ^c											
Very often	33.2	40.8	29.1	23.4	42.0	38.0	33.3	23.6	26.2	27.8	27.9
Sometimes	50.9	48.8	48.0	51.5	48.4	45.8	50.6	54.0	51.8	44.4	47.4
Never	15.9	10.4	22.9	25.1	9.6	16.2	16.1	22.4	22.0	27.8	24.7
Ask for what they need to do their best in class ^d											
Very often	33.4	39.2	29.1	19.6	35.5	33.6	35.7	25.4	14.7	31.2	26.7
Sometimes	48.8	46.0	51.7	57.7	46.6	48.2	44.3	49.2	48.4	50.0	42.5
Never	17.8	14.8	19.2	22.7	17.9	18.2	20.0	25.4	36.9	18.8	30.8
Have a household responsibilities scale score of: ^a											
High (15 or 16)	3.8	1.7	1.4	1.2	1.8	1.1	0.5	2.1	0.1	1.2	1.3
Medium (9 to 14)	41.1	39.3	29.6	31.9	42.3	32.1	21.4	28.8	14.8	28.6	18.7
Low (4 to 8)	55.1	59.0	69.0	66.9	55.9	66.8	78.1	69.1	85.1	70.2	80.0
Have a locus of control score of: ^{e, f}											
Very high	19.1	27.1	13.0	24.7	23.8	33.9	25.1	30.7	28.9	16.7	28.5
Low	30.1	22.6	42.4	23.7	19.6	19.7	26.5	18.6	22.5	40.8	28.1

^aSource: Wave 1 parent interviews.

^bThe categories “well” and “not very well” are omitted from the exhibit.

^cSource: Wave 1 parent interviews or teacher questionnaire.

^dSource: Wave 1 teacher questionnaire.

^eSource: Wave 1 direct assessment.

^fThe categories “high” and “medium” are omitted from the exhibit.

Standard errors and sample sizes are in Appendix B.

- Fewer than one-quarter of students with emotional disturbances or other health impairments are considered persistent by their parents, and although 20% to 25% ask for what they need “very often,” another one-quarter of each group are reported by their teachers “never” to self-advocate.
- Only students with autism or multiple disabilities are reported “never” to self-advocate in higher proportions (37% and 31%, respectively) than students with other health impairments or emotional disturbances.
- Students with speech, hearing, or visual impairments are reported to be most persistent (41%, 42%, and 38%, respectively, “very often” keep at tasks). When it comes to asking for what they need, students with speech, hearing, or orthopedic impairments are most likely to do so “very often” (39%, 35%, and 36%, respectively).
- More than half of the students in each disability category score low on the household responsibilities scale, although there are fewer students with learning disabilities or speech or hearing impairments at the low end of the scale than students in other categories. More than three-fourths of students with orthopedic impairments, autism, or multiple disabilities score low on the household responsibilities scale.
- Students with visual impairments or other health impairments are the most likely to report high levels of locus of control (34% and 31%, respectively), whereas students with mental retardation or traumatic brain injuries are the most likely to report low levels of control over their success in school (42% and 41%).
- Students with speech impairments are reported to perform consistently the highest across most dimensions of independence.

Factors Related to Locus of Control among Students with Disabilities

Because a strong internal locus of control—a belief that one’s own actions matter—is an important foundation for independence, it was chosen for more in-depth analysis. A multivariate analysis was performed to identify the independent relationships of a number of factors that may help explain variation in students’ locus of control in an educational setting. The factors are in three domains: individual characteristics, family characteristics, and school programs and experiences.

Individual Characteristics

The relationship of three kinds of individual characteristics—disability, functioning, and demographics—are considered as they relate to locus of control (Exhibit 6-7).

Exhibit 6-7
Differences in Locus of Control Associated with Individual Characteristics of Students with Disabilities

	Estimated Difference in Locus of Control Scale Score ^a	Comparison Categories
Disability characteristics		
Students classified with:		
Speech impairment		vs. learning disability ^b
Mental retardation		vs. learning disability
Emotional disturbance		vs. learning disability
Hearing impairment		vs. learning disability
Visual impairment	.2	vs. learning disability
Orthopedic impairment		vs. learning disability
Other health impairment		vs. learning disability
Autism		vs. learning disability
Traumatic brain injury		vs. learning disability
Multiple disabilities/deaf-blindness		vs. learning disability
Attention deficit/hyperactivity disorder (ADD/ADHD)		Yes vs. no
Age at identification		8 vs. 4 years
Number of problem domains		Three vs. one domain
Functioning		
Self-care skills for students with:		
Low cognitive skills		High vs. low (8 vs. 4)
Average cognitive skills	-.7***	High vs. low (8 vs. 4)
High cognitive skills	-.3	High vs. low (8 vs. 4)
Functional cognitive skills for students with:		
Low self-care skills	1.2***	High vs. low (15 vs. 7)
Average self-care skills		High vs. low (15 vs. 7)
High self-care skills	.3	High vs. low (15 vs. 7)
Social skills		High vs. low (27 vs. 17)
Persistence		High vs. low (3 vs. 1)
Demographics		
Age		12 vs. 9 years
Gender	.1	Male vs. female
African-American		vs. white
Hispanic		vs. white
Other or multiple race/ethnicity		vs. white
Primarily uses language other than English at home		Yes vs. no

^aStatistics in this exhibit are calculated from models that include all individual characteristics shown in this exhibit, as well as household characteristics (results shown in Exhibit 6-8) and school programs and experiences (results shown in Exhibit 6-9). All statistics in the exhibit are statistically significant at at least the $p < .05$ level; those with asterisks are significant at the $p < .001$ level.

^bMultivariate analyses require that for categorical variables, such as disability category, each category be compared with another specified category. Learning disability was chosen as the category against which to compare the relationships for other disabilities because it is the largest disability category and, therefore, most closely resembles the characteristics of students with disabilities as a whole. Similarly, white is used as the reference group for ethnicity because it is the largest.

^cADD/ADHD is included to determine its relationships as a primary or secondary disability to academic performance, independent of youth's primary disability category.

Exhibit reads: The locus of control scale score of students with visual impairments is .2 point higher than the scores of students with learning disabilities, other factors being equal. The scale score of boys is .1 point higher than the scores of girls, other differences held constant. Other analysts could choose different comparisons, which would result in a different estimate, but would have no effect on its statistical significance.

Disability characteristics. Disability characteristics include the primary disability category of the students, whether they have ADD/ADHD, the age at which they first were diagnosed with a disability or learning problem, and the number of domains in which the experience limitation.

- Controlling for other factors, the disability category and other disability-related characteristics generally are not related to the level of locus of control for elementary and middle school students with disabilities.
- Only students with visual impairments differ on the locus of control scale from students with learning disabilities, and the difference is modest. Relative to students with learning disabilities and with other factors held constant, having a visual impairment is associated with having a high locus of control in an educational setting with a score difference of .2, indicating that students with visual impairments perceive themselves to be in control of their educational experiences to a greater degree than students with learning disabilities.

Functioning. Characteristics associated with individual functioning include self-care, functional cognitive skills, social skills, and persistence.

- Self-care and functional cognitive skills are related to locus of control. However, there is an interaction between student self-care scores and functional cognitive scores as they relate to locus of control. The difference in locus of control between students with differing self-care scores depends in part on their cognitive functioning. The relationship between locus of control and self-care skill is negative for students with average to high functional cognitive skills. Among students with average to high functional cognitive skills, locus of control is high despite low self-care skills. Accenting the relationship of cognitive function to locus of control, the relationship between locus of control and students' scores on cognitive skills is strongly positive, even when self-care skills are low. High cognitive skills are associated with higher locus of control scores of 36 percentage points.

Demographic characteristics. Gender is the only demographic characteristic that is related to students' locus of control in an educational setting. Boys are more likely to score higher on the locus of control scale by about .1 points than girls, indicating boys are more likely than girls to see themselves in control of their learning experiences and activities and the grades they receive.

Household Characteristics

Various aspects of students' households were investigated to determine their relationship to locus of control. The household characteristics investigated included income, family involvement in the home and at school, and the families' expectations for students to eventually live away from home (Exhibit 6-8):

- Household income is modestly associated with students' locus of control. Controlling for other differences, students from higher income families are

more likely than those from lower income families to have slightly higher locus of control scores (3 percentage points).

Exhibit 6-8
Difference in Locus of Control Associated with Household Characteristics of Students with Disabilities

	Estimated Difference in Locus of Control Scale Score ^a	Comparison Categories
Household income	.1	\$55,000 to \$60,000 vs. \$20,000 to \$25,000
Family involvement at home		High vs. low (8 vs. 5)
Family involvement at school		High vs. low (6 vs. 1)
Expectations for independent living		Definitely will vs. probably won't (4 vs. 2)

^aStatistics in this exhibit are calculated from models that include all household characteristics shown in this exhibit, as well as individual characteristics (results shown in Exhibit 6-7) and school programs and experiences (results shown in Exhibit 6-9). All statistics in the exhibit are statistically significant at at least the p<.05 level; those with asterisks are significant at the p<.001 level.

Exhibit reads: The locus of control scale score of students from higher income homes is .1 point higher than the score of students in lower income homes, other differences held constant. Other analysts could choose different comparisons (e.g., \$30,000 to \$34,000 and \$40,000 to \$44,000), which would result in a different estimate, but would have no effect on its statistical significance.

School Programs and Experiences

SEELS analyses considered the relationship of the school programs and experiences of students with disabilities and their locus of control. The specific school factors believed to have potential for being related to locus of control are the percentage of time spent in general education, the number of modifications to tests, the number of presentation or communication aids, and the number of social adjustment supports students have. Other school experiences, such as the number of days students are absent from school, whether they have been held back a grade in the last 3 years, and how often they have changed schools were considered as well (Exhibit 6-9).

- Only two of the seven measures of school programs and experiences have strong associations with students' locus of control—modifications to tests and grade retention.

Exhibit 6-9
Differences in Measures of Locus of Control Associated with School Programs and Experiences of Students with Disabilities

	Estimated Difference in Locus of Control Scale Score ^a	Comparison Categories
School Programs		
Percentage of classes in general education		75% vs. 25%
Number of modifications to tests	-.1	Seven vs. one
Number of presentation/communication aids		Five vs. none
Number of social adjustment supports		Two vs. none
Other School Experiences		
Absenteeism		
Retention at grade level	-.1	Yes vs. no
School mobility		Three school changes vs. none, other than for grade promotions

^aStatistics in this exhibit are calculated from models that include all household characteristics shown in this exhibit, as well as individual characteristics (results shown in Exhibit 6-7) and household characteristics (results shown in Exhibit 6-8). All statistics in the exhibit are statistically significant at at least the $p < .05$ level; those with asterisks are significant at the $p < .001$ level.

Exhibit reads: The locus of control scale score of students who receive seven accommodations is .1 point lower than the score of students who receive one, other differences held constant. Other analysts could choose different comparisons (e.g., three and six accommodations), which would result in a different estimate, but would have no effect on its statistical significance.

- With other factors held constant, the number of modifications to tests is negatively associated with locus of control. That is, students who need and receive more modifications or accommodations in testing are more likely to score lower on locus of control by about .1 point.
- Students who have been retained at grade level tend to have lower locus of control scores, also by about .1 point, when other factors are held constant.

How Much is Explained?

The factors related to locus of control investigated in the multivariate analysis explain a total of 10% of the variation ($r^2 = .10$). The individual characteristics of students with disabilities explain almost all of the variation, with family characteristics and school programs and experiences each contributing a single percentage point to the total explained variation.

Summary

SEELS has investigated a variety of factors affecting the emerging independence of elementary and middle school students with disabilities, including skills that support and strengthen self-reliance, responsibilities that accompany an independent lifestyle, and activities associated with a growing sense of control.

Students are in the process of acquiring skills to support independence, including those involving self-care, cognitive processing of information, mobility, and persistence. About three-fourths of students with disabilities have high self-care skills, and about one-fourth have high functional cognitive skills. Only a small share of students with disabilities do poorly with regard to these skills.

The vast majority of students get around on their own in their local areas. In addition, the self-determination skills involving persistence and asking for what they need are demonstrated by more than half of students with disabilities. Among their peers with disabilities, students with speech, hearing, or visual impairments are most persistent, and students with speech, hearing, or orthopedic impairments have the highest self-advocacy ratings. Overall, students with speech impairments are reported to be performing consistently the highest across the dimensions of independence.

Assuming responsibilities of daily living is often an expectation of students as they mature. SEELS investigated the extent to which students with disabilities have become responsible for a variety of tasks in the home. About one-third of students with disabilities usually prepare their own breakfasts and lunches, and 40% straighten their rooms or living areas, demonstrating emerging independence in contributing to household responsibilities.

Although high proportions of students with emotional disturbances or other health impairments are competent in getting around the community, these students are among the lowest performers with regard to sticking with tasks to completion or advocating for themselves. The deficits in social judgment or impulsive behaviors that sometimes are associated with these disability categories may impair the students' ability to persist or self-advocate.

The relationship of some of these factors to locus of control for students with disabilities has been investigated. Although only 10% of the variation can be explained by the factors investigated, it is clear that the greatest effects on students' locus of control are their individual characteristics and capabilities. The specific nature of their cognitive functional skills is the most strongly related of these factors to the locus of control measure.