6. INSTRUCTION OF SECONDARY SCHOOL STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES

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Underlying the Individuals with Disabilities Education Act Amendments of 1997 (IDEA '97) is the principle that students should receive their education in the least restrictive environment. The law requires "That to the maximum extent appropriate children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are nondisabled" [20 U.S.C. 1412(1)(5)]. For many students with disabilities, the least restrictive environment is a general education classroom.

Including students with disabilities in general education classrooms has been shown to benefit both students with disabilities (Baker, Wang, & Walberg, 1994; Waldron, 1997) and general education students (Stainback & Stainback, 1996; Staub & Peck, 1994; Waldron, 1997). NLTS2 analyses demonstrate that the degree to which students with disabilities take courses in general education classrooms is related to both their academic performance and their social adjustment at school, independent of other differences between students. Taking more courses in general education classrooms is associated with having reading and math abilities that are closer to grade level (Blackorby et al., 2003) and a lower likelihood of being subject to disciplinary action at school (Marder, Wagner et al., 2003), independent of other differences between students. However, students with disabilities who take more courses in general education classes also tend to receive lower grades, other things being equal.

Nonetheless, the discussion surrounding the nature of the free appropriate public education assured students with disabilities has advanced beyond consideration of *where* students are educated to an emphasis on *how* they are educated. IDEA '97 intends not just that students with disabilities be included in general education settings, but that they have access to a challenging curriculum there. Access to the general education curriculum means more than simply being present in a general education classroom; it means that students' "educational programs are based on high expectations that acknowledge each student's potential and ultimate contribution to society…" and that "students with disabilities be provided with the supports necessary to allow them to benefit from instruction" (Nolet & McLaughlin, 2000, pp. 2, 9).

Despite this emphasis on assessing the implementation of the law against a standard that is defined by what goes on in classrooms, no information has been available nationally that portrays the classroom experiences of students with disabilities. NLTS2 helps fill that gap in the knowledge base. This chapter focuses on secondary school students with disabilities when they receive instruction in general education academic classes—their experiences in these classrooms and how they compare with those of their classmates—in terms of:

- Classroom instructional practices.
- Students' participation in classroom activities.
- Factors considered important in determining students' grades.
- Supports provided to general education teachers with students with disabilities in their classes.

- Supports and accommodations provided to students.
- Teachers' perceptions and expectations of students' performance.

General education academic class experiences are described on these dimensions for youth with disabilities as a group who are in such classes; as mentioned in Chapter 4, they are 69% of secondary school students with disabilities. Findings also are presented for those who differ in their primary disability category. As noted in Chapter 4, the proportion of students who take any general education academic classes ranges from 28% to 83% across disability categories. Thus, findings for students with disabilities as a whole represent a much larger portion of students in some categories than others.[1] Classroom experiences also are reported for students who take classes in different academic subject areas and who are at different grade levels, as well as for those who differ in their gender, household income, and race/ethnicity where such differences are significant.

Instructional Practices in General Education Academic Classes

For students with disabilities, a crucial question is, "To what extent are they accessing the general education curriculum in their general education academic classes?" This section addresses that important question by describing the classroom instructional experiences of students with disabilities in general education academic classes and comparing them with the experiences of their classmates.[2] Comparisons are made regarding:

- Curriculum
- Instructional groupings
- Instructional materials
- Instructional activities outside of class
- Discipline practices.

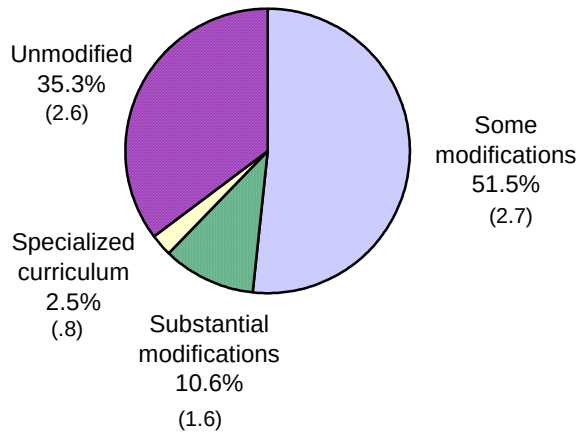
Access to the General Education Curriculum

General education academic teachers often feel they need to modify the curriculum of their courses to accommodate the individual learning needs of the students with disabilities in their classes. Teachers were asked to indicate the extent of such modifications made to the general education curriculum for students with disabilities in their classes. Overall, about one-third of secondary school students with disabilities receive the standard, general education grade-level curriculum used for other students in their academic classes (Exhibit 6-1). These students apparently have full access to the general education curriculum experienced by other students in

[1] Readers should be aware that the small number of students in some disability categories who take general education academic classes results in relatively large standard errors for those groups. In turn, this means that even relatively large differences between some groups may not attain statistical significance. Findings for students with deaf-blindness are not reported separately at all because very few take general education academic classes.

[2] As noted in Chapter 5, a typical general education academic class includes 19 general education students and 5 students who receive special education services. Thus, the comparisons made in this section should not be construed as between students with disabilities and nondisabled students. Rather, teachers reported on the classroom experiences of specific students with disabilities and compared them with those of the other students in class, including any other students with disabilities in the class.

Exhibit 6-1
EXTENT OF CURRICULUM MODIFICATION FOR STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES



Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

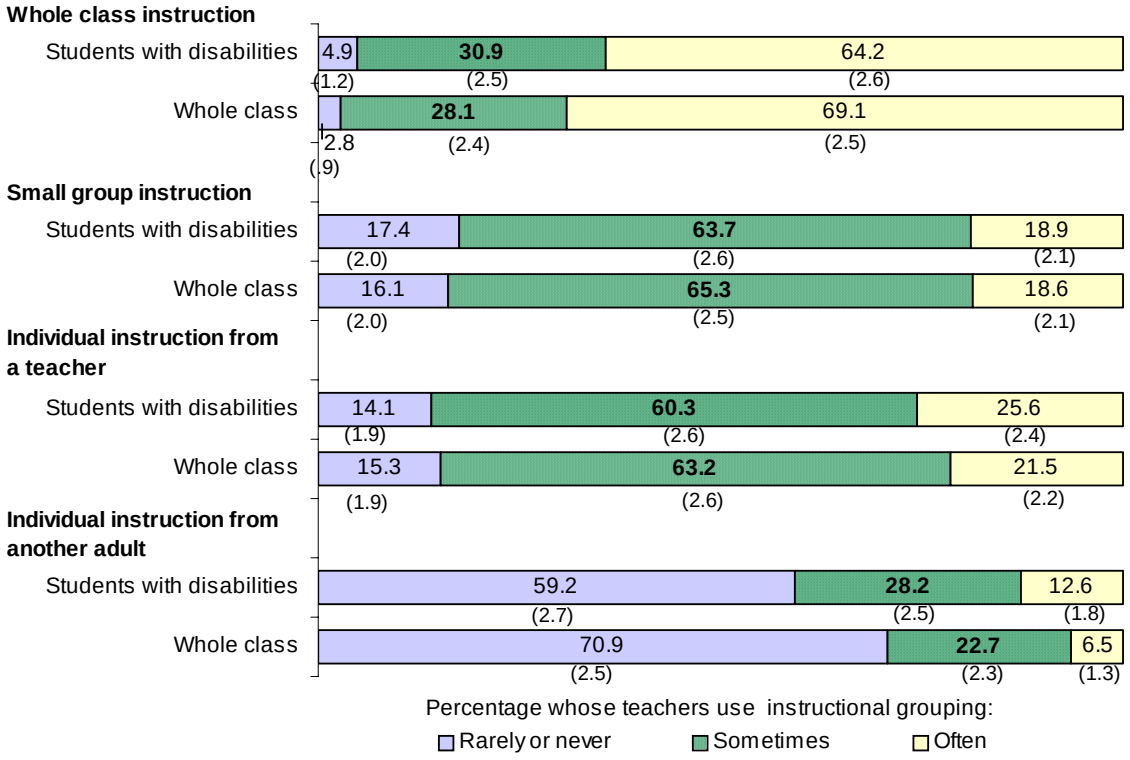
their classes. However, more than half of students with disabilities (52%) have teachers who report making some modifications to the general education curriculum. For another 11%, substantial modifications are made to the general education curriculum they receive, and 2% receive a specialized curriculum, such as a parallel or individualized curriculum.

Instructional Groupings

As noted in Chapter 5, the general education academic classes of students with disabilities have an average of 21 students per adult. Considerable research suggests that lower student-teacher ratios help teachers meet student needs by facilitating effective instruction, communication, and individualization (Achilles & Finn, 2000; Achilles, et al., 1998; Gersten & Dimino, 2001; Thurlow et al., 1989). Instructional strategies, such as using small-group or individual instruction, can be used to help reduce the student-teacher ratio for some classroom instruction. To assess the extent to which such instructional groupings are employed in general education academic classes, teachers were asked to report the frequency with which they used the following instructional groupings with the student with a disability about whom they were reporting and with their class as a whole: whole-class instruction, small-group instruction, individual instruction from the general education teacher, and individual instruction from an adult other than the teacher.

Students with disabilities for the most part experience the various instructional groupings with similar frequency as the class as a whole (Exhibit 6-2). For example, both groups experience whole-class instruction more frequently than other groupings; 64% of students with disabilities experience whole-class instruction often, and 69% are in classes in which students as a whole do as well. Nineteen percent of both groups often experience small-group instruction. Only in the amount of individual instruction received from an adult other than the teacher do students with disabilities differ from their class peers. They are more than twice as likely as the class as a whole to receive instruction often from an adult other than the general education teacher (e.g., a special education teacher or a personal aide; 13% vs. 6%, $p<.01$).

Exhibit 6-2
INSTRUCTIONAL GROUPINGS OF STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



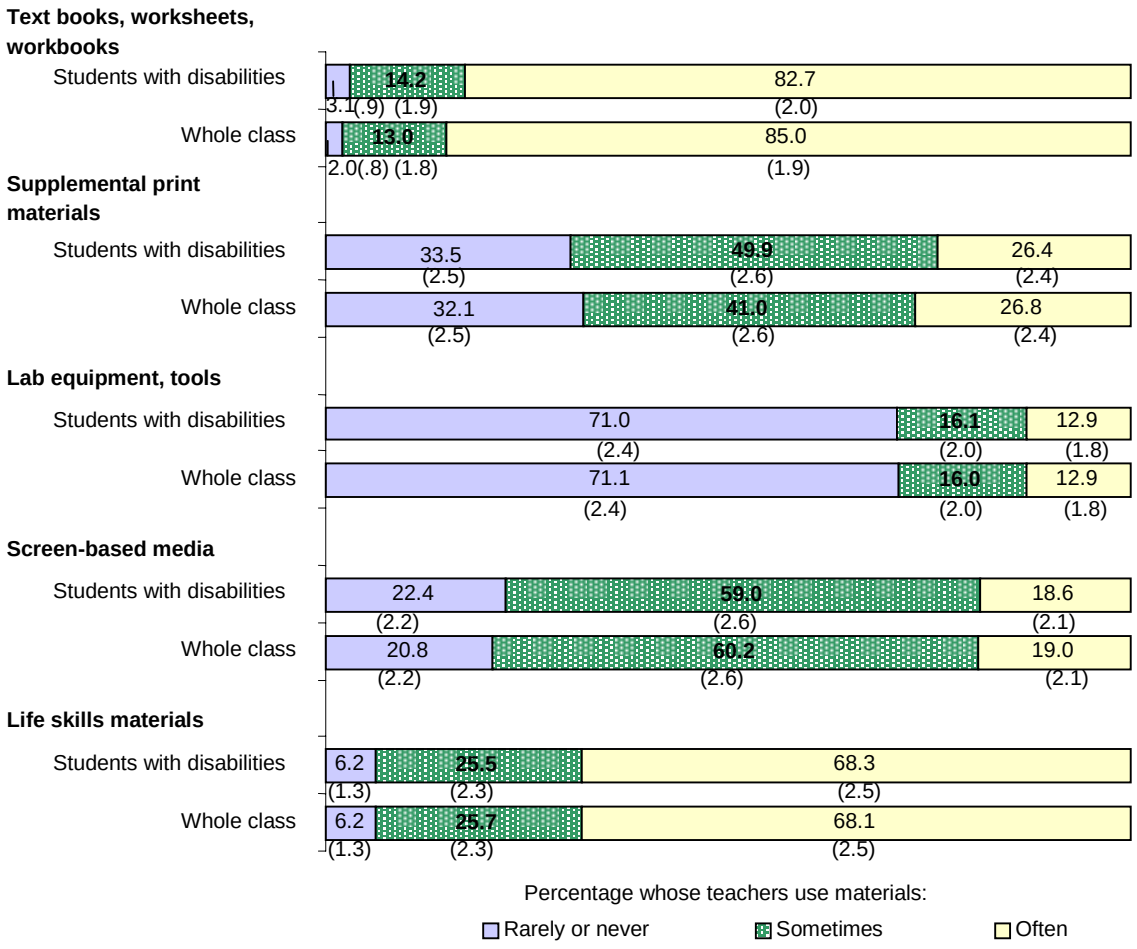
Source: NLTS2 Wave 1 general education teacher surveys.
Standard errors are in parentheses.

Instructional Materials

Teachers of general education academic classes were asked to report the frequency with which they use a range of materials in their instruction of students with disabilities and with the class as a whole. Not surprisingly, textbooks, worksheets, and workbooks are the most frequently used instructional materials (Exhibit 6-3); 83% of students with disabilities attend classes where these types of materials are reportedly used often. Students with disabilities and students in the class as a whole are similar in their frequency of each type of instructional material.

Computers can be an important educational resource that can support instruction in multiple ways, including for academic drills, word processing or spreadsheet activities, and accessing the Internet. Although, as reported in Chapter 3, 58% of students with disabilities attend schools that report having computers in all academic classes, and 98% have computers in at least some academic classes, many teachers of general education academic classes report that students never

Exhibit 6-3
INSTRUCTIONAL MATERIALS USED WITH STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



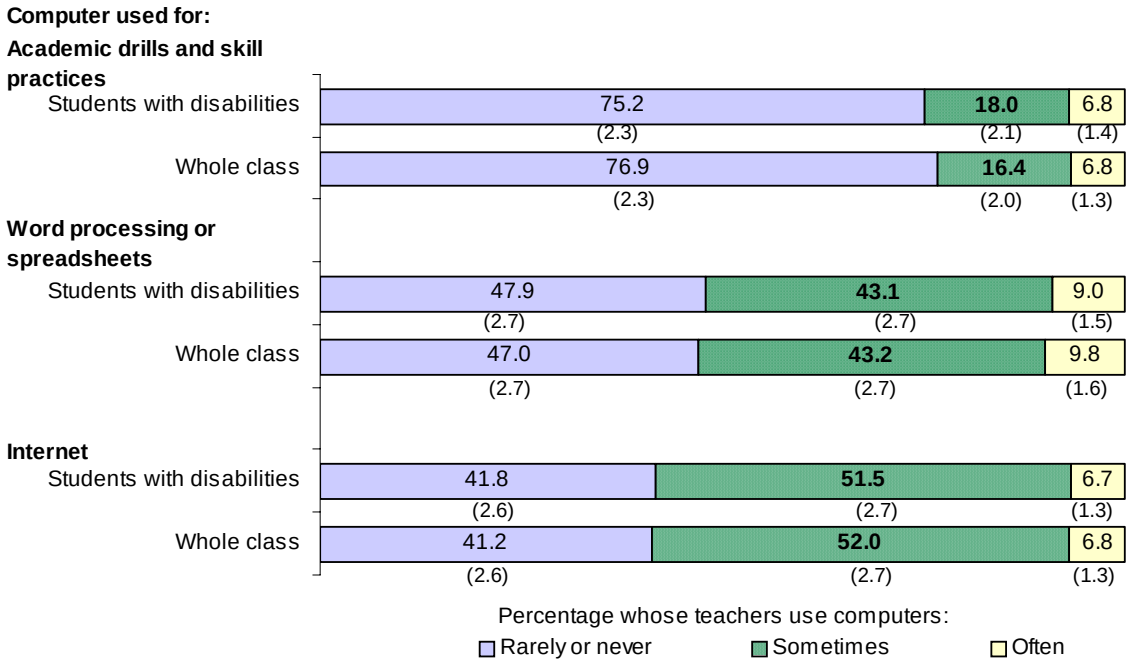
Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

or rarely use computers in their classes, with no difference in frequency of use by students with disabilities and the class as a whole. Fewer than 10% of students with disabilities use computers often in these classes for any purpose (Exhibit 6-4). Students are the least likely to use computers for academic drills, with three-quarters rarely or never using computers in this way; almost half rarely or never use classroom computers for word processing or accessing the Internet.

Instructional Activities outside the Classroom

Instruction does not occur only within the confines of a classroom; teachers can offer students opportunities to extend their learning through the use of libraries, computer labs, or other types of resources at the school, as well as through field trips off campus and through

Exhibit 6-4
COMPUTER USE BY STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



Source: NLTS2 Wave 1 general education teacher surveys.
Standard errors are in parentheses.

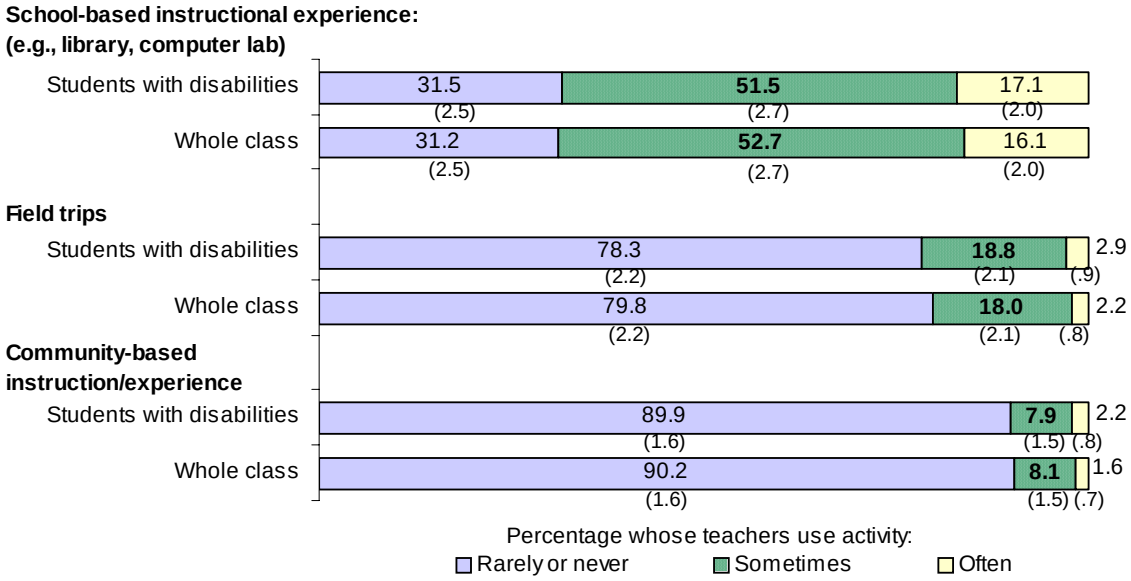
community-based instruction or experience, such as service-learning projects. However, these types of experiences occur infrequently as part of general education academic classes that include students with disabilities (Exhibit 6-5).

About one in six students with disabilities who attend general education academic classes often have school-based instructional experiences outside the classroom, and 3% or fewer often go on field trips or have community-based instructional experiences. In fact, any excursions outside of the school are rare for secondary school students with disabilities, with 90% never or rarely having community-based experiences and four out of five students never or rarely going on field trips. However, such experiences are no more common for other students; similar to many other aspects of the class, students with disabilities do not differ from their classroom peers in their participation in activities outside the classroom.

Discipline Practices

An important element in effective instruction is maintaining an orderly classroom environment that is conducive to learning. Doing so can involve disciplining students whose behavior is considered disruptive to an orderly environment. To ascertain teachers' disciplinary practices for students with disabilities, teachers were asked to indicate the extent to which the discipline procedures used when a student with disabilities becomes disorderly in class are similar to those applied to the class as a whole. The large majority of students with disabilities (84%) experience discipline practices that are similar to those used for students in general education academic classes as a whole.

Exhibit 6-5
INSTRUCTIONAL ACTIVITIES OUTSIDE THE CLASSROOM FOR STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Variations in Instructional Practices

The preceding findings depict the extent to which the instructional practices experienced by students with disabilities in general education academic classes are similar to or differ from those experienced by their classmates. However, in some respects, instructional practices differ for students in different kinds of classes and at different grade levels, as well as for students who differ in disability and demographic characteristics, as described below.

Subject Area Variations in Instructional Practices

Teachers vary their instructional practices with the subject matter they are teaching (Exhibit 6-6). What goes on in math classes particularly stands out in several ways from other kinds of classes. Students with disabilities are most likely to receive an unmodified general education curriculum in their math classes (43%) and least likely to do so in their science classes (27%, $p<.05$). Students also are more likely to receive whole-class instruction often in math classes than in other classes, particularly science classes (79% vs. 53%, $p<.001$) and less likely to receive small-group instruction (75% at least sometimes in math vs. 88% in science classes, $p<.05$).

Exhibit 6-6
SELECTED INSTRUCTIONAL PRACTICES IN GENERAL EDUCATION ACADEMIC CLASSES OF STUDENTS WITH DISABILITIES, BY SUBJECT AREA

	Language Arts	Mathe-matics	Science	Social Studies
Percentage of students with:				
General education curriculum without modification	37.7 (4.9)	42.6 (5.8)	27.0 (5.0)	33.1 (5.1)
Instructional groupings:				
Whole-class instruction				
Used often	57.6 (5.1)	79.2 (4.8)	52.6 (5.7)	64.8 (5.2)
Used sometimes	34.7 (4.9)	13.6 (4.1)	46.2 (5.7)	32.2 (5.2)
Small group instruction				
Used often	19.9 (4.1)	15.7 (4.3)	19.2 (4.5)	18.2 (4.2)
Used sometimes	65.4 (4.9)	59.2 (5.8)	69.0 (5.2)	65.1 (5.2)
Materials				
Computers for academic drills				
Used often	6.9 (2.6)	14.2 (4.1)	2.3 (1.7)	2.4 (1.7)
Used sometimes	14.7 (3.7)	17.1 (4.4)	23.3 (4.8)	17.4 (4.2)
Computers for word processing				
Used often	18.1 (4.0)	3.6 (2.2)	6.5 (2.8)	6.7 (2.7)
Used sometimes	60.3 (5.0)	18.6 (4.6)	46.9 (5.7)	45.6 (5.4)
Computers for Internet				
Used often	6.9 (2.6)	4.8 (2.5)	9.8 (3.3)	5.6 (2.5)
Used sometimes	64.8 (4.9)	20.6 (4.8)	63.0 (5.4)	55.7 (5.4)
Supplemental print materials				
Used often	23.2 (4.3)	11.2 (3.7)	15.7 (4.1)	53.2 (5.4)
Used sometimes	40.3 (5.0)	44.7 (5.8)	44.6 (5.6)	32.5 (5.7)
Lab equipment				
Used often	.2 (.5)	4.6 (2.5)	51.9 (5.6)	.8 (1.0)
Used sometimes	5.8 (2.4)	13.1 (4.0)	44.1 (5.6)	2.6 (1.8)
Life skills materials				
Used often	4.8 (2.2)	4.2 (2.4)	11.2 (3.6)	3.8 (2.1)
Used sometimes	17.4 (3.9)	36.1 (5.7)	29.8 (5.1)	21.8 (4.5)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only instructional practices that differ significantly across subject areas are included in the exhibit.

Standard errors are in parentheses.

Use of materials also differs by subject area. Students with disabilities in math classes are more likely to use computers often for academic drills (14% vs. 2% of students with disabilities in science or social studies classes, $p<.01$) and less likely to use them for word processing (22% do so at least sometimes vs. 52% to 78% of students in other kinds of classes, $p<.001$). Along with science classes, students with disabilities are most likely to use life skills materials in math classes; 40% or more use them at least sometimes in math and science classes, compared with 22% and 26% in language arts and social studies classes ($p<.05$). Although computers are not used frequently in any class for accessing the Internet, more than 60% of students in other classes do so at least sometimes, compared with one-fourth of students with disabilities in mathematics classes.

Not surprisingly, students in language arts classes often use computers for word processing more than students in other classes (18% vs. 4% to 7% of students in other classes, $p<.05$). Social studies teachers more frequently provide supplemental print materials and use screen-based media, such as TV and videos, in their classes, whereas, not surprisingly, science teachers most frequently supply lab equipment, machinery, or tools, with more than half of the science students using this type of equipment often.

Exhibit 6-7
SELECTED INSTRUCTIONAL PRACTICES IN GENERAL EDUCATION ACADEMIC CLASSES OF STUDENTS WITH DISABILITIES, BY GRADE LEVEL

	7th or 8th Grade	9th Grade	10th Grade	11th or 12th Grade
Percentage of students with:				
Instructional groupings:				
Small-group instruction				
Used often	18.5 (5.5)	18.4 (4.5)	14.8 (3.7)	21.7 (3.8)
Used sometimes	71.5 (6.4)	66.7 (5.5)	62.1 (5.1)	60.4 (4.5)
Individual instruction from an adult other than the teacher				
Used often	10.5 (4.4)	19.6 (4.6)	9.1 (3.0)	11.2 (2.9)
Used sometimes	41.2 (7.1)	29.5 (5.3)	30.8 (4.9)	21.5 (3.8)
Use of materials				
Textbooks, worksheets, workbooks, etc.				
Used often	67.9 (6.8)	86.7 (3.9)	82.4 (4.0)	85.4 (3.3)
Used sometimes	26.4 (6.4)	11.1 (3.6)	14.3 (3.7)	11.7 (3.0)
Computers used for academic drills				
Used often	6.5 (3.6)	7.7 (3.0)	6.0 (2.5)	6.0 (2.2)
Used sometimes	33.9 (6.9)	16.7 (4.2)	13.2 (3.6)	16.8 (3.5)
Experiences outside the classroom				
Field trips				
Used often	8.5 (4.0)	1.5 (1.4)	2.2 (1.5)	2.7 (1.5)
Used sometimes	40.9 (7.1)	12.2 (3.8)	12.0 (3.4)	18.4 (3.6)
School-based instructional activities				
Used often	29.8 (6.5)	15.3 (4.2)	13.2 (3.5)	15.9 (3.4)
Used sometimes	50.4 (7.1)	48.0 (5.8)	52.4 (5.2)	53.2 (4.6)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only instructional practices that differ significantly across grade levels are included in the exhibit.

Standard errors are in parentheses.

Grade-Level Variations in Instructional Practices

Grade-level variations in instructional practices generally involve those between middle and high school students[3] (Exhibit 6-7). For example, middle school students with disabilities are more likely to receive small-group instruction at least sometimes (90% vs. 77% of those in the 10th grade, $p<.05$) and are more likely to receive individual instruction from an adult other than the teacher (52% of middle school students receive such instruction at least sometimes, compared with one-third or fewer of juniors and seniors, $p<.05$).

Students' use of material differs by grade level, as well. Middle school students are less likely to use textbooks often (68% vs. 87% of 9th graders, $p<.05$) and more likely to use computers for drills and skills practice (40% use computers this way at least sometimes, compared with 19% of 10th graders, $p<.05$). In addition, middle school students are more likely to go on field trips, with about half doing so at least sometimes, compared with one-fifth or fewer of high school students ($p<.001$), and are more likely to have school-based instructional activities outside of class (30% do so often vs. 13% of 10th graders, $p<.05$).

The instructional practices experienced by students with disabilities and their classmates are similar, regardless of their grade level.

[3] For convenience, grades 7 and 8 are referred to as middle school grade levels, and grades 9 and above are referred to as high school grade levels.

Disability Variations in Instructional Practices

The nature of a student's disability can play a role in the choices teachers make regarding the instructional practices they use in general education academic classrooms.

Curriculum. Students with speech or sensory impairments are the most likely to have access to an unmodified general education curriculum (from 42% to 50%; Exhibit 6-8), whereas those with multiple disabilities, traumatic brain injuries, or mental retardation are the least likely to have such access (from 14% to 29%, $p<.05$ comparing students with mental retardation and those with hearing impairments). Students with mental retardation, autism, or multiple disabilities are the most likely to have a substantially modified or a specialized curriculum (20% to 33%). In contrast, 10% or fewer of students with speech, hearing, visual, or orthopedic impairments do so ($p<.05$ comparing students with autism and those with hearing impairments).

Exhibit 6-8
EXTENT OF CURRICULUM MODIFICATION FOR STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, 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 using general education curriculum:											
Without modification	34.9	50.2	29.0	37.5	46.2	41.7	39.8	31.2	33.4	26.5	14.1
	(3.5)	(3.7)	(6.8)	(5.8)	(4.8)	(6.3)	(4.1)	(3.4)	(6.0)	(7.1)	(6.5)
With some modification	51.7	43.0	51.5	52.6	49.1	50.5	52.7	54.5	47.1	58.6	53.1
	(3.6)	(3.7)	(7.5)	(5.9)	(4.8)	(6.4)	(4.1)	(3.6)	(6.3)	(7.9)	(9.3)
With substantial modification	10.8	5.8	14.9	7.7	3.6	4.1	6.4	13.2	11.5	11.0	22.4
	(2.3)	(1.7)	(5.3)	(3.2)	(1.8)	(2.5)	(2.0)	(2.5)	(4.1)	(5.0)	(7.8)
Percentage with specialized curriculum	2.5	.9	4.6	2.2	1.1	3.7	1.1	1.1	8.0	3.9	10.4
	(1.1)	(.7)	(3.1)	(1.7)	(1.0)	(2.4)	(.9)	(.8)	(3.4)	(3.1)	(5.7)

Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Instructional groupings. The types of groupings in which students receive their education differ somewhat by disability category (Exhibit 6-9). Teachers are least likely to use whole-class instruction often for students with mental retardation and most likely to do so for students with visual impairments (53% vs. 73% $p<.05$). In contrast, they are least likely to use small-group instruction often for students with autism (11%) and most likely to use it with students with mental retardation or traumatic brain injuries (30% and 28%, $p<.05$). Students differ most in their receipt of individual instruction from an adult other than the general education teacher. For example, about one-third of those with speech or visual impairments receive this type of instruction at least sometimes, whereas 62% of those with multiple disabilities do so ($p<.01$). More than half of students with orthopedic impairments or traumatic brain injuries also receive this kind of instruction at least sometimes.

Exhibit 6-9
SELECTED INSTRUCTIONAL PRACTICES IN GENERAL EDUCATION ACADEMIC CLASSES OF STUDENTS WITH DISABILITIES, 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 of students with:											
Instructional grouping											
Whole-class instruction											
Used often	64.6	65.7	53.2	67.6	69.7	73.4	61.7	65.6	63.3	65.9	59.9
	(3.5)	(3.6)	(7.5)	(5.5)	(4.5)	(5.7)	(4.0)	(3.5)	(6.2)	(7.7)	(9.2)
Used sometimes	30.9	31.1	35.1	26.9	29.1	23.2	33.4	31.6	27.1	32.3	34.4
	(3.4)	(3.5)	(7.2)	(5.2)	(4.4)	(5.5)	(3.9)	(3.4)	(5.7)	(7.6)	(8.9)
Small-group instruction											
Used often	16.4	22.5	29.7	21.2	23.4	21.9	24.4	25.9	11.3	27.7	26.7
	(2.7)	(3.1)	(6.9)	(4.8)	(4.2)	(5.3)	(3.6)	(3.2)	(4.1)	(7.2)	(8.2)
Used sometimes	66.5	59.4	53.4	56.7	59.9	64.1	62.0	59.5	62.8	59.6	59.7
	(3.5)	(3.7)	(7.5)	(5.8)	(4.8)	(6.2)	(4.0)	(3.6)	(6.2)	(7.9)	(9.1)
Individual instruction from an adult other than the teacher											
Used often	11.5	7.9	19.6	13.8	18.4	10.2	21.0	12.5	18.4	23.0	33.0
	(2.4)	(2.0)	(6.0)	(4.1)	(3.8)	(3.9)	(3.4)	(2.4)	(5.0)	(6.8)	(8.7)
Used sometimes	28.9	27.0	27.1	25.5	25.6	20.8	29.5	27.2	24.9	33.9	28.9
	(3.4)	(3.3)	(6.8)	(5.1)	(4.3)	(5.2)	(3.8)	(3.3)	(5.6)	(7.7)	(3.4)
Use of materials											
Lab equipment											
Used often	12.7	9.3	12.7	14.0	19.7	8.7	7.8	16.8	14.4	19.7	16.7
	(2.4)	(2.2)	(5.0)	(4.2)	(3.9)	(3.6)	(2.2)	(2.7)	(4.5)	(6.4)	(7.0)
Used sometimes	15.9	18.9	17.2	16.3	10.5	11.2	14.6	16.5	11.6	6.5	19.1
	(2.7)	(3.0)	(5.7)	(4.4)	(3.0)	(4.1)	(3.0)	(2.7)	(4.1)	(3.9)	(7.4)
Instructional activitites outside the classroom											
Field trips											
Used often	2.4	2.2	12.2	1.5	.9	.8	1.8	1.2	4.7	.4	10.4
	(1.1)	(1.1)	(5.1)	(1.5)	(.9)	(1.2)	(1.1)	(.8)	(2.7)	(1.0)	(5.7)
Used sometimes	18.4	19.6	21.6	16.6	21.0	16.4	21.5	20.2	30.0	29.3	23.2
	(2.9)	(3.0)	(6.4)	(4.5)	(4.0)	(4.8)	(3.4)	(2.9)	(5.8)	(7.4)	(7.9)
Community-based instruction											
Used often	1.5	.8	11.2	1.2	.8	1.5	4.0	2.0	4.2	3.2	2.9
	(.9)	(.7)	(4.8)	(1.3)	(.9)	(1.6)	(1.6)	(1.0)	(2.5)	(2.8)	(3.1)
Used sometimes	7.0	11.4	10.1	7.2	10.9	10.9	12.6	12.3	5.0	19.3	10.0
	(1.9)	(2.4)	(4.6)	(3.1)	(3.1)	(4.1)	(2.8)	(2.4)	(2.8)	(6.4)	(5.6)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only instructional practices that differ significantly across disability categories are included in the exhibit.

Standard errors are in parentheses.

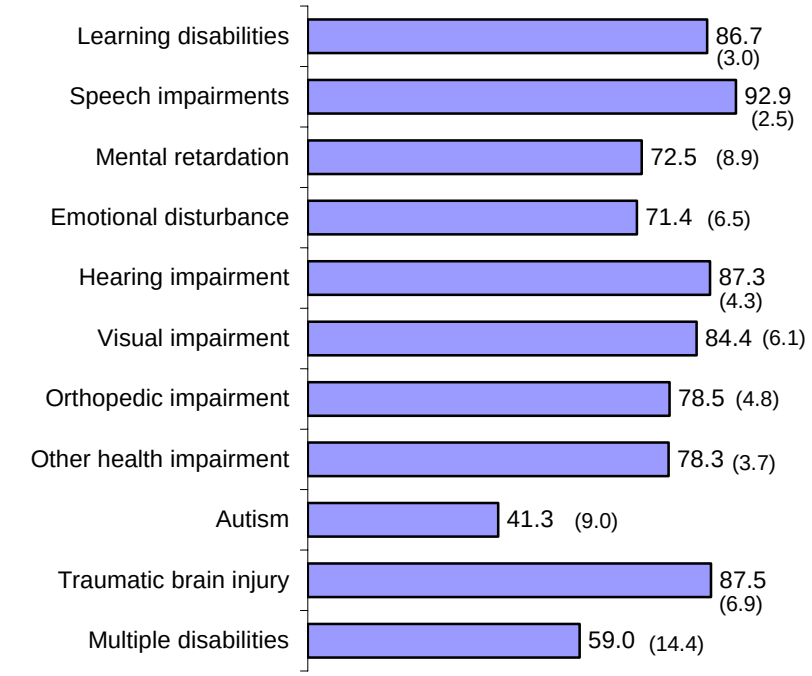
Students with disabilities' experiences with most types of instructional groupings do not differ from those of the class as a whole, regardless of disability category. An exception is that those with mental retardation are less likely than the class as a whole to receive whole-class instruction often (12% vs. 1%, $p<.05$). In addition, students in several disability categories are more likely than their class as a whole to receive individual instruction often from an adult other than the general education teacher. For example 18% of students with hearing impairments do so but only 4% are in classes in which the class as a whole does as well ($p<.001$). Differences also are noted for students with orthopedic impairments (21% vs. 2%, $p<.01$), autism (18% vs.

3%, p<.01), other health impairments (12% vs. 6%, p<.05), and multiple disabilities (33% vs. 11%, p<.05).

Materials. Students' use of print materials or computers does not differ by disability category. An exception is the use of lab equipment or tools. Almost 20% of those with hearing impairments often use lab equipment, machinery, or tools, compared with 9% of those with visual or speech impairments (p<.05 and p<.01) and 8% of those with orthopedic impairments (p<.01). Students with disabilities' use of materials is similar to the use by students in the class as a whole across all disability categories.

Experiences outside the classroom. Participation in school-based instructional experiences, such as going to the library or computer lab, does not differ by disability category. However, students with mental retardation are the most likely to participate in other types of activities outside the classroom, such as field trips and community-based instruction. More than 12% of students with mental retardation often go on field trips, and 11% have frequent community-based instructional experiences, whereas those with sensory impairments or traumatic brain injuries are the least likely to go on field trips often (1%, p<.05), and those with hearing or speech impairments are the least likely to experience frequent community-based instruction (p<.05). , Regardless of disability category, the experiences outside the classroom of students with disabilities do not differ from the experiences of students in their classes as a whole.

Exhibit 6-10
STUDENTS WITH DISABILITIES BEING SUBJECT TO THE SAME DISCIPLINE PRACTICE AS STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES, BY DISABILITY CATEGORY



Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Discipline. The extent to which teachers use the same disciplinary practices for students with disabilities as for students in the class as a whole ranges from 93% of those with speech impairments to 41% of those with autism (p<.001, Exhibit 6-10). If students need to be disciplined, those with autism or multiple disabilities are the least likely to receive the same type of discipline as the class as a whole (41% and 59%, respectively). Those with mental retardation, emotional disturbances, or orthopedic or other health impairments also are less likely than students with other types of disabilities to be disciplined in the same way as their classmates (71% to 78%, p<.05 to p<.001 compared with students with speech impairments, for example).

Demographic Variations in Instructional Practices

Some kinds of instructional practices used with students with disabilities in general education academic classes differ for students with different household incomes and racial/ethnic group membership. Across household income categories and racial/ethnic groups, students are about equally likely to receive an unmodified curriculum and to experience various instructional groupings, and the materials they use in the classroom and the activities in which they participate outside of class also differ little. An exception is that students whose families earn more than $50,000 annually are more likely than students from households with incomes of $25,000 or less to use classroom computers for word processing tasks often (14% vs. 6%, $p<.05$). Also, African-American students with disabilities are less likely than their white or Hispanic peers to use textbooks at least sometimes (89% vs. 98% and 99%, $p<.05$ and $p<.01$). The type of discipline students with disabilities receive does not differ by family socioeconomic status or racial/ethnic group membership.

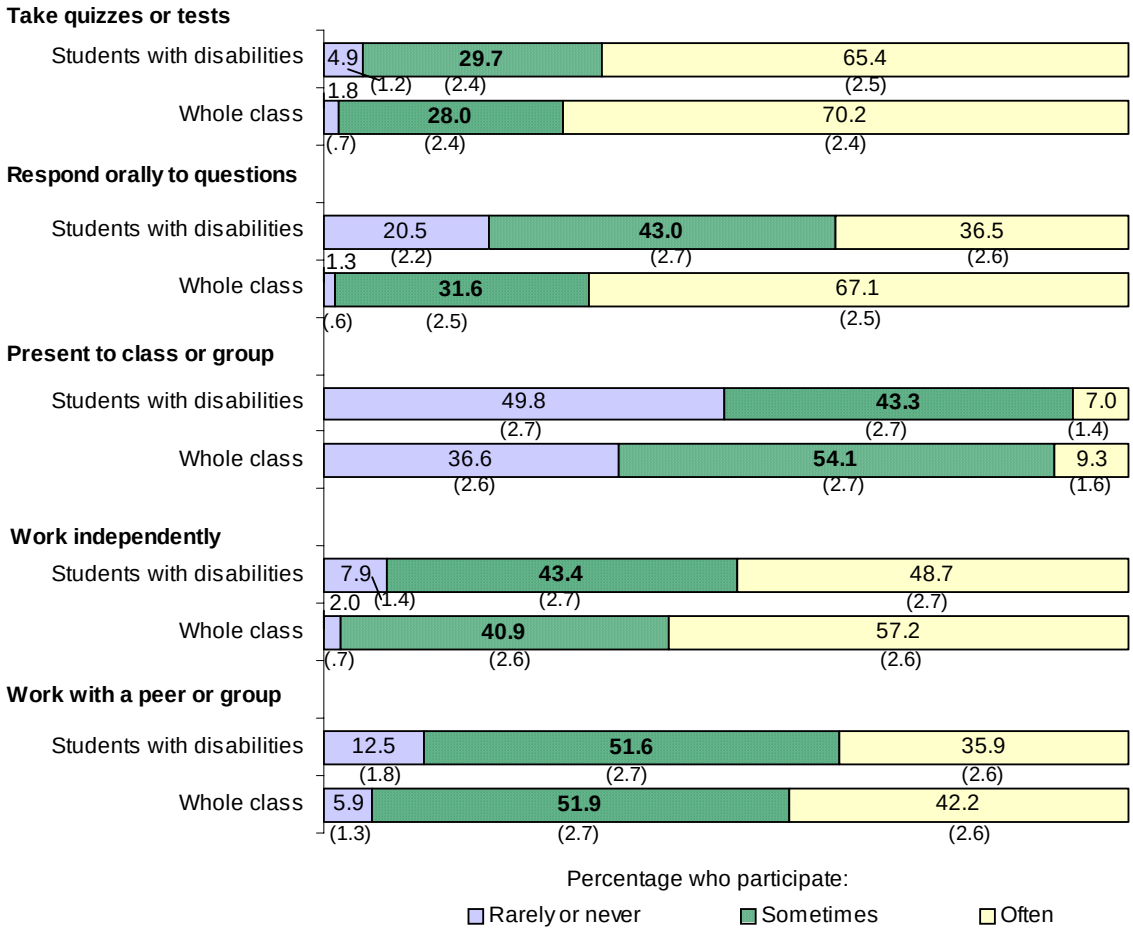
Students' Participation in Classroom Activities

Thus far, the comparison of the classroom experiences of students with disabilities with those of students in general education academic classes as a whole has focused primarily on teacher-directed aspects of the class, such as types of groupings or materials used. Yet, students should not be considered passive recipients of education but instead are active participants in the learning process. This section focuses on students' participation in their general education academic classes, as evidenced by the frequency with which they are reported by teachers to take tests or quizzes, respond orally to questions, present to the class or a group, work independently, and work with a peer partner or group.

The classroom participation of students with disabilities in these activities differs markedly from the level of participation of students in their class as a whole (Exhibit 6-12). Except for taking tests and quizzes, students with disabilities consistently participate less actively than students in their class as a whole. For example, 36% of students with disabilities are reported by teachers to respond orally to questions often, compared with 67% whose whole class does so ($p<.001$). Students with disabilities also are less likely to work independently (49% vs. 57% for the class as a whole, $p<.05$). Half of students with disabilities rarely or never present to the class, compared with about one-third (37%) whose whole class does so ($p<.001$), and 12% rarely or never work with a peer partner or group, compared with 6% for the whole class ($p<.001$).

The classroom participation of students with disabilities does not vary across grade levels. However, differences in participation in classes that focus on different subjects and for students who differ in their primary disability and demographic characteristics are noted.

Exhibit 6-11
PARTICIPATION OF STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



Source: NLTS2 Wave 1 general education teacher surveys.
Standard errors are in parentheses.

Subject Area Variations in Students' Classroom Participation

Although the frequency with which students with disabilities and students in their general education academic classes as a whole take tests or quizzes does not differ by the subject area of their classes, several other aspects of students' in-class participation do (Exhibit 6-12). As with the instructional practices discussed previously, math classes differ from other classes in several ways. Students with disabilities are less likely to work with a peer partner or group in math class than other kinds of classes (77% do so at least sometimes vs. 90% to 94% of their classmates, $p<.05$ and $p<.01$), and they are less likely to present to the class or a group in math class than in language arts class (48% vs. 78%, $p<.001$). There are no differences across types of class in students' responding orally to questions or working independently at least sometimes.

The subject area differences noted above generally are experienced equally by both students with disabilities and the students in general education academic classes as a whole. Students

Exhibit 6-12
PARTICIPATION OF STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE, BY SUBJECT AREA

	Language Arts	Mathe-matics	Science	Social Studies
Percentage who at least sometimes:				
Respond orally to questions				
Student with disability	83.8 (3.8)	77.6 (4.9)	78.4 (4.6)	74.2 (4.8)
Whole class	98.8 (1.1)	99.7 (.6)	98.9 (1.2)	97.2 (1.8)
Present to class				
Student with disability	77.5 (4.3)	47.6 (5.9)	62.5 (5.4)	61.1 (5.3)
Whole class	63.4 (4.9)	63.6 (5.6)	49.8 (5.7)	47.8 (5.5)
Work independently				
Student with disability	93.8 (2.5)	91.2 (3.0)	88.4 (3.6)	91.8 (3.0)
Whole class	98.6 (1.2)	99.4 (.9)	95.7 (2.3)	97.7 (1.6)
Work with a peer or group				
Student with disability	89.6 (3.1)	77.1 (5.0)	93.7 (2.7)	89.7 (3.3)
Whole class	95.9 (2.0)	88.5 (3.8)	99.3 (.9)	93.4 (2.7)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only aspects of classroom participation that differ significantly across subject area are included in the exhibit.

Standard errors are in parentheses.

with disabilities in all types of classes respond orally to questions significantly less than their classroom peers. However, only in math class is there a significant difference between students with disabilities and their classmates in the likelihood that they work independently at least sometimes (91% vs. 99%, $p<.01$). The gap between students with disabilities and the others in their class in working at least sometimes with a peer or group reaches statistical significance only for science classes (94% vs. 99%, $p<.05$). Students with disabilities are actually significantly more likely to present in front of their language arts class at least sometimes than are their classmates (78% vs. 63%, $p<.05$).

Disability Variations in Students' Classroom Participation

Students with mental retardation are among the least likely to participate in their general education classes (Exhibit 6-13). For example, two-thirds reportedly respond orally to questions at least sometimes, and about one-third at least sometimes present in front of the class, compared with 88% and 60% of those with visual impairments ($p<.01$). Similarly, 77% of those with mental retardation work independently at least sometimes, compared with 94% of those with sensory impairments ($p<.05$). Only in working with a peer partner or group do those in other disability categories participate as infrequently as students with mental retardation; specifically, students with emotional disturbances or autism also are much less likely than students in most other categories to work with a peer or group (about 80% do so at least sometimes, $p<.05$ compared with students with sensory impairments).

With the exception of taking quizzes and tests, students in all disability categories are less likely to participate in class than are their classroom peers.

Exhibit 6-13
PARTICIPATION OF STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE, 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 at least sometimes:											
Take quizzes or tests											
Student with disability	96.2	98.5	85.0	93.1	96.7	99.4	98.5	95.9	96.3	95.3	84.9
	(1.4)	(.9)	(5.4)	(3.0)	(1.7)	(1.0)	(1.0)	(1.4)	(2.4)	(3.4)	(6.8)
Whole class	98.0	99.1	99.1	98.2	98.9	99.6	98.7	98.1	98.7	99.2	95.5
	(1.0)	(.7)	(.5)	(1.6)	(1.0)	(.8)	(.9)	(1.0)	(1.4)	(1.4)	(3.8)
Respond orally to questions											
Student with disability	79.5	79.2	66.6	86.0	80.4	87.9	85.0	82.6	82.1	78.3	79.3
	(3.0)	(3.0)	(7.1)	(4.1)	(3.9)	(4.2)	(2.9)	(2.8)	(5.0)	(6.6)	(7.5)
Whole class	98.6	98.6	100.0	99.1	96.3	99.0	98.4	98.9	98.6	96.8	99.5
	(.9)	(.9)		(1.1)	(1.8)	(1.3)	(1.0)	(.8)	(1.5)	(2.8)	(1.3)
Present to class or small group											
Student with disability	50.7	60.3	35.6	48.9	55.8	60.3	54.6	55.7	48.7	51.0	54.5
	(3.7)	(3.6)	(7.2)	(6.0)	(4.8)	(6.3)	(4.1)	(3.6)	(6.4)	(8.0)	(9.3)
Whole class	61.7	71.2	67.4	65.6	65.9	70.1	66.7	66.4	67.8	69.2	63.7
	(3.6)	(3.4)	(7.1)	(5.6)	(4.6)	(5.9)	(3.9)	(3.4)	(5.9)	(7.4)	(8.9)
Work independently											
Student with disability	94.2	94.0	77.5	88.2	93.7	93.8	93.1	90.5	90.2	91.3	87.1
	(1.7)	(1.8)	(6.3)	(3.9)	(2.4)	(3.1)	(2.1)	(2.1)	(3.8)	(4.5)	(6.2)
Whole class	97.6	99.8	99.9	98.2	99.1	99.2	98.8	99.0	100.0	99.2	100.0
	(1.1)	(.3)	(.5)	(1.6)	(.9)	(1.1)	(.9)	(.7)		(1.4)	
Work with a peer or group											
Student with disability	88.9	89.9	81.5	79.5	92.3	91.7	89.9	88.8	80.8	85.8	88.4
	(2.3)	(2.2)	(5.9)	(4.8)	(2.6)	(3.5)	(2.5)	(2.3)	(5.0)	(5.6)	(5.9)
Whole class	94.0	95.4	95.5	92.0	96.5	97.7	96.8	94.9	94.8	97.3	93.0
	(1.7)	(1.5)	(3.1)	(3.2)	(1.8)	(1.9)	(1.5)	(1.6)	(2.8)	(2.6)	(4.7)

Source: NLTS2 Wave 1 general education teacher survey.
Note: Only aspects of classroom participation that differ significantly across disability categories are included in the exhibit.
Standard errors are in parentheses.

Demographic Variations in Students' Classroom Participation

The classroom participation of students with disabilities does not differ by family socioeconomic status or racial/ethnic group membership. The one exception is that students with disabilities from families with lower incomes differ from the class as a whole in that they are less likely to work independently. Fewer than 90% of students with disabilities from families with incomes of $25,000 or less work independently at least sometimes, compared with 99% whose whole class does so ($p<.01$). Students with disabilities from families with middle or higher income levels do not differ from their classmates in their level of working independently.

Factors Considered Important in Determining Students' Grades

The preceding discussion has described the experiences of students with disabilities in general education academic classes and the extent to which they differ from the experiences of the other students in those classes as a whole. Evident differences in classroom experiences, particularly regarding students' classroom participation, raise the question of how teachers evaluate students in light of such differences. Do teachers give the same weight to the same aspects of students' performance when they determine grades or other performance indicators for students with disabilities and for the students in the class as a whole? To address this question, general education academic teachers who had an NLTS2 student with disabilities in their class were asked to rate the importance they place on 10 factors in determining that student's grades, factors that include work products (e.g., homework, tests), behaviors (e.g., attendance, participation), and performance against particular "yardsticks" (i.e., relative to the rest of the class or to a set standard). Teachers ranked each factor as "very important," "somewhat important," or "not important" for the specific student and for the class as a whole.

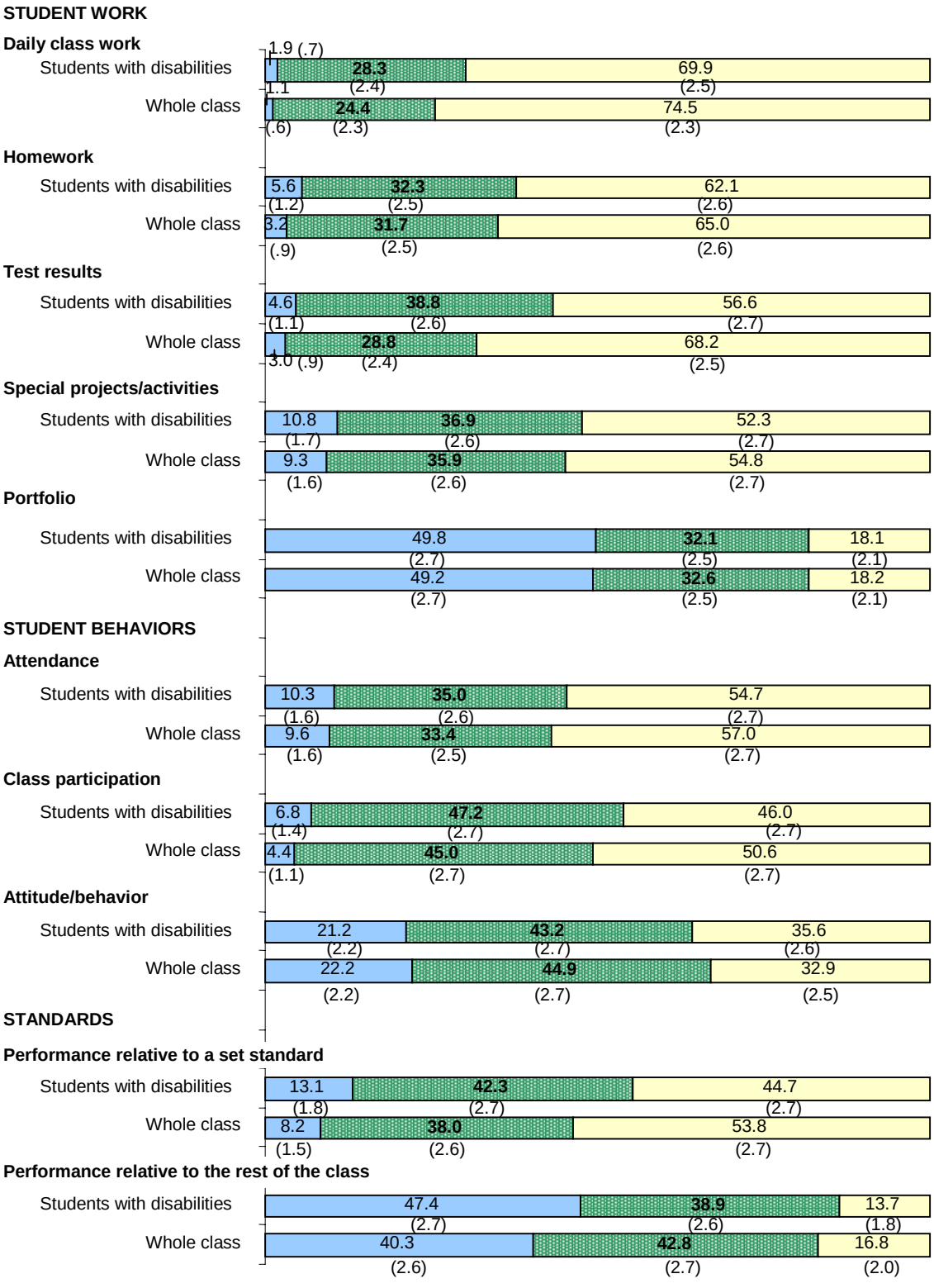
Importance Placed on Factors

General education academic teachers are most likely to consider daily class work as very important in determining grades of students with disabilities (Exhibit 6-14); approximately 70% of students with disabilities in general education classes have teachers who consider daily class work very important in grading them. Homework, test results, and special projects or activities are cited as very important by teachers of between 52% and 62% of students with disabilities. In addition to factors reflecting schoolwork, students' behaviors also are important to many teachers. More than half of students with disabilities (55%) have teachers who indicate that attendance is very important to the student's grades, 46% have teachers who indicate that class participation is very important, and 36% have teachers who indicate that attitude or behavior is a very important factor in grading. Teachers are more likely to place importance on students' performance relative to a set standard (45%) than on their performance relative to the rest of the class (14%, $p<.001$).

In general, teachers assign about the same importance to each factor for grading students with disabilities and students in the class as a whole. Only two factors differ significantly: test results and the performance of students relative to a set standard. In both cases, teachers are less likely to indicate that the factor is very important for grading students with disabilities than for grading the class as a whole. Specifically, 57% of students with disabilities have teachers who consider test results to be a very important factor in grading them, compared with 68% whose teachers place similar importance on test results in grading other students in the class ($p<.001$). Similarly, 45% of students with disabilities have teachers who consider these students' performance relative to a set standard to be a very important factor in grading them, compared with 54% whose teachers consider that factor of similar importance in grading the class as a whole ($p<.05$).

Although grading criteria do not vary by grade level or for students with different demographic characteristics, subject area and disability differences are noted.

Exhibit 6-14
IMPORTANCE OF FACTORS IN GRADING STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE



Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Exhibit 6-15
SELECTED FACTORS CONSIDERED VERY IMPORTANT IN DETERMINING GRADES FOR STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE, BY SUBJECT AREA

	Language Arts	Mathe-matics	Science	Social Studies
Percentage whose teachers report factor to be "very important":				
Test results				
Student with disability	51.0 (5.1)	78.1 (4.9)	45.4 (5.6)	48.7 (5.4)
Whole class	62.6 (4.9)	87.3 (3.9)	58.4 (5.5)	63.6 (5.2)
Homework				
Student with disability	63.1 (4.9)	75.3 (5.1)	48.1 (5.6)	60.2 (5.3)
Whole class	65.0 (4.9)	77.2 (5.0)	53.3 (5.6)	62.6 (5.2)
Special projects or activities				
Student with disability	64.9 (4.9)	32.7 (5.6)	56.8 (5.6)	50.6 (5.4)
Whole class	67.2 (4.8)	32.7 (5.5)	63.2 (5.4)	52.7 (5.4)
Portfolio				
Student with disability	30.6 (4.8)	11.4 (3.7)	14.7 (4.0)	12.1 (3.6)
Whole class	30.7 (4.7)	11.0 (3.7)	14.4 (4.0)	13.1 (3.7)
Performance relative to a set standard				
Student with disability	47.5 (5.1)	56.7 (5.9)	31.4 (5.2)	39.9 (5.3)
Whole class	55.7 (5.1)	64.5 (5.7)	45.8 (5.6)	45.0 (5.4)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only factors that differ significantly across subject areas are included in the exhibit.

Standard errors are in parentheses.

Subject Area Variations in Grading Factors

General education academic teachers in different subject areas differ in the importance they place on some factors when grading students with disabilities. Mathematics teachers stand out as the most likely to place emphasis on test results, homework, and student performance relative to a fixed standard (Exhibit 6-15). For example, more than three-fourths of students with disabilities in general education mathematics classes have teachers who rate test results as very important to their grades, compared with between 45% and 51% in classes in the other three subject areas ($p<.001$). Similarly 75% of students in mathematics classes have teachers who rate homework as very important, compared with 60% of students in social studies classes ($p<.05$) and 48% of students in science classes ($p<.001$). In contrast, mathematics teachers are least likely to rate special projects as very important in grading students with disabilities. Whereas between half and two-thirds of students with disabilities in language arts, science, or social studies classes have teachers who rate special projects or activities as very important in grading them, only about one-third of their counterparts in mathematics classes have teachers who place such high importance on special projects or activities ($p<.05$ to $p<.001$).

In general, teachers of all subject areas have the same grading criteria for students with disabilities and the class as a whole. An exception to this pattern is that social studies teachers are less likely to place importance on test results in grading students with disabilities than in grading students in the class as a whole. Whereas about half of students with disabilities in general education social studies classes have teachers who indicate that test results are very important in grading them, 64% have teachers who indicate that test results are very important in grading other students in those classes ($p<.05$).

Disability Variations in Grading Factors

General education academic teachers also place differing importance on several factors when grading students with different types of disabilities (Exhibit 6-16). For example, between 52% and 64% of most groups of students have teachers who indicate that test results are very important in grading them; however, several groups of students fall outside this range. At one end of the continuum are students with hearing impairments, 72% of whom have teachers who place high importance on test results. Students with hearing impairments also are the most likely to have teachers who indicate that special projects or activities and performance relative to a set standard are very important to their grades (66% and 54% of students, respectively). At the other end of the continuum, 37% of students with mental retardation have teachers who indicate that test scores are very important to their grades, and 36% have teachers who indicate that their performance relative to a set standard is very important ($p<.05$ compared with students with hearing impairments).

Exhibit 6-16
SELECTED FACTORS CONSIDERED VERY IMPORTANT DETERMINING GRADES OF STUDENTS WITH DISABILITIES AND STUDENTS IN GENERAL EDUCATION ACADEMIC CLASSES AS A WHOLE, 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 whose teachers report factor to be "very important"											
Test results											
Student with disability	57.1 (3.7)	63.8 (3.6)	36.9 (7.3)	60.6 (5.8)	71.6 (4.4)	67.4 (6.1)	59.8 (4.1)	59.8 (3.5)	57.7 (6.3)	51.9 (7.9)	41.6 (9.1)
Whole class	68.3 (3.4)	72.1 (3.3)	60.3 (7.4)	71.4 (5.4)	73.9 (4.2)	73.8 (5.6)	69.4 (3.8)	66.8 (3.4)	69.0 (5.9)	60.4 (7.8)	49.6 (9.2)
Special projects or activities											
Student with disability	51.0 (3.7)	56.3 (3.7)	51.4 (7.6)	55.8 (5.9)	66.0 (4.6)	63.6 (6.2)	54.9 (4.1)	56.3 (3.6)	52.2 (6.4)	57.5 (7.9)	51.6 (9.4)
Whole class	52.7 (3.7)	60.2 (3.6)	58.9 (7.4)	57.7 (5.9)	66.2 (4.6)	70.6 (5.9)	58.2 (4.1)	61.0 (3.5)	60.9 (6.3)	59.9 (7.8)	58.1 (9.2)
Performance relative to the rest of class											
Student with disability	45.1 (3.7)	45.8 (3.7)	36.1 (7.3)	47.0 (5.9)	53.7 (4.9)	47.9 (6.5)	52.0 (4.1)	42.1 (3.6)	46.0 (6.4)	37.0 (7.8)	49.2 (9.3)
Whole class	53.6 (3.7)	55.4 (3.7)	57.5 (7.5)	51.7 (5.8)	60.1 (4.8)	53.1 (6.4)	59.1 (4.0)	50.7 (3.6)	57.8 (6.3)	43.9 (8.0)	53.9 (9.2)

Source: NLTS2 Wave 1 general education teacher survey.
Note: Only factors that differ significantly across disability categories are included in the exhibit.
Standard errors are in parentheses.

Although earlier findings showed that, overall, teachers place less importance on test results and performance relative to a set standard in grading students with disabilities than students in the class as a whole, these differences are statistically significant only for students with mental retardation. About 60% of these students have teachers who indicate that these factors are very important in grading the whole class, but approximately 37% have teachers who indicate that these factors are very important in grading students with mental retardation ($p<.05$).

Supports and Information Provided to Teachers

Preceding sections of this chapter discussed the instructional practices and grading criteria used in the general education classes of students with disabilities and the fact that these differ relatively little for students with disabilities and their classmates. But even when teachers significantly modify instruction or grading practices, having students with differing needs in a classroom can be challenging for teachers. Indeed, teachers are more likely to succeed in more fully including students with disabilities in their classes if they have a variety of supports (Eraclides, 2001; Harris, Graham, & Deshler, 1998; Maheady, 1997; McLeskey & Waldron, 2002).

Exhibit 6-17
SUPPORTS AND INFORMATION PROVIDED TO GENERAL EDUCATION ACADEMIC TEACHERS OF STUDENTS WITH DISABILITIES

	Percentage	Standard Error
Students whose teachers report receiving:		
Any type of support	94.6	1.2
Information about student needs or abilities	61.3	2.7
Consultation services by special education or other staff	50.6	2.8
Smaller student load or class size	13.6	1.9
Teacher aides, instructional assistants, or aides for individual students	13.4	1.9
Inservice training on needs of students with disabilities	10.9	1.7
Special materials or equipment to use with students with disabilities	4.8	1.2
Other support	1.9	.8

Source: NLTS2 Wave 1 general education teacher survey.

Despite the acknowledged importance of teacher supports in providing students with disabilities access to the general education curriculum, 16% of students with disabilities have general education academic classroom teachers who indicate that they do not need any type of support to teach students with disabilities in their classes effectively. However, almost all students (95%) have teachers who receive some type of support for teaching students with disabilities (Exhibit 6-17). The most common types of support received are information about students' needs or abilities (61% of students with disabilities have teachers who report receiving it) and consultation services by special education or other staff (51%). Fewer than 15% of students have teachers whose support includes smaller class sizes, aides or assistants, or inservice training on the needs of students with disabilities; only 5% have teachers who receive special materials or equipment to use with students with disabilities.

There are no differences in teacher supports or information across the various subject areas or grade levels. However, several differences are noted for students who differ in their primary disability category and selected demographic characteristics.

Disability Variations in Teacher Supports and Information

The likelihood of some kinds of supports and information being provided to general education academic teachers varies across disability categories (Exhibit 6-18). For example, between 87% and 99% of students across the disability categories have general education academic teachers who receive some type of support ($p<.05$). For most categories, the most common types of support are information about students' needs or abilities and consultation services. Least common for teachers of most groups of students are special materials or equipment to use with students with disabilities.

Exhibit 6-18
SUPPORTS AND INFORMATION PROVIDED TO GENERAL EDUCATION ACADEMIC TEACHERS, BY DISABILITY CATEGORY

	Learning Dis-ability	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	Trau-matic Brain Injury	Multiple Disabili-ties
Percentage whose teachers report receiving:											
Any type of support	96.0 (1.4)	90.5 (2.2)	87.2 (5.2)	91.7 (3.3)	91.5 (2.7)	90.6 (3.8)	95.3 (1.8)	95.3 (1.5)	96.7 (2.3)	91.4 (4.6)	99.3 (1.5)
Information about student's needs/abilities	62.3 (3.6)	41.5 (3.8)	59.8 (7.4)	60.6 (5.9)	66.5 (4.8)	68.2 (6.3)	61.2 (4.2)	65.6 (3.5)	77.6 (5.3)	68.8 (7.7)	59.4 (9.2)
Consultation services by special education or other staff	50.2 (3.8)	30.0 (3.6)	65.4 (7.2)	54.5 (6.0)	49.1 (5.1)	42.8 (6.7)	43.4 (4.3)	51.1 (3.7)	61.3 (6.2)	50.0 (8.3)	45.1 (9.3)
Smaller student load or class size	14.2 (2.6)	9.1 (2.2)	20.0 (6.0)	7.5 (3.2)	8.9 (2.9)	4.2 (2.7)	6.8 (2.2)	14.9 (2.6)	10.4 (3.9)	23.3 (7.0)	9.8 (5.5)
Teacher aides, instructional assistants, or aides for individual students	11.3 (2.4)	10.3 (2.4)	23.2 (6.4)	16.7 (4.5)	27.7 (4.5)	17.2 (5.1)	30.3 (4.0)	14.7 (2.6)	29.1 (5.8)	21.3 (6.8)	43.9 (9.3)
Inservice training on needs of students with disabilities	11.1 (2.4)	7.8 (2.1)	14.3 (5.3)	6.9 (3.1)	15.1 (3.6)	6.4 (3.3)	7.2 (2.2)	11.7 (2.4)	15.0 (4.6)	19.0 (6.5)	16.8 (7.0)
Special materials or equipment to use with students with disabilities	4.6 (1.6)	2.9 (1.3)	7.8 (4.0)	2.2 (1.8)	12.2 (3.3)	28.5 (6.1)	13.3 (2.9)	2.3 (1.1)	3.6 (2.4)	4.8 (3.5)	18.9 (7.2)

Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Despite the relative consistency of the rankings, teachers' likelihood of receiving a particular type of support varies considerably with the type of disability of their students. For example, between 59% and 69% of students with most types of disabilities have teachers who report receiving information about their students' needs or abilities. However, 42% of students with speech impairments and 78% of students with autism have teachers who report receiving such information ($p<.05$). Consultation services by special education or other staff are most commonly received by teachers of students with autism (61% of students have teachers who receive them) or mental retardation (65%). Teacher aides or instructional assistants for individual students are most common for teachers of students with multiple disabilities, 44% of whom have teachers who have aides or assistants. These students also are among the most likely to have teachers who receive special materials or equipment to use with their students (19%). However, the students whose teachers are especially likely to receive this type of support are students with visual impairments; almost 30% have teachers who receive special materials or equipment. Teachers of students with mental retardation or traumatic brain injuries are the most likely to have smaller student loads or class sizes (20% and 23%, respectively).

Demographic Variations in Teacher Supports and Information

There are few differences in the likelihood of teachers' receiving supports or information by students' demographic characteristics. However, white students are more likely than Hispanic students to be in classes with teachers who indicate they have smaller student loads or class sizes

because there are students with disabilities in their classes. Sixteen percent of white students, compared with 2% of Hispanic students, have teachers who indicate that they receive this type of support ($p<.05$). The percentage of African-American students whose teachers indicate they have smaller student loads or class sizes falls between those of white students and Hispanic students (9%).

Exhibit 6-19
ACCOMMODATIONS AND MODIFICATIONS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES

	Percentage	Standard Error
Student receives:		
Some type of accommodation or support	93.4	1.3
Additional time to complete assignments	65.8	2.1
Slower-paced instruction	24.1	2.6
Shorter or different assignments	19.7	2.1
More time in taking tests	75.0	2.3
Tests read to student	27.8	2.4
Modified tests	25.7	2.3
Alternative tests or assessments	16.3	2.0
Modified grading standards	30.2	2.3
Modifications to physical aspects of the classroom	5.6	1.2

Source: NLTS2 Wave 1 general education teacher survey.

[a] This includes receipt of any of the accommodations and other learning supports reported in Exhibits 6-19 through 6-21. Students may receive more than one kind of accommodation, support, or learning aid.

Accommodations, Supports, and Technology Aids Provided to Students with Disabilities

Not only is it important for teachers to have a variety of supports to help them give students with disabilities maximum access to the general education curriculum, many students also need a variety of accommodations and supports. As mentioned in Chapter 3, virtually all students with disabilities attend schools that report having a policy of providing students with disabilities with accommodations, supports, and/or learning aids to enhance their school performance. In fact, more than 90% of students with disabilities in general education academic classes receive some type of accommodation, support, or other learning aid (Exhibit 6-19).

Types of Accommodations, Supports, and Technology Aids Provided to Students with Disabilities

Teachers report that approximately two-thirds of students with disabilities are given additional time to complete assignments, although other types of modifications to instruction and assignments are much less common. One-fourth of students with disabilities receive slower-paced instruction, and one-fifth are given shorter or different assignments than the rest of the class.

Additional time also is the most common modification to testing; teachers report giving more time on tests to three-fourths of students with disabilities. Approximately one-fourth of students have tests read to them or are given modified tests, and 16% are given alternative tests or assessments. Almost one-third of students with disabilities (30%) have teachers who modify grading criteria for students with disabilities. Physical adaptations are made for few students (6%).

Exhibit 6-20
LEARNING SUPPORTS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES

	Percentage	Standard Error
Student receives:		
Monitoring of progress by special education teacher	60.3	2.6
More frequent feedback	35.2	2.5
Learning strategies/study skills assistance	23.0	2.3
A teacher's aide, instructional assistant, or other personal aide	19.1	2.1
A peer tutor	17.8	2.0
Tutoring by an adult	11.3	1.7
A reader or interpreter	6.9	1.4
A behavior management program	7.7	1.4
Self-advocacy training	3.1	.9

Source: NLTS2 Wave 1 general education teacher survey.

Many students with disabilities who are in general education classes also receive other types of supports or assistance to enhance their class participation and performance (Exhibit 6-20). Instructional support is most often provided through monitoring of students' progress by special education teachers; 60% of students with disabilities receive this support. Approximately one in five receive help with learning strategies or study skills, and a similar proportion receive help from teacher aides, instructional assistants, or personal aides. Slightly fewer receive assistance from peer tutors, and 11% receive tutoring from an adult. Fewer than 10% receive support from readers or interpreters, participate in behavior management programs, or receive self-advocacy training.

Exhibit 6-21
TECHNOLOGY AIDS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES

	Percentage	Standard Error
Student uses:		
A calculator for activities not allowed other students	12.3	1.8
Books on tape	7.7	1.4
A computer for activities not allowed other students	5.9	1.3
Large-print/Braille books or large-print computer	1.1	.6
Computer software designed for students with disabilities	1.3	.6
Computer hardware adapted for special needs	.8	.5
Communication aids	.4	.3

Source: NLTS2 Wave 1 general education teacher survey.

NLTS2 asked teachers whether students with disabilities in their general education academic classes use a variety of technology aids. For aids, such as computers or calculators, teachers were asked whether the student with disabilities used them when other students were not permitted to use them. The only one of these aids used by more than 10% of students with disabilities is a calculator (12%; Exhibit 6-21). Books on tape are used by approximately 8% of students with disabilities, and computers by approximately 6% for activities in which other students are not allowed to use them. Other types of learning aids are used by fewer than 2% of students with disabilities in general education academic classes.

Variations in Accommodations, Supports, and Technology Aids Provided to Students with Disabilities

Students with disabilities who take general education academic classes in different subject areas and at different grade levels differ in the likelihood that they receive some kinds of accommodations, support, and technology aids, as do students who differ in their primary disability category and demographic characteristics.

Subject Area Variations in Accommodations, Supports, and Learning Aids Provided

The likelihood that students with disabilities receive several accommodations, supports, and technology aids differs across class subject areas (Exhibit 6-22), with students in mathematics classes generally being least likely and students in social sciences classes most likely to receive specific types of accommodations. For example, grading standards are modified for 20% of students with disabilities in general education mathematics classes but for 41% in social studies classes ($p<.05$). The percentages of students with disabilities who are given modified tests or alternative tests or assessments follow similar patterns, with 17% and 7%, respectively, receiving those accommo-dations in mathematics classes and 34% and 26% receiving them in social studies classes ($p<.01$). In contrast, students with disabilities are most likely to receive slower-paced instruction in their general education language arts classes (32%) and least likely to receive it in their general education science classes (17%, $p<.05$).

Exhibit 6-22
SELECTED ACCOMMODATIONS, SUPPORTS, AND TECHNOLOGY AIDS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, BY SUBJECT AREA

	Language Arts	Mathe-matics	Science	Social Studies/ Humanities
Percentage receiving:				
Slower-paced instruction	32.4 (4.8)	20.1 (4.7)	17.4 (4.2)	24.3 (4.7)
Modified tests	23.5 (4.3)	16.7 (4.4)	27.1 (5.0)	33.5 (5.1)
Alternative tests or assessments	15.1 (4.0)	7.1 (3.1)	16.0 (3.7)	25.5 (4.8)
Modified grading standards	29.5 (4.7)	19.5 (4.7)	35.2 (5.3)	40.8 (5.4)
Tutoring by an adult	13.4 (3.5)	12.2 (3.9)	4.6 (2.3)	10.0 (3.3)
Percentage using:				
A calculator for activities not allowed other students	5.4 (2.3)	25.2 (5.1)	12.6 (3.7)	7.9 (2.9)
Books on tape	20.6 (4.1)	2.7 (1.9)	3.3 (2.0)	3.1 (1.9)
A computer for activities not allowed other students	10.4 (3.1)	1.3 (1.3)	5.2 (2.5)	6.3 (2.6)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only accommodations, modifications, or supports that differ significantly across subject areas are included in the exhibit.

Standard errors are in parentheses.

The only type of educational support that differs across the various subject areas is tutoring by an adult. Students with disabilities in general education science classes are least likely to receive tutoring by an adult (5%), whereas students with disabilities in language arts classes are most likely to receive it (13%, $p<.05$).

Given their particular appropriateness for specific subject areas, it is not surprising that the use of various technology aids differs across the subject areas. For example, books on tape are fairly common only in language arts classes; 21% of students with disabilities in these classes use them. In contrast, use of calculators by students with disabilities when other students are not allowed to use them is the most common in mathematics classes; one-fourth use them there, compared with 13% or fewer students in other classes ($p<.05$). Although many students with disabilities are allowed to use calculators in mathematics classes, almost no students (1%) are allowed to use computers as a learning aid there when other students are not allowed to use them. Only in language arts classes do more than a few students with disabilities (10%) use computers

as a learning aid when other students in the class do not use them ($p<.01$ compared with students in math classes).

Grade-Level Variations in Accommodations, Supports, and Learning Aids Provided

The likelihood that students with disabilities receive technology aids in general education academic classes does not vary across grade levels. However, there is a steady decline at each successive grade level in the percentage of students who receive some kinds of accommodations and instructional supports (Exhibit 6-23). For example, the percentages of students with disabilities in general education academic classes who have slower-paced instruction or have tests read to them decline from approximately 40% in the middle school grades to approximately 20% in the 11th and 12th grades ($p<.05$), and the percentages of students with teacher aides, instructional assistants, or personal aides or with peer tutors decline from approximately 30% to approximately 12% across those grade levels ($p<.05$).

Exhibit 6-23
SELECTED ACCOMMODATIONS AND SUPPORTS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, BY GRADE LEVEL

	7th or 8th Grade	9th Grade	10th Grade	11th or 12th Grade
Percentage receiving:				
Slower-paced instruction	39.4 (7.0)	25.8 (5.0)	22.8 (4.4)	18.4 (3.6)
Tests read to student	40.7 (7.0)	29.7 (5.2)	27.7 (4.6)	22.1 (3.8)
A teacher aide, instructional assistant, or other personal aide	32.2 (6.7)	24.9 (4.9)	19.2 (4.1)	11.2 (2.9)
A peer tutor	29.9 (6.5)	22.0 (4.7)	14.8 (3.7)	12.5 (3.0)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only accommodations, modifications, or supports that differ significantly across grade levels are included in the exhibit.

Standard errors are in parentheses.

Disability Variations in Accommodations, Supports, and Learning Aids Provided

At least 92% of students in most disability categories receive some type of accommodation, support, or learning aid (Exhibit 6-24); the exception is students with speech impairments, 75% of whom receive some type of support. This lower likelihood for students with speech impairments may relate to the fact that 22% of them no longer have an IEP for special education services or a 504 plan for accommodations for a disability, as reported in Chapter 4.

Many types of accommodations and supports are most likely to be provided to students with mental retardation, traumatic brain injuries, or multiple disabilities, and are least likely to be provided to students with speech, hearing, or visual impairments. For example, grading standards are modified for 16% of students with hearing impairments and 19% of students with speech or visual impairments, but they are modified for 42% of students with multiple disabilities and 54% of students with mental retardation ($p<.01$ and $p<.001$). Similarly, from 45% to 55% of students with speech, visual, or hearing impairments are given additional time to complete assignments, compared with about three-fourths of students with traumatic brain injuries, mental retardation, or multiple disabilities who are given this accommodation ($p<.001$). And whereas 7% and 10% of students with hearing or speech impairments, respectively, are given alternative tests or assessments, about one-fourth of students with traumatic brain injuries or multiple disabilities and 31% of students with mental retardation are given alternative tests or assessments.

Exhibit 6-24
ACCOMMODATIONS AND MODIFICATIONS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, 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
	(1.7)	(3.2)	(1.8)	(3.1)	(2.6)	(3.0)	(2.1)	(1.6)	(3.3)	(2.5)	(1.4)
Percentage receiving:											
Any accommodation or support[a]	94.0	75.3	98.5	92.9	92.5	94.4	93.2	94.6	92.6	97.5	99.4
Additional time to complete assignments	67.4 (3.4)	46.8 (3.7)	77.0 (6.2)	57.3 (5.9)	45.1 (4.8)	54.6 (6.4)	65.8 (4.0)	65.4 (3.4)	66.9 (6.0)	74.0 (7.1)	77.2 (7.8)
Slower-paced instruction	24.9 (3.2)	16.4 (2.8)	35.5 (7.0)	15.0 (4.3)	16.0 (3.6)	13.4 (4.4)	20.9 (3.4)	24.8 (3.1)	18.1 (4.9)	29.2 (7.4)	41.6 (9.1)
Shorter or different assignments	18.7 (2.8)	13.4 (2.5)	42.2 (7.3)	11.7 (3.9)	8.0 (2.6)	14.0 (4.5)	23.7 (3.5)	23.7 (3.1)	29.1 (5.8)	23.1 (6.8)	42.3 (9.1)
More time in taking tests	76.3 (3.1)	59.6 (3.7)	77.6 (6.1)	72.0 (5.4)	61.9 (4.7)	59.8 (6.3)	75.9 (3.6)	75.1 (3.1)	74.7 (5.5)	88.9 (5.1)	89.0 (5.8)
Tests read to student	26.9 (3.2)	20.8 (3.0)	51.1 (7.3)	19.3 (4.7)	20.1 (3.9)	34.2 (6.1)	26.9 (3.7)	28.6 (3.3)	27.4 (5.6)	36.2 (7.8)	53.5 (9.2)
Modified tests	24.8 (3.2)	22.2 (3.1)	41.6 (7.2)	19.6 (4.8)	15.5 (3.5)	27.4 (5.7)	27.3 (3.7)	29.7 (3.3)	33.7 (6.0)	40.8 (8.0)	32.2 (8.6)
Alternative tests or assessments	16.0 (2.7)	9.7 (2.2)	31.0 (6.8)	11.1 (3.8)	7.2 (2.5)	16.7 (4.8)	17.3 (3.2)	16.2 (2.7)	23.0 (5.3)	24.1 (6.9)	25.3 (8.0)
Modified grading standards	30.1 (3.3)	18.6 (2.9)	54.5 (7.3)	20.8 (4.9)	16.1 (3.6)	19.1 (5.1)	26.5 (3.7)	30.5 (3.3)	36.6 (6.1)	27.1 (7.2)	42.2 (9.1)
Physical adaptations to the classroom	3.8 (1.4)	5.0 (1.6)	1.3 (1.7)	10.2 (3.6)	33.0 (4.6)	33.9 (6.1)	41.0 (4.1)	9.7 (1.2)	18.3 (4.9)	11.4 (5.1)	19.6 (7.3)

Source: NLTS2 Wave 1 general education teacher survey.

[a] This includes students who receive any of the accommodations, supports, or technology aids in Exhibits 6-24 through 6-26.

Standard errors are in parentheses.

One exception to this pattern concerns physical adaptations, which are most often made for students with orthopedic impairments (41%), yet they also are made for approximately 33% of students with hearing or visual impairments, almost 20% of students with autism or multiple disabilities, and approximately 10% of students with emotional disturbances, other health impairments, or traumatic brain injuries. Students with visual impairments (34%), mental retardation (51%), or multiple disabilities (54%) are the most likely to have tests read to them.

In addition to accommodations and modifications, the provision of other kinds of learning supports also varies considerably for students with different types of disabilities (Exhibit 6-25). Again, students with multiple disabilities are among the most likely and students with speech impairments the least likely to receive most types of additional supports. For example, 78% of students with multiple disabilities in general education academic classes have their progress monitored by special education teachers and half have aides or instructional assistants in their classrooms, compared with 38% and 13% of students with speech impairments, respectively ($p<.001$).

Exhibit 6-25
LEARNING SUPPORTS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, 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 receiving:											
Monitoring of progress by special education teacher	62.7 (3.5)	38.4 (3.6)	69.6 (6.8)	48.9 (6.0)	54.3 (4.8)	45.3 (6.4)	56.3 (4.1)	58.4 (3.6)	61.8 (6.2)	64.3 (7.8)	77.6 (7.7)
More frequent feedback	36.5 (3.5)	22.7 (3.1)	35.3 (7.0)	34.1 (5.7)	25.4 (4.2)	22.6 (5.4)	23.3 (3.5)	36.3 (3.5)	39.5 (6.2)	30.1 (7.4)	39.6 (9.0)
Learning strategies/study skills assistance	23.4 (3.1)	17.7 (2.9)	27.8 (6.6)	20.9 (4.9)	18.2 (3.7)	8.6 (3.6)	20.5 (3.4)	20.4 (2.9)	27.7 (5.7)	27.6 (7.2)	37.4 (8.9)
A teacher aide, instructional assistant, or other personal aide	17.7 (2.8)	12.9 (2.5)	31.6 (6.8)	17.2 (4.5)	19.9 (3.9)	23.3 (5.4)	38.7 (4.1)	20.8 (2.9)	33.5 (6.0)	28.0 (7.3)	51.3 (9.2)
A peer tutor	17.6 (2.8)	10.5 (2.3)	31.1 (6.8)	15.1 (4.3)	16.5 (3.6)	14.3 (4.5)	16.3 (3.1)	15.1 (2.6)	10.9 (3.9)	25.3 (7.0)	25.6 (8.1)
Tutoring by an adult	10.7 (2.3)	8.2 (2.1)	8.8 (4.2)	15.2 (4.3)	13.7 (3.3)	9.1 (3.7)	11.7 (2.7)	15.9 (2.6)	17.5 (4.8)	22.1 (6.7)	20.2 (7.4)
A reader or interpreter	5.7 (1.7)	7.1 (1.9)	14.0 (5.1)	5.6 (2.8)	23.1 (4.1)	24.2 (5.5)	14.3 (2.9)	8.1 (2.0)	8.9 (3.6)	11.2 (5.1)	20.8 (7.5)
A behavior management program	5.9 (1.7)	1.8 (1.0)	8.3 (4.1)	22.6 (5.0)	1.8 (1.3)	.4 (.8)	4.2 (1.7)	11.4 (2.3)	13.3 (4.3)	5.1 (3.6)	5.8 (4.3)
Self-advocacy training	2.4 (1.1)	3.8 (1.4)	6.7 (3.7)	3.5 (2.2)	3.6 (1.8)	4.6 (2.7)	5.9 (2.0)	4.2 (1.4)	6.1 (3.0)	9.5 (4.7)	7.9 (5.0)

Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Students with mental retardation, autism, or traumatic brain injuries also are among the most likely to receive a number of supports; however, students with hearing or visual impairments are most likely to receive assistance from readers or interpreters (approximately 24%), and students with emotional disturbances are most likely to receive assistance through behavior management programs (23%).

It is not surprising that technology aids are more frequently used by students with the kinds of disabilities for which the aids are particularly relevant (Exhibit 6-26). For example, books on tape are used by approximately 20% of students with visual impairments or multiple disabilities and by 13% of students with mental retardation. However, as would be expected, large-print or Braille materials are much more likely to be used by students with visual impairments than by any others (57% vs. 5% or fewer, $p<.001$). Students with visual impairments also are the most likely to use computer software designed for students with disabilities (12%). Students with orthopedic impairments most often are allowed to use a computer when others are not (16%).

Exhibit 6-26
SELECTED TECHNOLOGY AIDS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, 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 using:											
Books on tape	7.6 (1.9)	6.3 (1.8)	12.8 (4.9)	6.6 (3.0)	6.9 (2.5)	22.6 (5.4)	7.4 (2.2)	3.5 (1.3)	5.3 (2.8)	5.7 (3.8)	19.2 (7.3)
A computer for activities not allowed other students	5.6 (1.7)	4.2 (1.5)	11.9 (4.8)	3.7 (2.3)	4.0 (1.9)	8.3 (3.6)	15.9 (3.0)	5.8 (1.7)	10.6 (3.9)	9.8 (4.8)	9.4 (5.4)
Computer software designed for students with disabilities	1.2 (.8)	1.1 (.8)	2.1 (2.1)	1.0 (1.2)	.6 (.7)	12.1 (4.2)	4.9 (1.8)	.4 (.5)	3.3 (2.3)	2.5 (2.5)	5.6 (4.3)
Communication aids	.0	.9 (.7)	1.1 (1.5)	.0	7.1 (2.5)	8.5 (3.6)	5.9 (2.0)	.7 (.6)	4.8 (2.7)	2.0 (2.3)	12.2 (6.1)
Large-print/Braille books or large-print computer	.9 (.7)	1.5 (.9)	.0	.4 (.8)	.4 (.6)	57.1 (6.4)	7.1 (2.1)	.5 (.5)	.3 (.7)	1.6 (2.0)	5.2 (4.1)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only technology aids whose use differs significantly across disability categories are included in the exhibit.
Standard errors are in parentheses.

Demographic Variations in Accommodations, Supports, and Technology Aids Provided

There are very few differences in the provision of the specific types of accommodations, supports, or learning aids for students who differ in various demographic characteristics. An exception is that students from low-income families are more likely than students from more affluent families to receive slower-paced instruction, to be granted more time to take tests, and to have tests read to them (Exhibit 6-27). One-third of students whose family incomes are $25,000 or less are instructed at a slower pace, compared with 18% of students whose family incomes are more than $50,000 ($p<.05$). Similarly, 81% of lower-income youth are granted more time to take tests, compared with 69% of youth from more affluent families ($p<.05$).

Exhibit 6-27
SELECTED ACCOMMODATIONS PROVIDED TO STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, BY HOUSEHOLD INCOME

	$25,000 or Less	$25,001 to $50,000	More than $50,000
Percentage of students receiving:			
Slower-paced instruction	32.6 (5.2)	22.7 (4.7)	18.0 (3.7)
More time in taking tests	81.0 (4.3)	72.0 (5.0)	68.7 (4.5)
Tests read to student	36.0 (5.3)	23.1 (4.7)	22.2 (4.0)

Source: NLTS2 Wave 1 general education teacher survey.

Note: Only technology aids whose use differs significantly across income categories are included in the exhibit.
Standard errors are in parentheses.

Only one type of accommodation distinguishes students with different racial/ethnic backgrounds. Minority students are more likely than white students to be given additional time to complete assignments; 61% of white students, 74% of African-American students, and 78% of Hispanic students are given this accommodation ($p<.05$).

Teachers' Perceptions and Expectations of Students with Disabilities in Their General Education Academic Classes

Thus far, this chapter has described key aspects of the instruction that goes on in general education academic classes that include students with disabilities and the kinds of supports provided to both teachers and students to help them participate effectively in their shared educational endeavors. But, to what extent do teachers feel that the placement of these students in their classes is appropriate? What are teachers' expectations for students' performance? And to what extent do students meet these expectations? This section addresses these questions.

About two-thirds of students with disabilities who take general education academic classes have teachers who consider their placement in those classes to be "very appropriate" (Exhibit 6-28). Most of the rest are considered to have "somewhat appropriate" placements; however, the participation of 8% of students with disabilities in general education academic classes is considered "not very appropriate" or "not at all appropriate."

Exhibit 6-28
TEACHERS' PERCEPTIONS OF STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES

	Percentage	Standard Error
Students whose teachers report their placement in the general education academic class is:		
Very appropriate	66.1	2.5
Somewhat appropriate	25.6	2.3
Not very or not at all appropriate	8.3	1.5
Students who:		
Are expected to keep up with the rest of the class	97.4	1.0
Do keep up with the rest of the class	74.4	2.4

Source: NLTS2 Wave 1 general education teacher survey.

Despite variations in the perceived appropriateness of their placements, virtually all students with disabilities (97%) in general education academic classes are expected to keep up with others in their class, although only approximately three-fourths are reported to do so. This gap between teachers' expectations and students' performance may result in part from the fact that the reading and math abilities of students with disabilities who spend the majority of their time in general education classes are more than 2 years behind their grade level, on average (Blackorby et al., 2003).

There are no differences in teachers' perceptions of students' placement, in teachers' expectations for students to keep up, or in students' ability to do so by subject area or grade level. However, differences for students with different primary disabilities are apparent (Exhibit 6-29).

The majority of students in most disability categories are considered by their teachers to have "very appropriate" placements in general education academic classes. The exception is students with mental retardation, only 45% of whom are considered very appropriately placed in such classes. However, there still are notable differences in levels of perceived appropriateness across categories. The vast majority of students with visual or hearing impairments have teachers who believe that these students' placements in their general education academic classes are appropriate; only 3% and 4%, respectively, have teachers who believe otherwise. In contrast, between 13% and 16% of students with mental retardation, emotional disturbances, traumatic brain injuries, or multiple disabilities have teachers who believe they are not appropriately placed ($p<.05$ comparing students with hearing impairments).

Exhibit 6-29
TEACHERS' PERCEPTIONS OF STUDENTS WITH DISABILITIES IN GENERAL EDUCATION ACADEMIC CLASSES, 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 whose teachers report their placement in the general education academic class is:											
Very appropriate	69.0 (3.4)	70.7 (3.4)	45.3 (7.5)	58.8 (5.9)	75.9 (4.1)	80.1 (5.1)	69.8 (3.8)	64.1 (3.5)	62.6 (6.2)	60.6 (7.8)	52.6 (9.3)
Not at all/not very appropriate	6.8 (1.8)	7.5 (1.9)	16.3 (5.6)	13.8 (4.1)	3.5 (1.8)	2.6 (2.0)	6.3 (2.0)	8.5 (2.0)	8.7 (3.5)	15.1 (5.7)	13.3 (6.3)
Percentage who:											
Are expected to keep up with other students in the class	98.9 (.9)	98.2 (1.1)	84.1 (6.1)	97.9 (1.9)	96.3 (2.0)	96.8 (2.4)	95.8 (1.8)	98.1 (1.1)	89.4 (4.2)	93.3 (4.4)	93.0 (5.2)
Do keep up with other students in the class	77.5 (3.1)	78.7 (3.0)	54.2 (7.6)	64.9 (5.8)	86.9 (3.3)	86.5 (4.5)	78.1 (3.4)	68.4 (3.3)	76.5 (5.4)	75.0 (7.0)	71.0 (8.4)

Source: NLTS2 Wave 1 general education teacher survey.
Standard errors are in parentheses.

Between 89% and 99% of students in all disability categories except mental retardation have teachers who expect them to keep up with others in their general education classes. Fewer actually do keep up; however, there is a wide range—from 54% of students with mental retardation to 87% of students with hearing impairments. Gaps between the percentages of students who are expected to keep up and the percentages who actually do range from 9 percentage points for students with hearing impairments and 10 percentage points for students with visual impairments to 30 percentage points for students with mental retardation or other health impairments and 33% for students with emotional disturbances ($p<.05$).

Few differences in teachers' perceptions of students with disabilities in their general education academic classes are apparent for students who differ in demographic characteristics. One exception is that girls with disabilities are more likely than boys to have teachers who report that their placement is very appropriate (74% vs. 62%, $p<.05$).

Summary

As shown in Chapter 5, the general education academic classroom context of most students with disabilities is similar to that of the class as a whole. However, the curriculum used in instructing almost two-thirds of students with disabilities who are in general education academic classes is modified at least somewhat. Most other teacher-directed aspects of the class, such as instructional groupings, materials used, instructional experiences outside the classroom, and discipline practices, are largely the same for students with disabilities and students in the general education academic class as a whole. Students with disabilities are as likely as their classmates to receive whole-class and small-group instruction; to receive individual attention from their teachers; to use textbooks, lab equipment, or computers; and to go to the library or computer lab or on field trips. In addition, they are somewhat more likely than the class as a whole to receive individual instruction from an adult other than the teacher. Yet the fact that students with

disabilities are no more likely than their classmates to receive individual instruction from their teacher raises a question as to whether their individual learning needs are being met in their general education academic classrooms.

The similarity of experiences of students with disabilities and their peers in general education academic classes with regard to teacher-directed aspects of the class contrasts sharply with the differences between the groups in their participation in those classes. Students with disabilities consistently do not participate in their general education academic classes at the same level as their classmates. The largest gaps concern responding orally to questions and making presentations to the class. Whereas almost all students with disabilities are in classes in which students as a whole respond to questions at least sometimes, one in five students with disabilities rarely or never respond orally to questions. Whereas about two-thirds of students with disabilities are in classes where students as a whole make presentations to the class sometimes or often, half of students with disabilities rarely or never make them. Students with disabilities also are less likely to work independently or with a partner or group than are their classmates.

Despite these differences in students' behaviors in class, most students with disabilities have teachers who report that their placement in the class is "very appropriate." Further, almost all students are expected to keep up with the rest of the class, and three in four actually do. However, it is worrisome that almost one-fourth of students with disabilities in general education academic classes are not meeting the performance expectations of their teachers.

To help them keep up, almost all students with disabilities are reported to receive some type of accommodation, support, or learning aid. The most common accommodations are additional time to complete assignments and tests. Less common are slower-paced instruction, assignments that are shorter or different from those of the rest of the class, having tests modified or read to students, and physical adaptations to the classroom. The only type of support received by more than half of students with disabilities in general education academic classes is monitoring of progress by a special education teacher. Relatively few students with disabilities in general education academic classes use learning aids such as calculators, books on tape, or computers.

Daily class work is most frequently the factor cited as "very important" by teachers in grading students with disabilities, followed by homework, test results, attendance, and special projects. Students' class participation, attitude, and performance relative to a set standard are considered very important by fewer teachers. The importance teachers place on most factors does not differ for students with disabilities and their classmates, although they tend to give less importance to test scores and performance relative to a set standard for students with disabilities. In addition, although they may place about the same importance on most factors, teachers report using modified grading standards for approximately one-third of students with disabilities.

The experiences of students with disabilities in general education classes differ somewhat depending on the subject area of the classes. Mathematics classes stand out from classes in other subject areas in several ways that may make them particularly challenging for students with disabilities. It is in mathematics classes that they are the least likely to have a modified curriculum or modified tests, yet their mathematics teachers are more likely than teachers in other academic classes to place great importance on test results in determining grades for students with disabilities. Students with disabilities also are least likely to have modified grading standards in their mathematics classes relative to other kinds of academic classes. Tough grading standards that rely heavily on tests, which are not likely to be modified, could present

obstacles to academic success for some students with disabilities, who, on average, are more than 2 years behind grade level in their tested mathematics abilities. Further, students with disabilities are more likely to receive whole-class instruction in their math classes than in other academic classes and to use computers for academic drills, activities that would appear to leave little room for individualized instruction.

In contrast, it is in their language arts classes that students with disabilities are the most likely to have slower-paced instruction, be tutored by an adult other than the teacher, use computers as an accommodation and for word processing, or use books on tape. Students in social studies classes are the most likely to have modified grading standards and modified tests.

Many of the classroom experiences presented in this chapter are consistent across grade levels. However, the extent of curriculum modifications and the use of accommodations tend to decline over the grade levels—students with disabilities are increasingly expected to handle the general education curriculum without accommodations. Further, compared with their high school peers, middle school students with disabilities tend to be in classes where there is more small-group and individual instruction from an adult other than the teacher, opportunities for tailored instructional approaches that are less available to older students. Academic classes of middle school students also are more likely than those of high school students to include field trips or school-based instructional activities outside the classroom, which might engage students or appeal to individual interests.

The picture of general education classroom experiences that is painted for students with disabilities as a whole is mirrored for students with learning disabilities, because they constitute such a large percentage of the whole group. However, students with some other types of disabilities differ from the general pattern. For example, students with hearing or visual impairments tend to have experiences that are most like those of their general education academic class as a whole. They are the most likely to have an unmodified curriculum and the least likely to receive individual instruction and several kinds of accommodations and learning supports. Further, their levels of participation in general education classes do not differ from those of the class as a whole on the dimensions investigated in NLTS2, except that they are less likely to respond to questions in class frequently. In addition, students with hearing or visual impairments are among the least likely to have grading standards modified for them and to be granted additional time to complete assignments. Nonetheless, they are the most likely of all students with disabilities to be reported by teachers as keeping up with their classmates.

In contrast, students with mental retardation, traumatic brain injuries, or multiple disabilities tend to differ the most from their classmates in general education academic classes. They are the most likely to receive slower-paced instruction, be granted additional time to take tests, and be given modified tests. They also are the most likely to receive individualized instruction and to have their progress monitored by a special education teacher. In addition, students with mental retardation or multiple disabilities are the most likely of all students with disabilities in general education academic classes to be graded with modified criteria and among the most likely to be treated differently when it comes to classroom discipline. Students with mental retardation are the only group to experience differences from their classmates in how often they receive whole-class instruction. They also are the most likely of all students with disabilities to have community-based experiences, such as field trips, and to receive peer tutoring. In class, they are the least likely of all students with disabilities to participate. Reflecting these differences,

between one in eight and one in six students with mental retardation, traumatic brain injuries, or multiple disabilities have teachers who report that these students' placement in their classrooms is not appropriate, a higher rate of this perception than for students in most other categories.

Students with emotional disturbances present a somewhat different picture. Like students with mental retardation, traumatic brain injuries, or multiple disabilities, approximately one in seven of their teachers feel their placement in the class is not appropriate, yet almost all are expected to keep up with the rest of their class. They are not particularly likely to be provided accommodations or supports, except behavior management programs and modified discipline standards, and they are the least likely of all students with disabilities to keep up with the class: only two-thirds do so.

In summary, when the question "Are secondary school students with disabilities given access to the general education curriculum?" is posed, NLTS2 findings suggest that the answer is yes, in many ways but not others and for many students but not others.

The following chapter addresses many of the same classroom experiences that are described here for general education academic classrooms as they apply to general education vocational classes taken by secondary school students with disabilities.