

4. Grade Performance

Over the course of a school career, higher grade performance (e.g., grade point average and course passing rates) may help shape students' images of themselves as learners, increase their sense of belonging and self-efficacy, nurture academic aspirations, and determine their competence to perform academic tasks (Jones 2008; Kettler, Shiu, and Johnsen 2006). The decision by students with and without disabilities to persist in or leave school is affected by multiple interacting factors, such as family, peers, school, and neighborhood (Rumberger 2004; Wagner 1991). In addition to these factors, students' performance in their academic courses, rather than performance on general measures of achievement such as large-scale assessments, has been identified as the factor more directly related to graduation (Allensworth and Easton 2007; Ekstrom et al. 1986; Gwynne et al. 2009; Wagner et al. 1993; Willford 2009). In particular, research indicates that course failure in the freshman year and inadequate credit accumulation are highly predictive of failing to graduate from high school (Allensworth and Easton 2007). Students who perform well in school acquire the skills necessary to understand their environment and are able to self-regulate, establish goals, and set a course to achieve them (Cleary, Platten, and Nelson 2008). They have the basic skills that are desired by employers and that are the foundation for further education. Many poor school performers, on the other hand, may fail to acquire necessary skills, the lack of which presents serious obstacles to later efforts in the employment and/or postsecondary education arena (Bottoms and Timberlake 2007; Smith 2006).

School performance can be measured in many ways (e.g., standardized test scores, course grades, and receipt of failing grades). However, each measure captures only one aspect of what is a complex, multidimensional concept, and each has its substantive and methodological limitations. Here we examine two aspects of grade performance—grade point average and course failure—that have been associated with a range of school and post-high school outcomes (e.g., Allensworth and Easton 2007; Bottoms and Timberlake 2007; Wagner et al. 1993; Willford 2009). This chapter addresses the following questions for students with disabilities who attended typical high schools:⁴³

- What were the grade performance (i.e. grade point averages and course failure) experiences of students with disabilities in secondary schools?
- How did the grade performance (i.e. grade point averages and course failure) of students with disabilities compare with that of their peers in the general population?
- How did grade performance (i.e. grade point averages and course failure) differ by course type and instructional setting?
- How did grade performance (i.e. grade point averages and course failure) differ for students who differed in primary disability category, grade level, and high school completion status?

As noted in chapter 1, NLTS2 intends to describe the experiences of the population of students with disabilities as a whole, including both those who eventually completed their high

⁴³ Students who attended non-typical schools (e.g., schools serving only students with disabilities, hospital-based schools, home schools) are not included in these analyses.

school programs and those who did not. This chapter begins with an examination of grade point average and course failure by students with disabilities as a whole, and then continues with a focus on students who differed in disability category and grade level. It then distinguishes the experiences of students with disabilities by high school completion status, presenting data separately for those who did and did not complete high school. The text mentions only differences reaching at least the $p < .01$ level of significance.

Overall Grade Point Average and Course Failure

On average, students with disabilities who received grades earned a 2.3 grade point average (GPA) on a 4-point scale (table 26). The grade averages of students with disabilities were lower than the grade averages of the general student population (2.7 GPA).⁴⁴

Table 26. Grade point average and course failure rates of students with disabilities and students in the general population

	Students with disabilities	Students in the general population
Mean GPA in graded courses	2.3 (0.03)	2.7 (0.01)
Percentage of students whose mean GPA was:		
3.35 or higher	6.4 (0.97)	19.9 (0.57)
2.75 to < 3.35	22.2 (1.65)	27.9 (0.51)
2.25 to < 2.75	26.8 (1.76)	26.7 (0.49)
1.75 to < 2.25	21.2 (1.62)	18.8 (0.49)
1.25 to < 1.75	12.9 (1.33)	6.0 (0.30)
Less than 1.25	10.5 (1.22)	0.7 (0.12)
Percentage of students who had failed one or more graded courses	66.4 (1.86)	47.3 (0.41)
Mean number of failed courses of students who had failed a course	6.9 (0.36)	5.9 (0.08)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 3,680 to 6,180 youth with disabilities. General population comparison data are weighted population estimates based on samples that ranged from approximately 6,390 to 14,810 youth in ELS:2002.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009; U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), High School Transcript Study.

⁴⁴ General population estimates are based on calculations made using the restricted use data set from the U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), High School Transcript Study. All general population estimates include students who have completed high school, as well as those who have not (i.e., both graduates and dropouts have been included).

GPA's are a good summary of students' general grade performance. However, the mean GPA masks the broad distribution of grades.⁴⁵ Approximately 6 percent of students with disabilities had GPA's of 3.35 or higher (mostly A's and B's), and 11 percent had GPA's lower than 1.25 (mostly D's). Most students' GPA's were between these two ends of the grading spectrum; 22 percent earned GPA's of 2.75 to less than 3.35, 27 percent earned GPA's of 2.25 to less than 2.75, 21 percent earned GPA's of 1.75 to less than 2.25, and 13 percent earned GPA's of 1.25 to less than 1.75.

Differences in grade distribution between students with disabilities and students in the general population were most apparent at the two ends of the grading spectrum. Students in the general population were approximately three times as likely as students with disabilities to earn higher GPA's; 20 percent of students in the general population earned GPA's of 3.35 or above, compared with 6 percent of students with disabilities. In contrast, students with disabilities were more than 10 times as likely as their peers in the general population to earn GPA's below 1.25 (11 percent vs. 1 percent).

Another indicator of grade performance is having failed one or more courses, with a resulting loss of credits needed for graduation. Approximately two-thirds (66 percent) of students with disabilities had failed at least one course during their years in secondary school.⁴⁶ Those who had failed a course had failed seven courses, on average. The failure rate of students with disabilities was higher than that of their peers in the general population (66 percent vs. 47 percent), and among those who had failed a course, students with disabilities averaged more failed courses than students in the general population (seven courses vs. six courses).

Grade Performance, by Type of Course

As described in chapter 2, secondary students with disabilities were enrolled in a range of academic, vocational, and nonacademic, nonvocational courses such as performing arts or physical education. Students received lower grades in their academic courses (2.1 GPA, on average) than in their vocational (2.5) or nonacademic, nonvocational (2.6) courses (table 27). In addition, students were almost twice as likely to have failed an academic course as a vocational

⁴⁵ A data-driven approach, based on quartiles, was used to select the six GPA categories reported here and in table 26. After the distribution of GPA percentages of students with disabilities was divided into approximate quartiles, the resulting highest and lowest quartiles included a wide range of GPA's, i.e., GPA's of 2.75 or higher for the highest quartile, which represents approximate grades of B- to A+ and GPA's of 1.75 or lower for the lowest category, which represents approximate grades of C- to F. To help better distinguish grade performance within these two broad categories, the GPA spread in the highest and lowest quartiles then were divided approximately in half. For example, in the highest GPA quartile of 2.75 to 4.0, there is a 1.25 GPA-point-range between the two ends of the GPA spectrum. This 1.25 GPA range then was divided approximately in half (.6 and .65 points), resulting in the two highest GPA categories included in this report, i.e., 2.75 to less than 3.35 (.60 range) and 3.35 or higher (.65 range). A similar process was used to create the two lowest GPA categories.

⁴⁶ The analyses included in this chapter are based only on complete transcripts, with the exception of the by-grade-level analyses. Transcripts for students who had completed their high school programs typically included 4 or more years of coursework. Transcripts for students who had not completed high school were considered to be complete if transcript information was available for all of the grading periods the students had been in high school prior to leaving. For example, if a student had dropped out of high school after 9th grade, the student's one year of 9th-grade transcript data would be included here. Partial transcripts (e.g., only 9th-grade transcript information was collected for a student who had continued his or her education beyond the 9th grade) were not included in the analyses in this chapter, other than the by-grade-level analyses.

course (58 percent vs. 31 percent). They also were more likely to have failed an academic course than a nonacademic, nonvocational course (37 percent).

Table 27. Grade point average and course failure rates of students with disabilities, by course type

	Academic	Vocational	Nonacademic, nonvocational
Mean GPA in graded courses	2.1 (0.03)	2.5 (0.04)	2.6 (0.04)
Percentage of students who had failed one or more graded courses	57.9 (1.96)	30.7 (1.87)	37.4 (1.91)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

Grades received in vocational courses were lower, on average, than those earned in nonacademic, nonvocational courses; however, the course failure rate did not differ significantly between these two types of courses.

Grade Performance, by Instructional Setting

On average, grades earned by students with disabilities in their general education courses were lower than those earned in their special education courses (table 28). Students received a mean GPA of 2.2 in courses taken in general education settings and a mean GPA of 2.5 in those taken in special education settings. This pattern was consistent across types of courses. Students earned lower GPAs, on average, in general education settings than in special education settings in academic (1.9 vs. 2.4), vocational (2.4 vs. 2.8), and nonacademic, nonvocational courses (2.5 vs. 2.7).

Table 28. Grade point average and course failure rates of students with disabilities, by instructional setting and course type

	Overall		Academic courses		Vocational courses		Nonacademic, nonvocational courses	
	General education	Special education	General education	Special education	General education	Special education	General education	Special education
Mean GPA in graded courses	2.2 (0.03)	2.5 (0.05)	1.9 (0.04)	2.4 (0.05)	2.4 (0.04)	2.8 (0.08)	2.5 (0.04)	2.7 (0.06)
Percentage of students who had failed one or more graded courses	65.4 (1.90)	29.7 (2.12)	56.4 (2.10)	29.0 (2.33)	30.1 (1.94)	14.7 (2.5)	36.5 (1.94)	17.7 (2.05)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

Students also were more than twice as likely to have failed at least one course in a general education setting as in a special education setting (65 percent vs. 30 percent). Again, this pattern was consistent across course types. More than half (56 percent) of students in general education academic courses had failed at least one course, compared with 29 percent in special education academic courses. Similarly, failure rates in vocational and nonacademic, nonvocational courses were higher in general education settings, compared with special education settings (30 percent vs. 15 percent and 37 percent vs. 18 percent, respectively).

Disability Differences in Grade Performance

The mean GPAs in graded coursework varied across disability categories, ranging from 2.0 for students with emotional disturbances to 3.0 for students with autism (table 29). Students with autism, deaf-blindness, multiple disabilities, or mental retardation averaged higher GPAs than students in several other disability categories. It is important to note that differences in grade performance are confounded by several other variables, including instructional setting and course type. For example, as described earlier in this chapter, students received higher grades, on average, in special education courses than in general education courses. These confounding variables are distributed differently across disability categories. For example, students in the four disability categories that averaged higher GPAs also had earned larger proportions of their overall credits in special education than general education courses. This section explores the broad differences in grade performance between disability categories and does not examine the complex interactions and relationships among subgroups relative to other variables.

Students with autism received higher grades (3.0 GPA, on average) than students in all other disability categories (ranging from 2.0 to 2.9). Students with deaf-blindness, multiple disabilities, or mental retardation earned higher GPAs (2.9, 2.7, and 2.5, respectively) than students with learning disabilities (2.2) or other health impairments (2.2). Students with deaf-blindness or multiple disabilities also earned higher GPAs than students with speech/language impairments (2.4).

Table 29. Grade point average and course failure rates, by disability category

	Learning disability	Speech/language impairment	Mental retardation	Emotional disturbance	Hearing impairment	Visual impairment	Orthopedic impairment	Other health impairment	Autism	Traumatic brain injury	Multiple disabilities	Deaf-blindness
Mean GPA in graded courses	2.2 (0.04)	2.4 (0.05)	2.5 (0.06)	2.0 (0.06)	2.6 (0.07)	2.7 (0.09)	2.7 (0.06)	2.2 (0.06)	3.0 (0.07)	2.5 (0.09)	2.7 (0.08)	2.9 (0.14)
Percentage of students who had failed one or more graded courses	69.1 (2.69)	62.7 (2.96)	50.8 (3.25)	77.1 (3.02)	47.2 (4.29)	43.4 (5.72)	50.1 (3.83)	70.3 (3.30)	27.0 (4.22)	55.1 (6.47)	44.3 (4.70)	40.8 (7.85)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

Students in several disability categories who had not earned higher proportions of their overall credits in special education settings—those with visual impairments, orthopedic impairments, or hearing impairments—also received higher GPAs (2.7, 2.7, and 2.6, respectively) than students in several other disability categories, including students with learning

disabilities (2.2) or other health impairments (2.2). Students with visual impairments or orthopedic impairments also earned higher GPAs, on average, than students with speech/language impairments (2.4).

Conversely, students with emotional disturbances averaged lower GPAs (2.0) than students in 10 of the 11 other disability categories.

The pattern of variation in course failure across disability categories was similar to the differences described for GPAs. Students with autism, deaf-blindness, multiple disabilities, or mental retardation were less likely to have failed a course (27 percent, 41 percent, 44 percent, and 51 percent, respectively) than were students with learning disabilities (69 percent), speech/language impairments (63 percent), emotional disturbances (77 percent), or other health impairments (70 percent). Students with autism also were less likely to have failed a course than were students with mental retardation (51 percent), hearing impairments (47 percent), orthopedic impairments (50 percent), traumatic brain injuries (55 percent), or multiple disabilities (44 percent).

Students with visual impairments, hearing impairments, or orthopedic impairments were less likely to have received a failing grade (43 percent, 47 percent, and 50 percent, respectively) than were students with learning disabilities (69 percent), speech/language impairments (63 percent), emotional disturbances (77 percent), or other health impairments (70 percent).

Students with emotional disturbances were more likely to have failed a course (77 percent) than were students in all disability categories except other health impairments.

Grade-Level Differences in Grade Performance

Twelfth-grade students with disabilities earned higher GPAs (2.6, on average) than students in grades 9 (2.2), 10 (2.2), and 11 (2.4) (table 30).⁴⁷ Grades earned by students in the 11th grade also were higher than those received in grades 9 and 10. Similarly, students in the 12th grade were less likely than students in earlier grades to have failed a course. Twenty-seven percent of 12th-graders had failed a course, compared with 44 percent of 9th-graders, 43 percent of 10th-graders, and 39 percent of 11th-graders. A variety of factors may have contributed to the improved grade performance in the upper grades, including for example, an increase in electives as students completed required courses, or the elimination of poor performers from the student body as students dropped out in 9th or 10th grade.

⁴⁷ As indicated in footnote 3, only students with complete transcript information for the years they had been in high school were included in the analyses for this chapter, with the exception of the by-grade-level analyses. To benefit from the full range of available transcript information, transcript data for the students not included in the overall analyses were included in the by-grade-level analyses. To be included in the by-grade-level analyses, a transcript needed to be complete for the grade for which it provided information.

Table 30. Grade point average and course failure rates of students with disabilities, by grade level

	9th grade	10th grade	11th grade	12th grade	Extended 13th grade	Ungraded
Mean GPA in graded courses	2.2 (0.03)	2.2 (0.03)	2.4 (0.04)	2.6 (0.04)	2.6 (0.30)	2.1 (0.46)
Percentage of students who had failed one or more graded courses	43.7 (1.80)	42.5 (1.87)	38.8 (1.96)	26.8 (1.89)	22.4 (11.21)	24.9 (14.50)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

The average grade performance of students with disabilities in extended 13th grade⁴⁸ or in ungraded programs did not differ significantly from that of their peers in earlier grades. However, students in 12th grade were less likely to have failed a course (27 percent) than were students in grades 9 (44 percent), 10 (43 percent), and 11 (39 percent).

Demographic Differences in Grade Performance

The mean GPAs earned by students with disabilities differed significantly by gender, with female students having earned a higher mean GPA than male students (2.4 vs. 2.2; table 31). There was no significant gender difference in the percentage of students who failed one or more graded courses. Variations in grade performance also were apparent by race/ethnicity. White students with disabilities earned a higher mean GPA than did African American students with disabilities (2.4 vs. 2.0). White students also were less likely to have failed one or more graded courses than were African American students (62 percent vs. 80 percent). The grade performance of Hispanic students with disabilities did not differ significantly from that of their White or African American peers.

Grade performance also differed by household income. Students from households with the highest income level (more than \$50,000 per year) averaged a higher GPA (2.5 vs. 2.1) and had a lower likelihood of having received a failing grade (53 percent vs. 75 percent) than students from households with the lowest income level (\$25,000 or less). In addition, students from the highest-income households were less likely to have failed a course than were students from households with annual incomes from \$25,001 to \$50,000 (53 percent vs. 69 percent).

⁴⁸ Students who continued their high school programs beyond 12th grade often remained in high school for longer than 1 additional school year; on average, students spent 1.57 school years in extended 13th grade.

Table 31. Grade point average and course failure rates of students with disabilities, by demographic characteristics

	Gender		Race/ethnicity			Household income		
	Male	Female	White	African American	Hispanic	\$25,000 or less	\$25,001 to \$50,000	More than \$50,000
Mean GPA in graded courses	2.2 (0.04)	2.4 (0.05)	2.4 (0.04)	2.0 (0.07)	2.3 (0.10)	2.1 (0.06)	2.3 (0.06)	2.5 (0.06)
Percentage of students who had failed one or more graded courses	68.9 (2.28)	61.2 (3.17)	62.4 (2.35)	80.0 (3.59)	63.7 (5.72)	74.5 (3.11)	69.3 (3.64)	52.9 (3.63)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

Differences in Grade Performance, by High School Completion Status

Grades earned by students with disabilities differed significantly by high school completion status. Students who completed high school earned a higher mean GPA than did students who had not completed high school (2.5 vs. 1.5; table 32). Consistent with this difference, completers also were less likely to have failed one or more graded courses than were noncompleters (60 percent vs. 89 percent).

Table 32. Grade point average and course failure rates of students with disabilities, by high school completion status

	Completers	Non-completers
Mean GPA in graded courses	2.5 (0.03)	1.5 (0.07)
Percentage of students who had failed one or more graded courses	59.9 (2.20)	88.9 (2.55)

NOTE: Standard errors are in parentheses. Values are weighted population estimates derived from analyses in which the total sample ranged across variables from approximately 5,760 to 6,180 students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), transcript data collection, 2002 through 2009.

This chapter has focused on student's performance in their coursework. It is the final chapter in this report describing the course-taking and grade-performance experiences of students with disabilities.