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NCES 2007-018

Course Credit Accrual and Dropping Out of High School

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 status (Allensworth and Easton 2005). This Issue Brief contributes to the research by using a nationally representative sample of 10th-graders in public and private schools in the spring 2002 to examine the timing of dropping out and its relationship to the number of credits earned¹ by high school students. In this study, differences in the average number of course credits earned between high school graduates and dropouts, both within and accumulated across academic years, are examined in order to describe enrollment and completion behavior of high school graduates and dropouts. Differences in course credit accrual by selected subjects (English, mathematics, and science) are also reported.

Comparisons in course credit accrual and cumulative course credits earned between students who dropped out at any point from spring 2002 to August 2004 and those who graduated on time (within 4 years of starting high school) are the primary focus of this analysis.² Data for this study 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 enrollment histories, graduation dates, and coursetaking patterns.

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).³ Tenth-graders in spring 2002 who completed high school by August 2004 are defined as *on-time graduates*.

Course Credits Earned by High School Status

As shown in table 1, some 82 percent of students who were 10th-graders in the spring of 2002 graduated from high school

on time. In contrast, 5 percent left school without earning a high school diploma or alternative credential. Two percent were still enrolled without a formal award as of August 2004 (nongraduates), and the remaining 12 percent graduated early (before the 2003–04 academic year) or received an alternative diploma, such as a General Educational Development (GED) certificate or certificate of attendance.^{4,5}

Overall spring 2002 10th-graders earned, on average, 6.4 course credits in both the 2000–01 and 2001–02 academic years (9th and 10th grades, respectively, for on-time students). The average number of course credits earned by these students decreased over the subsequent 2 academic years due, in part, to 11th- and 12th-grade dropouts earning fewer credits.^{6,7}

On-time graduates earned more course credits than did high school dropouts within each academic year. For example, on-time graduates earned, on average, 6.6 credits in the 2000–01 academic year, while dropouts earned, on average, 5.1 credits; 12th-grade dropouts earned 5.4 credits, 11th-grade dropouts earned 4.4 credits, and 10th-grade dropouts earned 3.9 credits. The same pattern—on-time graduates earning more credits than dropouts earned—was observed in the 2001–02, 2002–03, and 2003–04 academic years.

Within-year differences in course credits earned were also observed among dropouts. For example, in the 2000–01 and 2001–02 academic years, 12th-grade dropouts earned more credits than did 11th- and 10th-grade dropouts. Additionally, in the 2002–03 academic year (11th grade for on-time students), 12th-grade dropouts earned more credits than did 11th-grade dropouts (3.5 vs. 1.2 credits).

High school dropouts also 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 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.

Table 1. Average course credits earned by spring 2002 10th-graders by academic year and high school status: 2004

High school status	Percentage distribution	Course credits earned					
		Total, all academic years	Academic year				
			2000-01	2001-02	2002-03	2003-04	
Total¹	100.0	24.4	6.4	6.4	6.1	5.4	
On-time graduates	81.6	25.8	6.6	6.7	6.5	6.0	
Dropouts	4.6	13.3	5.1	4.6	2.7	0.9	
12th grade	3.2	15.2	5.4	5.0	3.5	1.3	
11th grade	1.0	9.7	4.4	4.1	1.2	†	
10th grade	0.4	7.2	3.9	3.3	†	†	
Nongraduates ²	1.7	20.7	5.8	5.4	4.9	4.6	

† Not applicable.

¹ Students who graduated early (before the 2003-04 academic year) or received an alternative credential, such as a General Educational Development (GED) certificate or certificate of attendance are included in the total but not reported separately.

² 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 earned zero course credits, and these values are included in the estimations of average course credit earned for all dropouts. Standard errors can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007018>.

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

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

High school	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
Total¹	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	0.79	0.67	0.43	0.12	0.67	0.67	0.37	0.12
11th grade	0.80	0.60	0.18	†	0.59	0.57	0.13	†	0.56	0.42	0.10	†
10th grade	0.67	0.62	†	†	0.43	0.48	†	†	0.43	0.33	†	†
Nongraduates ²	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 (before the 2003-04 academic year) or received an alternative credential, such as a General Educational Development (GED) certificate or certificate of attendance are included in the total but not reported separately.

² 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 earned zero course credits, and these values are included in the estimations of average course credit earned for all dropouts. Standard errors can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007018>.

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

Course Credit Accrual Gaps and Timing of Dropping Out

As shown in figure 1, the disparity in the cumulative number of course credits accrued by on-time graduates and dropouts grew more pronounced over time. The gap in credits accumulated between on-time graduates and 12th-grade dropouts in the 2000-01 academic year, 1.2 credits, increased to 2.9 credits by the end of the 2001-02 academic year and 5.9 credits accrued by 2002-03. By the 2003-04 academic year, the last year of observed enrollment for 12th-grade dropouts, the cumulative credit gap between on-time graduates and 12th-grade dropouts was 10.6 credits.

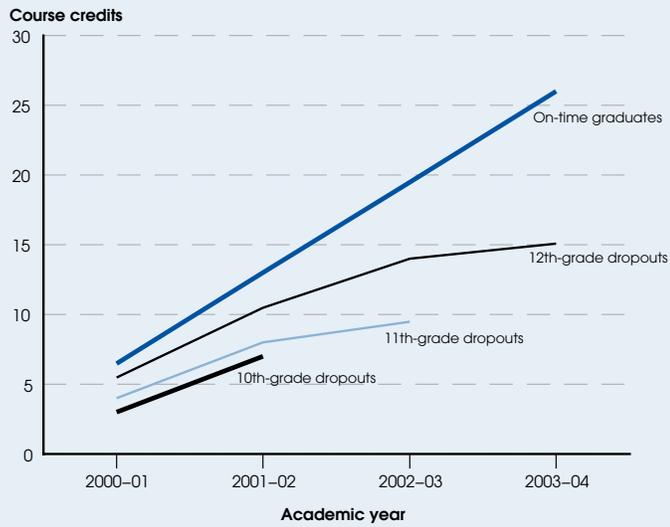
Between the 2001-02 and 2002-03 academic years, a similar increase was observed in the cumulative credit gap between 11th- and 12th-grade dropouts. The gap increased from 1.9 credits in the 2001-02 academic year to 4.2 credits by the end of the 2002-03 academic year, the last year of observed enrollment for 11th-grade dropouts.

Summary

The findings from the analysis indicate that high school dropouts earn fewer credits than do on-time graduates within each academic year, and the gap in course credits accrued between dropouts and on-time graduates increased across academic years. Differences were also observed in the course credit accrual of dropouts and on-time graduates by selected subjects (e.g., mathematics, science, and English). Lastly, the gap in the cumulative number of course credits accrued between on-time graduates and dropouts grew more pronounced over time, and the disparity in cumulative course credits was most evident in the final academic year in which they earned any course credits.

The current analysis is limited in a number of ways. First, students who left high school prior to spring 2002 or were retained in the 9th grade were not part of the sample to be analyzed. Also, the high school transcripts collected in 2004 as part of the ELS:2002 first follow up do not include data on the reasons why dropouts fall behind on-time completers in credit accrual.

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



References

- Allensworth, E.M., and Easton, J.Q. (2005). *The On-Track Indicator as a Predictor of High School Graduation*. Chicago: Consortium on Chicago School Research. Retrieved September 8, 2006, from http://ccsr.uchicago.edu/content/publications.php?pub_id=10.
- Planty, M., Bozick, R., and Ingels, S.J. (2006). *Academic Pathways, Preparation, and Performance—A Descriptive Overview of the Transcripts From the High School Graduating Class of 2003–04* (NCES 2007-316). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Endnotes

- ¹ The basic unit of coursework measurement is the course credit. Course credits refer to standardized Carnegie units.
- ² 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 by this analysis. Also, the graduation period for spring 2002 10th-graders in ELS:2002 extended from fall 2003 through summer 2004.

³ The grade of dropout is determined solely by the academic year in which the student dropped out and not by the student's actual grade level. 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 an 11th-grade dropout.

⁴ The 12 percent of students who either graduated before the 2003–04 academic year or received an alternative diploma are not discussed in this report.

⁵ These estimates may differ from other measures of student progress and persistence. General differences can be found in the population being studied, definition of outcomes, information source, and data collection timeframe. For example, the averaged freshman graduation rate (AFGR) estimates the size of an incoming freshman class by summing the enrollment in 8th grade for 1 year, 9th grade for the next year, and 10th grade for the year after and then dividing by 3. This averaging is intended to account for higher grade retentions in the 9th grade. It should be noted, that the AFGR applies to public school students only while this brief includes students in private school as well. The AFGR nationwide was 73.9 percent in the 2003–04 school year, the last year for which complete data are available (see <http://nces.ed.gov/pubs2006/dropout/06.asp>). The population being studied for the analysis in this brief is the sophomore class (10th grade) of 2002 in 2004. Given such differences, one would not expect to see identical or even similar estimates between different measures of student persistence and progress.

⁶ The decline in credits earned over time by dropouts may also be due in part to a decrease in the number of credits attempted or an increase in the number of courses failed. However, a limitation of the ELS:2002 transcript data is that failed or attempted courses are not reported in a consistent manner by all schools.

⁷ Students who dropped out were retained in the calculation of average course credits earned during the academic year.

The Issue Brief series presents information on education topics of current interest. All estimates shown are based on samples and are subject to sampling variability. All differences discussed are statistically significant at the .05 level as measured by two-tailed student's *t* tests; this means a difference is discussed only if the probability that it is due to chance (i.e., sampling variability) is less than 1 in 20. No adjustments were made for multiple comparisons. In the design, conduct, and data processing of National Center for Education Statistics (NCES) surveys, efforts are made to minimize the effects of nonsampling errors, such as item nonresponse, measurement error, data processing error, or other systematic error. For more information on the Education Longitudinal Study of 2002 (ELS:2002), visit <http://nces.ed.gov/surveys/els2002>.

This Issue Brief was prepared by the following staff at the Education Statistics Services Institute (ESSI)—which is funded by NCES and composed of staff from the American Institutes for Research (AIR) and a number of partner organizations—Gillian Hampden-Thompson (AIR), Gregory Kienzl (AIR), Bruce Daniel (KForce) and Akemi Kinukawa (Child Trends). This Issue Brief was desktopped by Michael Stock of MacroSys Research and Technology of ESSI. For further information, contact Edith McArthur, NCES, at 202-502-7393 or edith.mcarthur@ed.gov. To order additional copies of this Issue 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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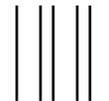
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Table A1. Standard errors for Table 1: Average course credits earned by spring 2002 10th-graders, by academic year and high school status: 2004

High school status	Percentage distribution	Course credits earned				
		Total, all academic years	Academic year			
			2000-01	2001-02	2002-03	2003-04
Total	†	0.12	0.04	0.03	0.03	0.04
On-time graduates	0.80	0.10	0.04	0.03	0.03	0.04
Dropouts	0.26	0.36	0.14	0.14	0.14	0.09
12th grade	0.20	0.32	0.14	0.14	0.15	0.11
11th grade	0.12	0.77	0.36	0.34	0.21	†
10th grade	0.06	0.56	0.31	0.37	†	†
Nongraduates	0.15	0.48	0.18	0.18	0.22	0.26

† 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 A2. Standard errors for Table 2: Average course credits earned by spring 2002 10th-graders, by subject, academic year, and high school status: 2004

High school 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	0.014
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."