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Course Credit Accrual and Dropping Out of High School, by Student Characteristics

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Introduction

With federal legislation now requiring schools to report graduation rates, high school dropouts are receiving renewed attention from educators, policymakers, and researchers. Recent research has indicated a relationship between the number of course credits that students accrue each school year and students' high school completion status (Allensworth and Easton 2005). This Statistics in Brief contributes to the research by using a nationally representative sample of 10th-graders in public and private schools in the spring of 2002 to examine the timing of dropping out and its relationship to the number of credits earned by high school students. Differences in course credit accrual are first reported by selected subjects (English, mathematics, and science). Then, differences in the average cumulative number of course credits accrued across academic years between high school graduates and dropouts are examined in order to describe their enrollment and completion behaviors. This analysis examines variations in course credit accrual[1] and the timing of dropping out by student characteristics (sex, race/ethnicity, and socioeconomic status) and students' school characteristics (location and sophomore class size). In addition, this Statistics in Brief compares the characteristics of students who dropped out with those of students who graduated on time, to show how these groups differ.

Tenth-graders in spring 2002 who had not completed their high school education by August 2004 and were no longer enrolled in school are referred to as *dropouts* (see Planty, Bozick, and Ingels 2006). Dropouts are divided into three categories based on the highest academic year in which course credits were observed: 10th-grade dropouts (who did not earn any additional course credits in high school beyond the 2001–02 academic year), 11th-grade dropouts (who did not earn any credits beyond the 2002–03 academic year), and 12th-grade dropouts (who did not earn any credits beyond the 2003–04 academic year).[2] Tenth-graders in spring 2002 who received their high school diploma between September 2003 and August 2004 are defined as *on-time graduates*. Readers are cautioned that students who were 10th-graders in the spring of 2002 but had repeated 9th or 10th grade were eligible for inclusion in the sample. While this analysis applies the same definition of *on-time graduate* to these students, they may have taken 5 or more years to graduate from high school.

Comparisons in average cumulative course credits earned between students who dropped out at any point from spring 2002 to August 2004 and students who graduated on time are the primary focus of this analysis.[3,4] Credits earned by dropouts in their last year of observed enrollment (i.e., 2001–02 for 10th-grade dropouts, 2002–03 for 11th-grade dropouts, and 2003–04 for 12th-grade dropouts) are reported in tables 2, 3, 5, and 7. However, these credits

[1] The basic unit of coursework measurement is the course credit, which refers to standardized Carnegie units. A Carnegie unit is a standard of measurement used for secondary education that is equivalent to the completion of a course that meets one period per day for one school year, where a period is typically at least 40 minutes.

[2] The dropout grade is determined solely by the academic year in which the student dropped out and not by the student's actual grade level. The transcripts used in this analysis clearly identified the academic year in which a student earned course credits or dropped out, but it was not always clear which grade the student was in at the time. Grade retention policies vary widely by school and subsequently, a dropout departure point based on academic year proved to be more reliable. Thus, a student who repeated 10th grade and accumulated 10th-grade course credits while the cohort was in 11th grade but did not accrue any credits in the cohort's 12th-grade year would be classified as an 11th-grade dropout.

[3] Since the Education Longitudinal Study of 2002 (ELS:2002) cohort was sampled in the spring of 2002, students who dropped out in the 9th grade and at the beginning of the 10th grade were not captured in this analysis. Also, the graduation period for spring 2002 10th-graders in ELS:2002 extended from fall 2003 through summer 2004.

[4] For this study, all group differences were tested for statistical significance using two-tailed Student's *t*-tests, and all differences discussed in the report are statistically significant at the $p < .05$ level.

are not compared to credits earned by on-time graduates in the same year. By definition, students who dropped out did not complete the academic year in which they dropped out. Although dropouts can earn course credits during the dropout year, one would anticipate a significant leveling off of credits earned in this year. Subsequently, the difference in credits earned between on-time graduates and dropouts tends to be inflated when looking at the partially enrolled dropout year. This analysis uses a conservative approach by making comparisons only for the academic years in which on-time graduates and dropouts were both enrolled for the entire year. Comparing the last full-year enrolled helps assess credit accrual problems while students are still enrolled in school.

This Statistics in Brief does not examine the total number or type of credits a student is required to accrue in order to graduate from high school, but instead compares the difference in cumulative course credits accrued by on-time graduates to those accrued by dropouts before dropping out of high school.[5] (For more information on state course credit requirements for high school graduation, see http://nces.ed.gov/programs/statereform/res_tab3.asp).

The data used in this analysis are drawn from high school transcripts collected in 2005 as part of the first follow-up to the National Center for Education Statistics (NCES) Education Longitudinal Study of 2002 (ELS:2002). These high school transcripts provide data on enrollment histories, graduation dates, and coursetaking patterns.

The current analysis is limited in certain ways. First, students who left high school prior to spring 2002 or who were retained in the ninth grade were not part of the sample to be analyzed. Furthermore, the analysis does not include the 12 percent of students who graduated early (before the 2003–04 academic year), received an alternative credential (such as a General Educational Development (GED) certificate or certificate of attendance), or transferred schools after the 2001–02 academic year and did not have a known exit status or graduation date. Also, the high school transcripts collected in 2004 as part of the ELS:2002 first follow-up do not report failed or attempted courses in a consistent manner. This makes it difficult to determine whether dropouts accrue fewer credits than on-time graduates because they enroll in fewer courses or because they fail more courses.

High School Completion Status

As shown in table 1, approximately 82 percent of students who were 10th-graders in the spring of 2002 graduated from high school on time. An additional 1 percent graduated early (prior to the 2003–04 academic year). In contrast, 5 percent left school without earning a high school diploma or alternative credential. Two percent were still enrolled as of August 2004 (nongraduates). The "other status" category (1 percent) includes those students who received an alternative credential, left the country, or died. The remaining students graduated with an unknown graduation date (1 percent) or transferred schools after the 2001–02 academic year and did not have a known exit status or graduation date (8 percent).[6,7]

Table 1. Percentage distribution of spring 2002 10th-graders, by high school completion status: 2004

High school completion status	Percent
Total	**100.0**
On-time graduates	81.6
Early graduates[1]	1.5
Dropouts	4.6
12th grade	3.2
11th grade	1.0
10th grade	0.4
Nongraduates[2]	1.7
Graduated, date unknown	1.1
Other status[3]	1.4
Transfer or exit status or date left unknown	8.1

[1] Early graduates are students who graduated prior to the 2003–04 academic year.
[2] Nongraduates are students who had not graduated and were still enrolled as of August 2004.
[3] Students who received an alternative credential (such as a General Educational Development (GED) certificate or certificate of attendance), left the country, or died are included in the "other status" category.
NOTE: Estimates are weighted by F1TRSCWT. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Course Credits Accrued by Subject

High school dropouts earned fewer course credits in selected subjects than on-time graduates. Table 2 reports the average number of credits earned in English, mathematics, and science by academic year and high school completion status. For each academic year, high school dropouts earned fewer course credits than did on-time graduates in English, mathematics, and science. For example, in the 2000–01 academic year, on-time graduates earned more credits than dropouts in English (1.07 vs. 0.90 credits), mathematics (1.00 vs. 0.71 credits), and science (0.89 vs. 0.63 credits). During the 2001–02 academic year, the course credit gap between on-time graduates and dropouts was 0.31 credits in English, 0.35 credits in mathematics, and 0.36 credits in science.

Cumulative Course Credit Accrual and Course Credit Accrual Gaps

During the 2000–01 academic year, on-time graduates earned 6.6 credits (table 3). By the end of the following year, on-time graduates had accrued a total of 13.3 credits, and by the end of the 2002–03 academic year (11th grade), they had accrued 19.8 credits. On-time graduates left high school in 2003–04 having accrued a total of 25.8 credits.

Differences in the number of course credits accrued by on-time graduates and dropouts were already present by the

[5] Readers are cautioned that the average number of course credits accrued by on-time graduates is not equal to the number of credits students are required to accrue in order to graduate and may, in fact, be higher. Therefore, the credit gap between on-time graduates and dropouts should not be interpreted as the additional number of credits the dropouts need in order to graduate.

[6] The 12 percent of students who graduated prior to the 2003–04 academic year, did not have a known transfer or exit status or graduation date, or were included in the "other status" category are not discussed in this report.

[7] These estimates may differ from other measures of student progress and persistence due to differences in the population being studied, definition of outcomes, information source, and data collection time frame. Given such differences, one would not expect to see identical or even similar estimates between different measures of student persistence and progress.

Table 2. Average course credits earned by spring 2002 10th-graders, by subject, academic year, and high school completion status: 2004

High school completion status	Credits earned, by academic year											
	English				Mathematics				Science			
	2000–01	2001–02	2002–03	2003–04	2000–01	2001–02	2002–03	2003–04	2000–01	2001–02	2002–03	2003–04
Total[1]	**1.05**	**1.03**	**1.02**	**0.96**	**0.97**	**0.93**	**0.84**	**0.55**	**0.86**	**0.91**	**0.78**	**0.51**
On-time graduates	1.07	1.06	1.08	1.07	1.00	0.98	0.90	0.61	0.89	0.95	0.85	0.56
Dropouts	0.90	0.75	0.47	0.16	0.71	0.63	0.33	0.08	0.63	0.59	0.28	0.08
12th grade	0.96	0.82	0.62	0.23 [2]	0.79	0.67	0.43	0.12 [2]	0.67	0.67	0.37	0.12 [2]
11th grade	0.80	0.60	0.18 [2]	†	0.59	0.57	0.13 [2]	†	0.56	0.42	0.10 [2]	†
10th grade	0.67	0.62 [2]	†	†	0.43	0.48 [2]	†	†	0.43	0.33 [2]	†	†
Nongraduates[3]	1.05	0.91	0.90	0.80	0.79	0.67	0.66	0.44	0.72	0.71	0.55	0.42

† Not applicable.
[1] Students who graduated early (prior to the 2003–04 academic year); did not have a known transfer status, exit status or graduation date; or were classified as "other status" (received an alternative credential, left the country, or died) are included in the total but not reported separately.
[2] The final year of observed enrollment is one in which the student earned course credits but was not necessarily enrolled for the entire year.
[3] Nongraduates are students who had not graduated and were still enrolled as of August 2004.
NOTE: The basic unit of coursework measurement is the course credit. Course credits refer to standardized Carnegie units. By definition, 11th-grade dropouts in the 2003-04 academic year and 10th-grade dropouts in the 2002-03 and 2003-04 academic years were no longer enrolled in school and could not earn course credits. The calculations for average course credits earned by all students and all dropouts include zeros for those no longer enrolled in school. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

end of the 2000–01 academic year and the cumulative course credit accrual gap increased with each subsequent academic year (figure 1).[8] Between on-time graduates and 10th-grade dropouts, the gap in credits accrued during 2000–01 was 2.7 credits (6.6 vs. 3.9 credits). Between on-time graduates and 11th-grade dropouts, the gap increased from 2.1 credits in 2000–01 (6.6 vs. 4.4 credits) to 4.8 credits in 2001–02 (13.3 vs. 8.5 credits).[9] Between on-time graduates and 12th-grade dropouts, the gap increased from 1.2 credits in 2000–01 (6.6 vs. 5.4 credits) to 2.9 credits in 2001–02 (13.3 vs. 10.4 credits) and 5.9 credits in 2002–03 (19.8 vs. 13.9 credits).

Another way to understand the cumulative course credit accrual gap is to look at the percentage of credits earned by dropouts in relation to credits earned by on-time graduates in a given year. For example, during the 2000–01 academic year, 10th-grade dropouts accrued 59 percent of the credits accrued by on-time graduates (table 3). If the rate of credit accrual for 10th-grade dropouts remained constant at 3.9 credits per year, it would take them 6.6 years to accrue the 25.8 credits that on-time graduates accrued before graduating.[10] Eleventh-grade dropouts accrued 67 percent of the credits that on-time graduates accrued in 2000-01 and 64 percent of the credits in 2001–02. Twelfth-grade dropouts earned 82 percent of the credits that on-time graduates earned in the 2000–01 academic year. By 2001–02, the percentage was 78 percent, and by the 2002–03 academic year, 12th-grade dropouts had accrued 70 percent of the credits accrued by on-time graduates. Thus, 12th-grade dropouts would need to earn almost 12 credits during the 2003–04 academic year in order to accrue the 25.8 credits that on-time graduates earned on average before graduating.

Cumulative Course Credit Accrual Gaps by Student Characteristics

Sex. Approximately 49 percent of all on-time graduates at the end of the 2003–04 academic year were male (table 4). Males represented a greater percentage of the 12th- and 10th-grade dropout populations than they did of the on-time graduate population (62 and 65 vs. 49 percent, respectively).

Table 3. Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status: 2004

High school completion status	Academic year			
	2000-01	2001–02	2002–03	2003–04
Total[1]	**6.4**	**12.8**	**19.0**	**24.4**
On-time graduates	6.6	13.3	19.8	25.8
Dropouts	5.1	9.7	12.4	13.3
12th grade	5.4	10.4	13.9	15.2 [2]
11th grade	4.4	8.5	9.7 [2]	†
10th grade	3.9	7.2 [2]	†	†
Nongraduates[3]	5.8	11.2	16.1	20.7

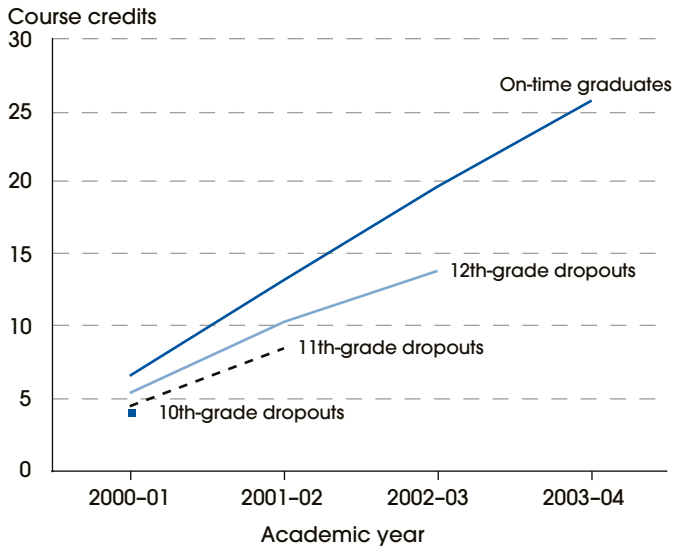
† Not applicable.
[1] Students who graduated early (prior to the 2003–04 academic year); did not have a known transfer status, exit status or graduation date; or were classified as "other status" (received an alternative credential, left the country, or died) are included in the total but not reported separately. Students who dropped out were retained in the calculation of average course credits accrued during the academic year. By definition, 11th-grade dropouts in the 2003-04 academic year and 10th-grade dropouts in the 2002-03 and 2003-04 academic years were no longer enrolled in school and could not earn course credits. The calculations for average course credits earned by all students and all dropouts include zeros for those no longer enrolled in school.
[2] The final year of observed enrollment is one in which the student earned course credits but was not necessarily enrolled for the entire year.
[3] Nongraduates are students who had not graduated and were still enrolled as of August 2004.
NOTE: The basic unit of coursework measurement is the course credit. Course credits refer to standardized Carnegie units. Estimates are weighted by F1TRSCWT. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

[8] The decline in credits earned in each subsequent academic year by dropouts may be due in part to a decrease in the number of credits attempted or an increase in the number of courses failed. The high school transcripts collected in 2004 as part of the ELS:2002 first follow-up do not report failed or attempted courses in a consistent manner. This makes it difficult to determine whether dropouts accrue fewer credits than on-time graduates because they enroll in fewer courses or because they fail more courses.

[9] The course credit gaps reported in the text are calculated using unrounded estimates.

[10] Readers are again cautioned that the average number of course credits accrued by on-time graduates is not equal to the number of credits students are required to accrue in order to graduate.

Figure 1. Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status: 2004



SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table 4. Percentage distribution of spring 2002 10th-graders, by high school completion status and student characteristics: 2004

Student characteristics	On-time graduates	Dropouts		
		12th grade	11th grade	10th grade
Total	**100.0**	**100.0**	**100.0**	**100.0**
Sex				
Male	48.8	61.7	56.6	65.2
Female	51.2	38.3	43.4	34.8
Race/ethnicity[1]				
White	64.9	42.7	43.6	37.8
Black	12.1	19.0	20.6	36.7
Hispanic	13.8	29.8	28.2	22.3
Other	9.3	8.5	7.5	‡
Socioeconomic status[2]				
Lowest quartile	20.8	45.8	48.3	46.4
Middle quartiles	50.7	46.8	50.0	45.9
Highest quartile	28.4	7.4	1.8 !	7.7 !

! Interpret data with caution. Standard error is more than one-third as large as the estimate.
‡ Reporting standards not met (too few cases).
[1] Race categories exclude Hispanic origin unless specified. Black includes African American and Hispanic includes Latino. "Other" includes Asian, Pacific Islander, American Indian (including Alaska Native), and those reporting more than one race.
[2] Socioeconomic status (SES) was measured by a composite score based on five equally weighted, standardized components: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.
NOTE: Estimates are weighted by F1TRSCWT. Details may not sum to totals due to rounding. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Conversely, while females comprised 51 percent of the on-time graduate population, they comprised a smaller percentage of the 12th- and 10th-grade dropout populations (38 and 35 percent, respectively).

For both males and females, the course credit accrual gap between on-time graduates and dropouts was present by the 2000–01 academic year and the cumulative course credit accrual gap increased in each subsequent academic year (table 5). For male on-time graduates and male 10th-grade dropouts, the gap was 2.4 credits in 2000–01 (6.6 vs. 4.1 credits) (figure 2). For male on-time graduates and male 11th-grade dropouts, the gap increased from 2.4 credits in 2000–01 (6.6 vs. 4.2 credits) to 5.2 credits in 2001–02 (13.2 vs. 8.0 credits) (figure 3). The gap in accrued course credits between male on-time graduates and male 12th-grade dropouts increased from 1.3 credits in 2000–01 (6.6 vs. 5.2 credits) to 3.3 credits in 2001–02 (13.2 vs. 9.9 credits) (figure 4). By the 2002–03 academic year, the gap was 6.5 credits (19.7 vs. 13.2 credits).

For female on-time graduates and female 10th-grade dropouts, a 3.3 course credit accrual gap existed by the end of the 2000–01 academic year (6.6 vs. 3.3 credits) (figure 2). For female on-time graduates and female 11th-grade dropouts, the gap increased from 1.8 credits in 2000–01 (6.6 vs. 4.8 credits) to 4.1 credits in 2001–02 (13.3 vs. 9.2 credits) (figure 3). The gap between female on-time graduates and their 12th-grade dropout peers increased from 1.0 credit in 2000–01 (6.6 vs. 5.7 credits) to 2.3 credits in 2001–02 (13.3 vs. 11.1 credits) and 4.8 credits in 2002–03 (19.9 vs. 15.1 credits) (figure 4).

Differences in course credit accrual gaps were also found by sex within academic years. For example, the cumulative gap between on-time graduates and 12th-grade dropouts in 2001–02 and 2002–03 was larger for males than for females (3.3 vs. 2.3 credits and 6.5 vs. 4.8 credits, respectively). Thus, male 12th-grade dropouts were further behind their on-time peers in cumulative course credits accrued than were female 12th-grade dropouts compared to their on-time peers. No within-year measurable differences were found between males and females in the size of the cumulative credit gap for on-time graduates versus 11th-grade dropouts and for on-time graduates versus 10th-grade dropouts.

Race/ethnicity.[11] White students represented 65 percent of the total on-time graduate population in the 2003–04 academic year, which was higher than their representation within the 12th-, 11th-, and 10th-grade dropout populations (43, 44, and 38 percent, respectively) (table 4). Conversely, Black students represented a smaller percentage of the on-time graduate population (12 percent) and a larger percentage of the 12th- and 10th-grade dropout populations (19 and 37 percent, respectively).[12] Hispanic students also represented a smaller percentage of the on-time graduate population (14 percent) and a larger percentage of the 12th- and 11th-grade dropout populations (30 and 28 percent, respectively).

By the end of the 2000–01 academic year, on-time graduates in each race/ethnicity had already accumulated more course

[11] Race categories exclude Hispanic origin unless specified. Black includes African American and Hispanic includes Latino. Only data for White, Black, and Hispanic students are compared in the text. However, tables 4 and 5 include an "other" race/ethnicity category, which includes Asian, Pacific Islander, and American Indian (including Alaska Native) students and students reporting more than one race. These categories are not reported separately due to small sample sizes.

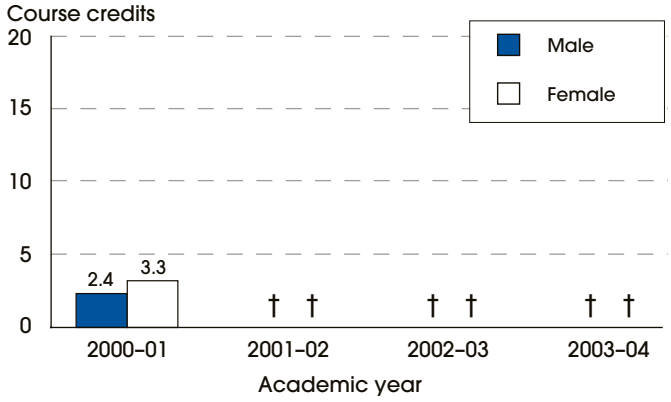
[12] The percentage of Black on-time graduates was not measurably different from the percentage of Black 11th-grade dropouts.

Table 5. Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status, sex, race/ethnicity, and socioeconomic status: 2004

High school completion status and student characteristics	Academic year			
	2000–01	2001–02	2002–03	2003–04
Sex				
Male				
On-time graduate	6.6	13.2	19.7	25.7
12th-grade dropout	5.2	9.9	13.2	14.4 [1]
11th-grade dropout	4.2	8.0	9.3 [1]	†
10th-grade dropout	4.1	7.7 [1]	†	†
Female				
On-time graduate	6.6	13.3	19.9	25.9
12th-grade dropout	5.7	11.1	15.1	16.5 [1]
11th-grade dropout	4.8	9.2	10.2 [1]	†
10th-grade dropout	3.3	6.3 [1]	†	†
Race/ethnicity[2]				
White				
On-time graduate	6.7	13.4	20.0	26.0
12th-grade dropout	5.6	11.1	15.1	16.6 [1]
11th-grade dropout	4.9	9.8	11.2 [1]	†
10th-grade dropout	5.3	9.8 [1]	†	†
Black				
On-time graduate	6.6	13.2	19.7	25.6
12th-grade dropout	5.2	9.9	12.9	13.8 [1]
11th-grade dropout	4.2	7.4	8.6 [1]	†
10th-grade dropout	3.2	5.7 [1]	†	†
Hispanic				
On-time graduate	6.4	12.8	19.2	25.0
12th-grade dropout	5.2	9.6	12.7	14.0 [1]
11th-grade dropout	3.9	7.2	8.2 [1]	†
10th-grade dropout	2.4	5.3 [1]	†	†
Other				
On-time graduate	6.4	13.0	19.5	25.6
12th-grade dropout	5.6	10.7	14.1	15.6 [1]
11th-grade dropout	4.6	8.9	10.0 [1]	†
10th-grade dropout	‡	‡ [1]	†	†
Socioeconomic status[3]				
Lowest quartile				
On-time graduate	6.5	13.0	19.5	25.4
12th-grade dropout	5.3	10.1	13.5	14.8 [1]
11th-grade dropout	4.4	8.4	9.4 [1]	†
10th-grade dropout	3.7	7.0 [1]	†	†
Middle quartiles				
On-time graduate	6.6	13.3	19.8	25.8
12th-grade dropout	5.5	10.6	14.2	15.4 [1]
11th-grade dropout	4.4	8.6	10.0 [1]	†
10th-grade dropout	3.8	6.8 [1]	†	†
Highest quartiles				
On-time graduate	6.6	13.4	20.0	26.0
12th-grade dropout	5.3	10.5	14.7	16.7 [1]
11th-grade dropout	5.0	9.1	10.2 [1]	†
10th-grade dropout	5.4	10.9 [1]	†	†

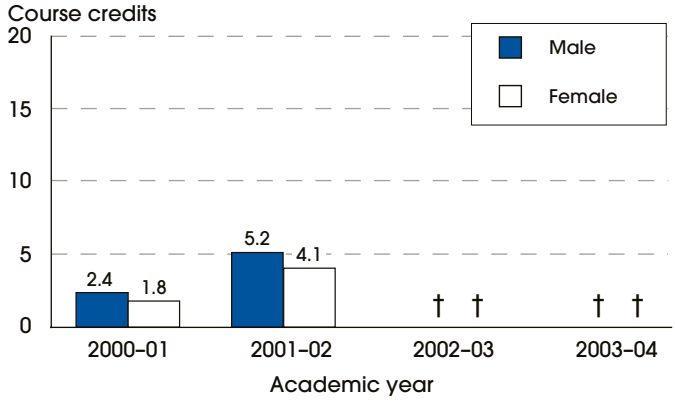
† Not applicable.
‡ Reporting standards not met (too few cases).
[1] The final year of observed enrollment is one in which the student earned course credits but was not necessarily enrolled for the entire year.
[2] Race categories exclude Hispanic origin unless specified. Black includes African American and Hispanic includes Latino. "Other" includes Asian, Pacific Islander, American Indian (including Alaska Native), and those reporting more than one race.
[3] Socioeconomic status (SES) was measured by a composite score based on five equally weighted, standardized components: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.
NOTE: The basic unit of coursework measurement is the course credit. Course credits refer to standardized Carnegie units. Estimates are weighted by F1TRSCWT. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Figure 2. Average cumulative course credit accrual gaps between on-time graduates and 10th-grade dropouts of spring 2002 10th-graders, by academic year and sex: 2004



† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Figure 3. Average cumulative course credit accrual gaps between on-time graduates and 11th-grade dropouts of spring 2002 10th-graders, by academic year and sex: 2004

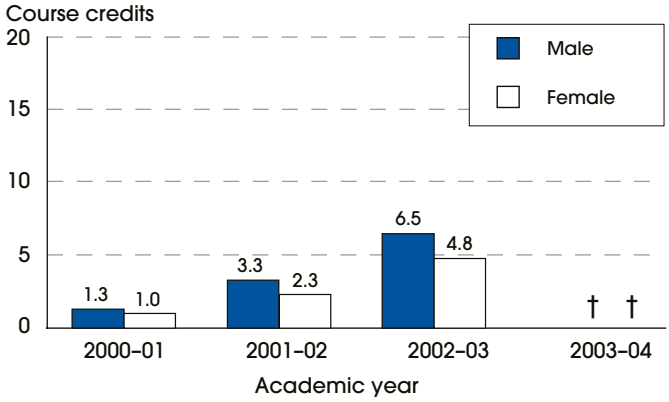


† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

credits than their dropout peers (table 5). Furthermore, for each race/ethnicity, with one exception,[13] the cumulative course credit accrual gap between on-time graduates and dropouts increased in each academic year. For Whites, the gap between on-time graduates and 12th-grade dropouts increased from 1.0 credit in 2000–01 (6.7 vs. 5.6 credits) to 2.4 credits in 2001–02 (13.4 vs. 11.1 credits) and 4.8 credits in 2002–03 (20.0 vs. 15.1 credits) (figure 5). For Blacks, the gap between on-time graduates and 12th-grade dropouts increased from 1.4 credits in 2000–01 (6.6 vs. 5.2 credits) to 3.3 credits in 2001–02 (13.2 vs. 9.9 credits) and 6.7 credits in 2002–03 (19.7 vs. 12.9 credits). For Hispanics, the gap between on-time graduates and 12th-grade dropouts increased from 1.3 credits in 2000–01 (6.4 vs. 5.2 credits) to 3.2 credits in 2001–02 (12.8 vs. 9.6 credits) and 6.6 credits in 2002–03 (19.2 vs. 12.7 credits).

[13] The gap between Hispanic on-time graduates and 11th-grade dropouts was not measurably different between academic years 2000–01 and 2001–02.

Figure 4. Average cumulative course credit accrual gaps between on-time graduates and 12th-grade dropouts of spring 2002 10th-graders, by academic year and sex: 2004



† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Differences in course credit accrual gaps were also found by race/ethnicity within academic years. For example, in 2002–03, the cumulative gap between on-time graduates and 12th-grade dropouts was larger for Blacks and Hispanics than for Whites (6.7 and 6.6 credits vs. 4.8 credits, respectively) (table 5). This indicates that Black and Hispanic 12th-grade dropouts were further behind their on-time peers than White 12th-grade dropouts were behind their on-time peers. Black and Hispanic 10th-grade dropouts were also further behind their on-time peers than were White 10th-grade dropouts in cumulative credits accrued in 2000–01 (3.4 and 4.0 credits vs. 1.3 credits, respectively).

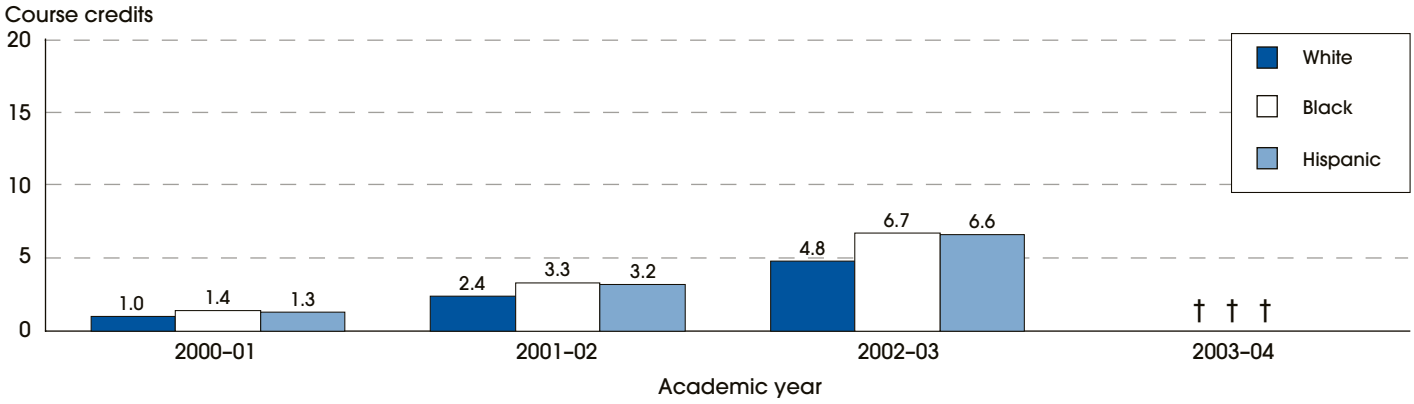
Socioeconomic status.[14] Students in the lowest socioeconomic status (SES) quartile represented 21 percent of the on-time graduate population in the 2003–04 academic year, which was lower than their representation within the 12th-, 11th-, and 10th-grade dropout populations (46, 48, and 46 percent, respectively) (table 4). Conversely, while students from the highest SES quartile represented 28 percent of the total on-time graduate population, they represented 7 percent of the 12th-grade dropout population.

By the end of the 2000–01 academic year, on-time graduates had already accumulated more course credits than 10th-, 11th-, and 12th-grade dropouts for all SES levels, with one exception (table 5).[15] For all SES levels, the cumulative course credit accrual gap between on-time graduates and 12th-grade dropouts increased in each subsequent academic year. For students in the lowest SES quartile, the gap between on-time graduates and 12th-grade dropouts increased from 1.2 credits in 2000–01 (6.5 vs. 5.3 credits) to 2.9 credits in 2001–02 (13.0 vs. 10.1 credits) and 6.0 credits in 2002–03 (19.5 vs. 13.5 credits) (figure 6). For students in the middle SES quartiles, the gap increased from 1.1 credits in 2000–01 (6.6 vs. 5.5 credits) to 2.7 credits in 2001–02

[14] Socioeconomic status (SES) was measured by a composite score based on five equally weighted, standardized components: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.

[15] The gap between on-time graduates and 11th-grade dropouts with high SES was not measurably different in academic year 2000–01.

Figure 5. Average cumulative course credit accrual gaps between on-time graduates and 12th-grade dropouts of spring 2002 10th-graders, by academic year and race/ethnicity: 2004



† Not applicable.
NOTE: Race categories exclude Hispanic origin unless specified. Black includes African American and Hispanic includes Latino.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

(13.3. vs. 10.6 credits) and 5.7 credits in 2002–03 (19.8 vs. 14.2 credits). For students in the highest SES quartile, the gap increased from 1.3 credits in 2000–01 (6.6 vs. 5.3 credits) to 2.8 credits in 2001–02 (13.4 vs. 10.5 credits) and 5.2 credits in 2002–03 (20.0 vs. 14.7 credits).

Measurable differences in cumulative course credit accrual gaps were not found between on-time graduates and 12th- or 11th-grade dropouts by SES level within academic years. Differences were detected, however, between on-time graduates and 10th-grade dropouts by SES level during the 2000-01 academic year. Specifically, the gap between on-time graduates and 10th-grade dropouts was larger for students in the lowest and middle SES quartiles (2.9 and 2.8 credits, respectively) than for students in the highest quartile (1.2 credits).

Cumulative Course Credit Accrual Gaps by Students' School Characteristics

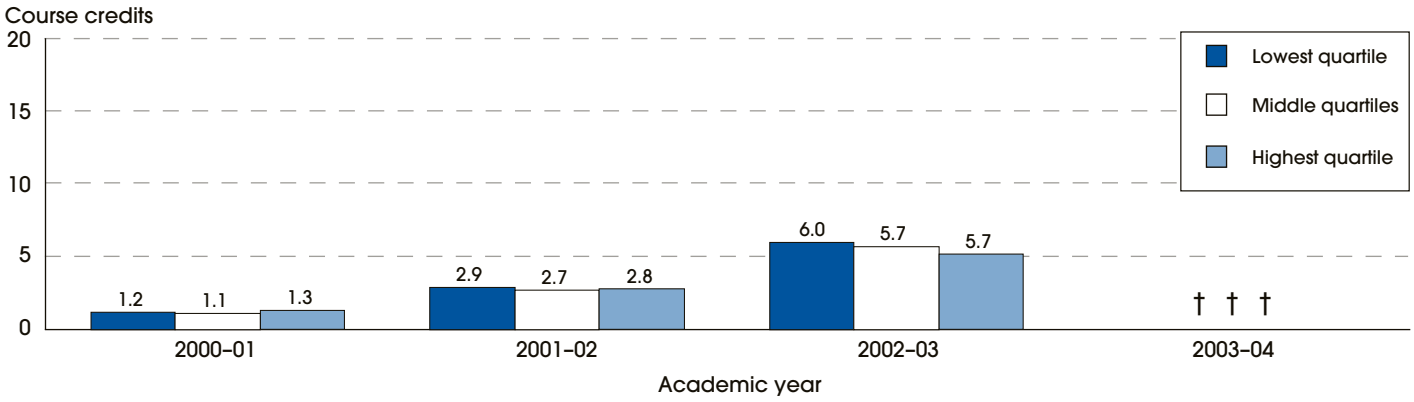
School location.[16] Students attending city high schools represented 28 percent of all on-time graduates in the 2003–04 academic year, which was lower than their representation within the 12th-, 11th-, and 10th-grade dropout populations (39, 35, and 31 percent, respectively) (table 6). Conversely, while students attending suburban high schools accounted for 36 percent of all on-time graduates, they represented a smaller percentage within each dropout level (28, 26, and 22 percent, respectively). Students attending high school in a town represented a smaller percentage of the 12th-grade dropout population than they did of the on-time graduate population (10 vs. 14 percent), and students attending a rural high school represented a larger percentage of the 11th- and 10th-grade dropout populations than they did of the on-time graduate population (24 and 33 percent vs. 22 percent, respectively).

By the end of the 2000–01 academic year, a course credit accrual gap was already present between on-time graduates and dropouts in all locations (table 7). In city and suburban high schools, the cumulative course credit accrual gap between on-time graduates and 12th-grade dropouts increased in each academic year. For example, in city high schools, the gap between on-time graduates and 12th-grade dropouts increased from 1.4 credits in 2000–01 (6.5 vs. 5.1 credits) to 3.4 credits in 2001–02 (13.1 vs. 9.7 credits) and 6.8 credits in 2002–03 (19.5 vs. 12.7 credits) (figure 7). In suburban high schools, the gap between on-time graduates and 12th-grade dropouts increased from 1.1 credits in 2000–01 (6.4 vs. 5.3 credits) to 3.1 credits in 2001–02 (13.0 vs. 9.8 credits) and 6.2 credits in 2002–03 (19.4 vs. 13.2 credits). In addition, the gap between on-time graduates and 11th-grade dropouts in city high schools increased from 3.4 credits in 2000–01 (6.5 vs. 3.2 credits) to 7.6 credits in 2001–02 (13.1 vs. 5.5 credits) (figure 8).

In town and rural high schools, the gap between on-time graduates and 12th-grade dropouts increased between 2001–02 and 2002–03 (figure 7). Specifically, the gap between on-time graduates and 12th-grade dropouts in high schools in towns increased from 1.9 credits in 2001–02 (13.5 vs. 11.6 credits) to 4.1 credits in 2002–03 (20.1 vs. 16.0 credits). Similarly, the gap between on-time graduates and 12th-grade dropouts in rural high schools increased from 2.1 credits in 2001–02 (13.8 vs. 11.7 credits) to 4.8 credits in 2002–03 (20.6 vs. 15.9 credits). In addition, the credit accrual gap between on-time graduates and 11th-grade dropouts in high schools in towns increased from 1.2 credits in 2000–01 (6.8 vs. 5.6 credits) to 3.0 credits in 2001–02 (13.5 vs. 10.5 credits) (figure 8). Between on-time graduates and 11th-grade dropouts who attended high schools in rural areas, a similar pattern emerged. The credit accrual gap increased from 1.6 credits in 2000–01 (6.9 vs. 5.2 credits) to 3.6 credits in 2001–02 (13.8 vs. 10.2 credits).

[16] Information about the student's base-year school was used to construct the school location variable. The analysis uses the 2006 definitions of locale. The "city" designation includes locales inside an urbanized area with a population less than 100,000 (small city), more than 250,000 (large city), and between 100,000 and 250,000 (midsize city). "Suburb" is assigned to locales outside a principal city but inside an urbanized area with the same large, midsize, and small breakdowns. "Towns" are locales inside an urban cluster that are outside an urbanized area and are termed fringe, distant, or remote depending on their distance from the urbanized area. Census-defined "rural" locales are broken down into fringe, distant, and remote classifications depending on their distance from either the urbanized area or the urban cluster. Further detail may be found at http://nces.ed.gov/ccd/Rural_Locales.asp#defs.

Figure 6. Average cumulative course credit accrual gaps between on-time graduates and 12th-grade dropouts of spring 2002 10th-graders, by academic year and socioeconomic status: 2004



† Not applicable.
NOTE: Socioeconomic status (SES) was measured by a composite score based on five equally weighted, standardized components: father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table 6. Percentage distribution of spring 2002 10th-graders, by high school completion status and students' school characteristics: 2004

School characteristics	On-time graduates	Dropouts		
		12th grade	11th grade	10th grade
Total	**100.0**	**100.0**	**100.0**	**100.0**
School location[1]				
City	28.3	39.3	35.0	31.0
Suburb	35.5	28.2	25.9	22.0
Town	14.4	10.3	14.6	13.8
Rural	21.7	22.2	24.5	33.2
Sophomore class size[2]				
Less than 100 sophomores	12.9	7.9	7.7	14.4
100 to 299 sophomores	33.0	25.8	28.9	24.7
300 or more sophomores	54.0	66.3	63.4	60.9

[1] Information about the students' base-year schools was used to construct the school location variable. This analysis uses the 2006 definitions of locale. Detailed definitions can be found at http://nces.ed.gov/ccd/Rural_Locales.asp#defs.
[2] Sophomore class size is the number of sophomores present in the school. Information from the students' base-year schools was used to construct the variable.
NOTE: Estimates are weighted by F1TRSCWT. Details may not sum to totals due to rounding. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Differences in course credit accrual were also found by location within academic years. For example, in 2000–01, the gap between on-time graduates and 11th-grade dropouts was larger in city high schools (3.4 credits) than in suburban, town, and rural high schools (1.6, 1.2, and 1.6 credits, respectively). Eleventh-grade dropouts attending city schools continued to be further behind their on-time peers in 2001–02 than were 11th-grade dropouts at suburban, town, and rural high schools compared to their on-time peers.

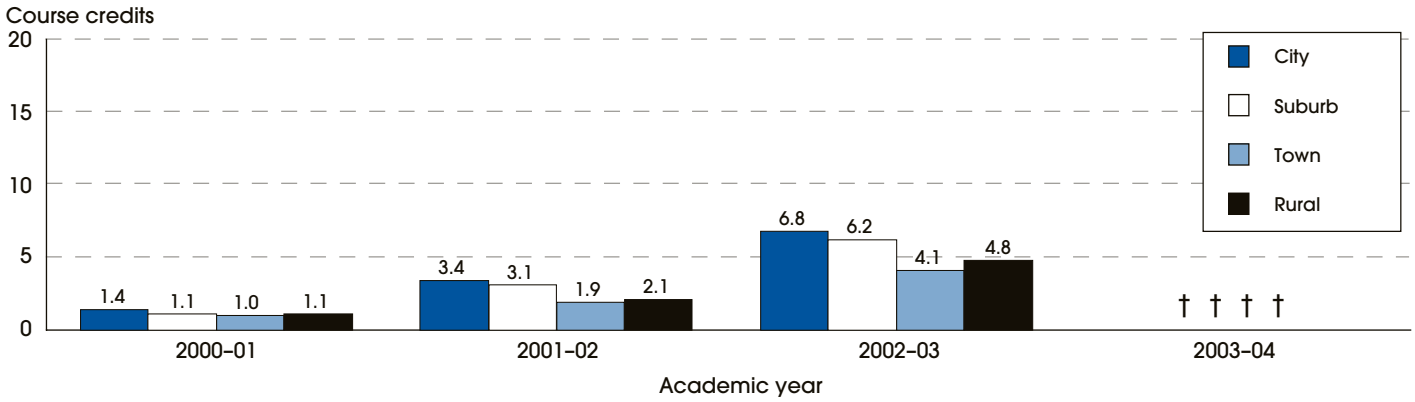
Sophomore class size. Among all on-time graduates in the 2003–04 academic year, approximately 13 percent of students attended a school with less than 100 sophomores (smaller schools) (table 6). However, 8 percent of 12th- and 11th-grade dropouts attended a smaller school.[17] Similarly, while 33 percent of the on-time graduate population attended high schools with 100 to 299 sophomores (medium schools), the percentage of 12th-, 11th-, and 10th-grade dropouts attending these schools was 26, 29, and 25 percent, respectively. Conversely, whereas 54 percent of all on-time graduates attended high schools with 300 or more sophomores (larger schools), a larger percentage of 12th-, 11th-, and 10th-grade dropouts attended schools of this size (66, 63, and 61 percent, respectively).

For students at smaller, medium, and larger schools, on-time graduates had accrued more course credits than 12th-, 11th-, or 10th-grade dropouts by the end of the 2000–01 academic year. Furthermore, for students at smaller, medium, and larger schools, with two exceptions,[18] the cumulative course credit accrual gap between on-time graduates and dropouts increased in each academic year (table 7). For example, the gap between on-time graduates and 12th-grade dropouts at medium schools was 0.9 credit at the end of 2000–01 (6.8 vs. 6.0 credits) (figure 9). The gap increased to 2.1 credits by the end of the following year (13.7 vs. 11.6 credits) and 5.2 credits by the end of 2002–03 (20.5 vs. 15.3 credits). Similarly, the gap between on-time graduates and 12th-grade dropouts at larger schools increased from 1.3 credits in 2000–01 (6.4 vs. 5.1 credits) to 3.3 credits in 2001–02 (12.9 vs. 9.6 credits) and 6.2 credits in 2002–03 (19.3 vs. 13.1 credits). For students attending smaller schools, the gap between on-time graduates and 12th-grade dropouts increased from 1.4 credits in 2001–02 (13.5 vs. 12.1 credits) to 4.5 credits in 2002–03 (20.1 vs. 15.7 credits). No measurable differences were detected in course credit accrual gaps by sophomore class size within academic years, with two exceptions: the gap between on-time graduates and 12th-grade dropouts in 2001–02 was smaller among students at smaller schools (1.4 credits) and among students at medium schools (2.1 credits) than among students at larger schools (3.3 credits).

[17] In contrast, the percentage of 10th-grade dropouts who attended smaller schools was approximately 1 percent larger than the percentage of on-time graduates attending the same size school (14 vs. 13 percent).

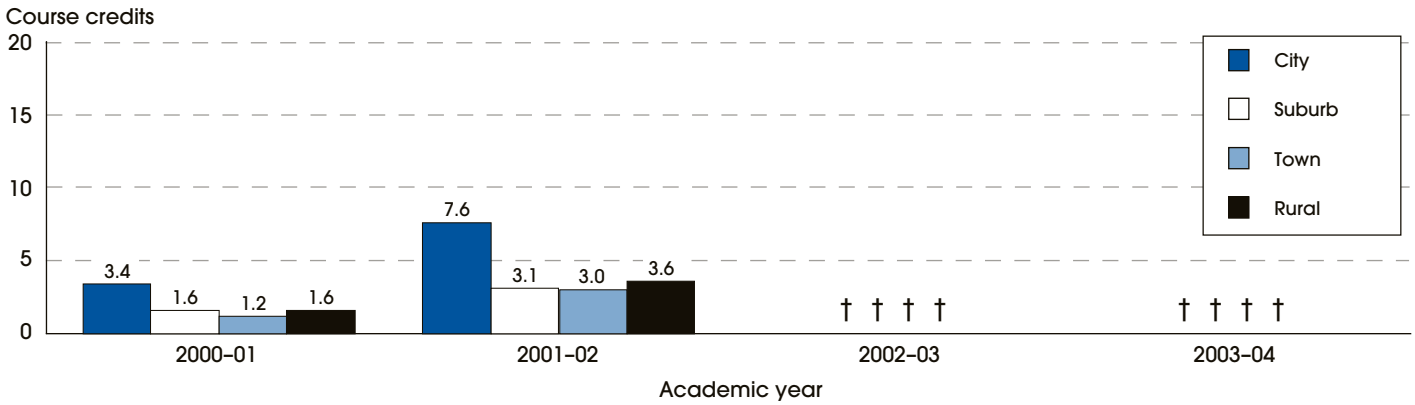
[18] The credit accrual gap between on-time graduates and 12th-grade dropouts at smaller schools was not measurably different between academic years 2000–01 and 2001–02. In addition, the gap between on-time graduates and 11th-grade dropouts at smaller schools was not measurably different between academic years 2000–01 and 2001–02.

Figure 7. Average cumulative course credit accrual gaps between on-time graduates and 12th-grade dropouts of spring 2002 10th-graders, by academic year and school location: 2004



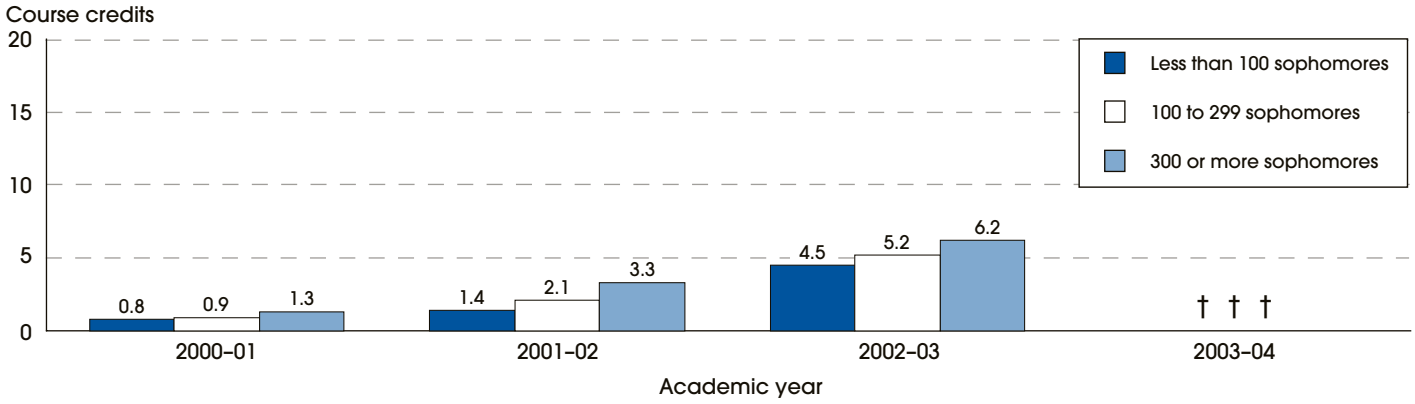
† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Figure 8. Average cumulative course credit accrual gaps between on-time graduates and 11th-grade dropouts of spring 2002 10th-graders, by academic year and school location: 2004



† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Figure 9. Average cumulative course credit accrual gaps between on-time graduates and 12th-grade dropouts of spring 2002 10th-graders, by academic year and sophomore class size: 2004



† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table 7. Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status and students' school characteristics: 2004

High school completion status and student characteristics	Academic year			
	2000–01	2001–02	2002–03	2003–04
School location[1]				
City				
On-time graduate	6.5	13.1	19.5	25.3
12th-grade dropout	5.1	9.7	12.7	14.1 [2]
11th-grade dropout	3.2	5.5	6.2 [2]	†
10th-grade dropout	3.8	6.3 [2]	†	†
Suburb				
On-time graduate	6.4	13.0	19.4	25.4
12th-grade dropout	5.3	9.8	13.2	14.5 [2]
11th-grade dropout	4.8	9.9	11.8 [2]	†
10th-grade dropout	3.7	7.6 [2]	†	†
Town				
On-time graduate	6.8	13.5	20.1	26.1
12th-grade dropout	5.8	11.6	16.0	17.2 [2]
11th-grade dropout	5.6	10.5	12.1 [2]	†
10th-grade dropout	3.6	6.4 [2]	†	†
Rural				
On-time graduate	6.9	13.8	20.6	26.7
12th-grade dropout	5.8	11.7	15.9	17.1 [2]
11th-grade dropout	5.2	10.2	11.2 [2]	†
10th-grade dropout	4.1	8.1 [2]	†	†
Sophomore class size[3]				
Less than 100 sophomores				
On-time graduate	6.7	13.5	20.1	26.3
12th-grade dropout	5.9	12.1	15.7	17.2 [2]
11th-grade dropout	4.8	9.7	10.7 [2]	†
10th-grade dropout	3.0	6.4 [2]	†	†
100 to 299 sophomores				
On-time graduate	6.8	13.7	20.5	26.6
12th-grade dropout	6.0	11.6	15.3	16.5 [2]
11th-grade dropout	5.2	9.9	11.3 [2]	†
10th-grade dropout	5.1	9.2 [2]	†	†
300 or more sophomores				
On-time graduate	6.4	12.9	19.3	25.1
12th-grade dropout	5.1	9.6	13.1	14.4 [2]
11th-grade dropout	4.1	7.7	8.9 [2]	†
10th-grade dropout	3.6	6.5 [2]	†	†

† Not applicable.
[1] Information about the students' base-year school was used to construct the school location variable. This analysis uses the 2006 definitions of locale. Detailed definitions can be found at http://nces.ed.gov/ccd/Rural_Locales.asp#defs.
[2] The final year of observed enrollment is one in which the student earned course credits but was not necessarily enrolled for the entire year.
[3] Sophomore class size is the number of sophomores present in the school. Information from the students' base-year schools was used to construct the variable.
NOTE: The basic unit of coursework measurement is the course credit. Course credits refer to standardized Carnegie units. Estimates are weighted by F1TRSCWT. Standard errors can be found in Appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Summary

Approximately 82 percent of students who were 10th-graders in the spring of 2002 graduated from high school on time (i.e., by August 2004). Five percent of spring 2002 10th-graders did not finish on time (3 percent dropped out in 12th grade, 1 percent dropped out in 11th grade, and less than 1 percent dropped out in 10th grade). The remaining 14 percent of sophomores in the spring of 2002 (not discussed in this report) include 1 percent of students who graduated prior to the 2003–04 academic year, 2 percent who were still enrolled as of August 2004, 9 percent who did not have a known transfer or exit status or graduation date, and 1 percent who were included in the "other status" category.

Findings from this analysis indicate that on-time graduates and dropouts accrued different numbers of course credits by the end of the 2000–01 academic year (the year before the sophomore cohort was surveyed). High school dropouts earned fewer credits than did on-time graduates within each academic year, and the cumulative course credit accrual gap increased with each subsequent year. Differences were also observed in the course credit accrual of dropouts and on-time graduates in selected subjects (English, mathematics, and science), with dropouts earning fewer credits in these subjects than on-time graduates within each academic year.

The pattern of dropouts earning fewer credits than on-time graduates remained true across all student and school

characteristics. However, the size of the cumulative course credit accrual gap between on-time graduates and dropouts varied within academic years for males versus females, Blacks and Hispanics versus Whites, and students attending city high schools versus students attending suburban, town, and rural high schools.

Methodology and Technical Notes

Overview of ELS:2002

The base year of ELS:2002 was the first stage of a major effort designed to provide data about the critical transitions that students experience as they proceed through high school and into postsecondary education or careers. The 2002 sophomore cohort was resurveyed in 2004. Transcript information was collected in late 2004 and early 2005.

For complete information on ELS:2002 methodology, please see *Education Longitudinal Study of 2002: Base Year Data File User's Manual* (Ingels et al. 2004), *Education Longitudinal Study of 2002: Base-Year to First Follow-up Data File Documentation* (Ingels et al. 2005), and *Education Longitudinal Study of 2002: First Follow-up Transcript Component Data File Documentation* (Bozick et al. 2006).

Base-Year, First Follow-Up, and Transcript Study Design and Response Rates

Base-year study design. ELS:2002 was conducted using a national probability sample of about 1,220 eligible public, Catholic, and other private schools in the spring term of the 2001–02 school year, and a sample of 17,590 eligible selected sophomores.

Base-year study response rates. Of 1,220 eligible contacted schools, approximately 750 participated in the study, for an overall weighted school participation rate of approximately 68 percent. Of 17,590 selected eligible students, 15,360 participated, for a weighted student response rate of approximately 87 percent. (School and student weighted response rates reflect use of the design or base weights and do not include nonresponse adjustments.) School and student unit nonresponse bias analyses were performed, as well as an item nonresponse bias analysis for the questionnaires. The school-level bias due to nonresponse, using the design or base weights, was estimated based on the data collected from both respondents and nonrespondents and sampling frame data. Information on potential sources of bias informed the development of the nonresponse adjustments to the weights.

First follow-up study design. In the first follow-up, conducted in 2004, base-year students were surveyed, whether in the base-year school, in a new school, or out of school.

First follow-up response rates. First follow-up weighted response rates are reported at the student level only (the school sample was not strictly representative of the nation's high schools with a 12th grade in 2003–04). The overall weighted response rate was 89 percent.

Transcript study design. Information about coursetaking (covering all years of high school and including the sequence in which courses were taken and grades earned) was collected at the end of high school, through a high school transcript study. The ELS:2002 transcripts were collected from sample members in late 2004 and early 2005, about 6 months to 1 year after most students had graduated from high school. Collecting the transcripts in the 2004–05 academic year allowed more complete high school records to be obtained. Transcripts were collected from the students' base-year school (which was the only school for most sample members) or from their last school of attendance (if it was learned during the first follow-up data collection that they had transferred). Because ELS:2002 requests transcripts and related information for transfer students from their second school, this study is able to offer extensive information on multiple school attendance and, therefore, increased accuracy of enrollment histories. Incomplete records were obtained for sample members who had dropped out of school, had fallen behind the modal progression sequence, or were enrolled in a special education program requiring, or allowing, more than 12 years of schooling. For base-year students, transcripts were collected for regular graduates, dropouts, early graduates, and students who were homeschooled after their sophomore year.

Transcript study response rates. The unweighted participation rate for base-year and transfer schools was 79 percent. The base-year school weighted response rate was 95 percent. The course offerings response rate for base-year schools was 88 percent. Some transcript information is available for 91 percent of the entire student sample.

The ELS:2002 high school transcript study collected key pieces of information about coursetaking from the student's official high school record, including courses taken while attending secondary school, credits earned, the year and term in which a specific course was taken, and final grades. When available, other information was collected, including dates enrolled, reasons for leaving school, and standardized test scores. Once collected, information was transcribed and can be linked back to the student's questionnaire or assessment data. Due to the size and complexity of the file, and because of reporting variations by school, additional variables were constructed from the raw transcript file. These composite variables include standardized grade point average (GPA), high school academic program, total credits earned by subject, and others. Further details on the instrumentation, sample design, results from data collection, data processing, weighting and imputation, and data files available for analysis may be found in the *Education Longitudinal Study of 2002: First Follow-up Transcript Component Data File Documentation* (Bozick et al. 2006).

Quality of Estimates: Reliability and Validity of ELS:2002 Data

The transcript items used in this report are based on the student-level file. This file contains a record for each of the sample members for whom a transcript was collected and who met the criteria to be considered a transcript respondent. These criteria are as follows:

1. The sample member had at least one transcript sent from one of his or her schools; and
2. The sample member had at least one complete course record for at least one grade (9th, 10th, 11th, or

12th). A complete course record was defined as having nonmissing information for all of the following five variables for at least one course:

- F1CCRSE—Course title;
- F1CYEAR—School year in which course was taken;
- F1CGRLEV—Grade level in which course was taken;
- F1CCRED—School-assigned course credit; and
- F1CGRADE—Standardized course grade.

If sample members met the first criterion, but not the second, their transcripts were examined in more detail. If enough valuable information about courses (e.g., titles, terms, credits, or grades) was present and judged usable, the sample member was considered a respondent.

Analysts should recognize and understand a key limitation of the transcript data. Fourteen percent of transcript respondents do not have 4 complete years of high school transcript information. This occurs when the data are missing. Missing transcript information may result from unit nonresponse from the school, an inability to obtain multiple transcripts for certain transfer students, or school recordkeeping errors or inconsistencies. In this case, the student *should* have 4 years of data, but for one reason or another it was not reported. Missing data may also lead to fewer than 4 years of data because the student is a dropout, an early graduate, or homeschooled. In this case, the student *should not* have 4 years of data. The information is complete in the sense that it captures the student's entire high school experience. Since many variables are constructed under the assumption of having 4 years of data (e.g., total credits earned, overall high school GPA), recognizing this limitation is crucial to making accurate inferences from statistical analyses.

Survey Standard Errors

Because the ELS:2002 sample design involved stratification, disproportionate sampling of certain strata, and clustered (i.e., multistage) probability sampling, the resulting statistics are more variable than they would have been if they had been based on data from a simple random sample of the same size.

Calculating exact standard errors for survey estimates can be difficult. Several procedures are available for calculating precise estimates of sampling errors for complex samples. Procedures such as Taylor Series approximations, Balanced Repeated Replication (BRR), and Jackknife Repeated Replication (JRR)—which can be found in advanced statistical programs such as SUDAAN, AM, or WESVAR—produce similar results. The ELS:2002 analyses included in this report used SUDAAN and the Taylor Series procedure to calculate standard errors.

Statistical Tests

Comparisons drawn in the text of this report have been tested for statistical significance at the .05 level using *t* statistics to ensure that the differences are larger than those that might be expected because of sampling variation.

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Appendix A. Standard Error Tables

Table A–1. Standard errors for Table 1: Percentage distribution of spring 2002 10th-graders, by high school completion status: 2004

High school completion status	Standard error
Total	†
On-time graduates	0.80
Early graduates	0.15
Dropouts	0.26
12th grade	0.20
11th grade	0.12
10th grade	0.06
Nongraduates	0.15
Graduated, date unknown	0.26
Other status	0.14
Transfer or exit status or date left unknown	0.61

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–2. Standard errors for Table 2: Average course credits earned by spring 2002 10th-graders, by subject, academic year, and high school completion status: 2004

High school completion status	Credits earned, by academic year											
	English				Mathematics				Science			
	2000–01	2001–02	2002–03	2003–04	2000–01	2001–02	2002–03	2003–04	2000–01	2001–02	2002–03	2003–04
Total	**0.009**	**0.008**	**0.008**	**0.009**	**0.010**	**0.007**	**0.007**	**0.009**	**0.009**	**0.008**	**0.008**	**0.010**
On-time graduates	0.010	0.008	0.008	0.010	0.011	0.007	0.007	0.010	0.009	0.008	0.008	0.011
Dropouts	0.031	0.030	0.028	0.020	0.031	0.028	0.025	0.012	0.029	0.029	0.024	0.014
12th grade	0.041	0.035	0.033	0.027	0.034	0.035	0.030	0.016	0.033	0.035	0.033	0.020
11th grade	0.072	0.070	0.039	†	0.056	0.051	0.032	†	0.060	0.057	0.031	†
10th grade	0.086	0.092	†	†	0.093	0.081	†	†	0.076	0.071	†	†
Nongraduates	0.046	0.044	0.049	0.055	0.050	0.047	0.050	0.050	0.041	0.045	0.047	0.052

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–3. Standard errors for Table 3: Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status: 2004

High school completion status	Academic year			
	2000-01	2001–02	2002–03	2003–04
Total	**0.04**	**0.07**	**0.09**	**0.12**
On-time graduates	0.04	0.06	0.08	0.10
Dropouts	0.14	0.25	0.32	0.36
12th grade	0.14	0.24	0.30	0.32
11th grade	0.36	0.65	0.77	†
10th grade	0.31	0.56	†	†
Nongraduates	0.18	0.30	0.43	0.48

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–4. Standard errors for Table 4: Percentage distribution of spring 2002 10th-graders, by high school completion status and student characteristics: 2004

Student characteristics	On-time graduates	Dropouts		
		12th grade	11th grade	10th grade
Total	†	†	†	†
Sex				
Male	0.61	2.61	4.57	6.52
Female	0.61	2.61	4.57	6.52
Race/ethnicity				
White	1.05	2.92	5.61	8.02
Black	0.67	2.65	4.41	8.63
Hispanic	0.83	3.07	6.55	6.56
Other	0.47	1.43	2.02	†
Socioeconomic status				
Lowest quartile	0.68	3.11	5.62	7.22
Middle quartiles	0.70	3.04	5.56	7.79
Highest quartile	0.83	1.44	0.97	4.47

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–5. Standard errors for Table 5: Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status, sex, race/ethnicity, and socioeconomic status: 2004

High school completion status and student characteristics	Academic year			
	2000–01	2001–02	2002–03	2003–04
Sex				
Male				
On-time graduate	0.05	0.07	0.09	0.11
12th-grade dropout	0.17	0.29	0.36	0.41
11th-grade dropout	0.44	0.83	1.00	†
10th-grade dropout	0.39	0.70	†	†
Female				
On-time graduate	0.04	0.07	0.08	0.11
12th-grade dropout	0.19	0.33	0.44	0.48
11th-grade dropout	0.36	0.59	0.73	†
10th-grade dropout	0.49	0.95	†	†
Race/ethnicity				
White				
On-time graduate	0.05	0.08	0.10	0.12
12th-grade dropout	0.19	0.30	0.40	0.45
11th-grade dropout	0.40	0.69	0.81	†
10th-grade dropout	0.37	0.69	†	†
Black				
On-time graduate	0.07	0.11	0.16	0.21
12th-grade dropout	0.26	0.47	0.70	0.75
11th-grade dropout	0.44	0.95	1.23	†
10th-grade dropout	0.49	0.78	†	†
Hispanic				
On-time graduate	0.06	0.12	0.17	0.21
12th-grade dropout	0.30	0.48	0.55	0.64
11th-grade dropout	0.94	1.62	1.88	†
10th-grade dropout	0.55	0.93	†	†
Other				
On-time graduate	0.08	0.11	0.15	0.17
12th-grade dropout	0.29	0.52	0.72	0.80
11th-grade dropout	0.54	0.77	1.03	†
10th-grade dropout	†	†	†	†
Socioeconomic status				
Lowest quartile				
On-time graduate	0.05	0.09	0.11	0.15
12th-grade dropout	0.19	0.33	0.43	0.49
11th-grade dropout	0.64	1.15	1.33	†
10th-grade dropout	0.48	0.75	†	†
Middle quartiles				
On-time graduate	0.05	0.07	0.09	0.12
12th-grade dropout	0.19	0.34	0.44	0.47
11th-grade dropout	0.35	0.63	0.76	†
10th-grade dropout	0.45	0.80	†	†
Highest quartiles				
On-time graduate	0.06	0.08	0.10	0.13
12th-grade dropout	0.47	0.62	0.89	1.02
11th-grade dropout	1.33	2.34	2.90	†
10th-grade dropout	0.52	1.26	†	†

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–6. Standard errors for Table 6: Percentage distribution of spring 2002 10th-graders, by high school completion status and students' school characteristics: 2004

School characteristics	On-time graduates	Dropouts		
		12th grade	11th grade	10th grade
Total	†	†	†	†
School location				
City	0.07	0.22	0.67	0.58
Suburb	0.09	0.25	0.46	0.83
Town	0.12	0.35	0.31	0.72
Rural	0.07	0.28	0.40	0.46
Sophomore class size				
Less than 100 sophomores	0.09	0.37	0.65	0.61
100 to 299 sophomores	0.06	0.30	0.40	0.54
300 or more sophomores	0.07	0.16	0.49	0.40

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

Table A–7. Standard errors for Table 7: Average cumulative course credits accrued by spring 2002 10th-graders, by academic year and high school completion status and students' school characteristics: 2004

High school completion status and student characteristics	Academic year			
	2000–01	2001–02	2002–03	2003–04
School location				
City				
On-time graduate	0.07	0.11	0.16	0.21
12th-grade dropout	0.22	0.39	0.47	0.51
11th-grade dropout	0.67	1.06	1.22	†
10th-grade dropout	0.58	0.71	†	†
Suburb				
On-time graduate	0.09	0.12	0.15	0.18
12th-grade dropout	0.25	0.40	0.53	0.62
11th-grade dropout	0.46	0.73	0.89	†
10th-grade dropout	0.83	1.59	†	†
Town				
On-time graduate	0.12	0.16	0.21	0.26
12th-grade dropout	0.35	0.55	0.79	0.83
11th-grade dropout	0.31	0.59	0.88	†
10th-grade dropout	0.72	1.32	†	†
Rural				
On-time graduate	0.07	0.12	0.16	0.20
12th-grade dropout	0.28	0.48	0.57	0.61
11th-grade dropout	0.40	0.65	0.81	†
10th-grade dropout	0.46	0.98	†	†
Sophomore class size				
Less than 100 sophomores				
On-time graduate	0.09	0.15	0.20	0.26
12th-grade dropout	0.37	0.70	0.96	1.10
11th-grade dropout	0.65	1.28	1.54	†
10th-grade dropout	0.61	0.98	†	†
100 to 299 sophomores				
On-time graduate	0.06	0.09	0.13	0.17
12th-grade dropout	0.30	0.44	0.56	0.62
11th-grade dropout	0.40	0.75	0.92	†
10th-grade dropout	0.54	0.98	†	†
300 or more sophomores				
On-time graduate	0.07	0.09	0.12	0.16
12th-grade dropout	0.16	0.29	0.37	0.40
11th-grade dropout	0.49	0.87	1.04	†
10th-grade dropout	0.40	0.72	†	†

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Longitudinal Study of 2002 (ELS:2002), "High School Transcript Study, 2004."

For more information on the Education Longitudinal Study of 2002 (ELS:2002), visit http://nces.ed.gov/surveys/els2002. To order additional copies of this Statistics in Brief or other NCES publications, call 1-877-4ED-PUBS or visit http://www.edpubs.org. NCES publications are also available on the Internet at http://nces.ed.gov.

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