

Early Postsecondary Education and Work Outcome Differences by High School Credential Type

STATS IN BRIEF
September 2022

NCES 2022-053
U.S. DEPARTMENT OF EDUCATION

A Publication of the National Center for Education Statistics at IES

AUTHORS

Elise Christopher
National Center for Education Statistics

Bruce Daniel
Sanametrix, Inc.

Statistics in Brief publications describe key findings from statistical tables to provide useful information to a broad audience, including members of the general public. They address simple and topical issues and questions. They do not investigate more complex hypotheses, account for interrelationships among

variables, or support causal inferences. We encourage readers who are interested in more complex questions and in-depth analysis to explore other NCES resources, including publications, online data tools, and public- and restricted-use datasets. See nces.ed.gov and references noted in the body of this document for more information.

The purpose of this report is to understand patterns of young adult work and postsecondary enrollment by high school completion type. These analyses update and expand upon prior analyses on educational and labor force outcomes of high school dropouts and stopouts from an earlier study—the National Education Longitudinal Study of 1988 (NELS:88) (Hurst et al. 2004; Kienzl and Kena 2006). In earlier NELS:88 findings, 21 percent of 1988 8th-graders were found to have ever dropped out of high school (Berkthold et al. 1998). Of these, 63 percent were found to have completed high school credentials by the last round of data collection in 2000. This report extends the NELS:88 analyses by probing the differences in education and labor force outcomes between high school credential types in the most recent NCES longitudinal cohort study, the High School Longitudinal Study of 2009 (HSLs:09). As with the NELS:88 cohort, many 2009 ninth-graders who dropped out of high school completed some form of high school credentials by 2016.

This topic continues to be important because, while dropout rates in the US have been on the decline in recent years (Irwin et al. 2022), many students still drop or stop out of high school on their path to early adulthood. Students who leave high school without finishing and do not return are termed dropouts. Those who do return are called stopouts. Dropping and stopping out of high school are still issues of major concern because the lack of a high school diploma or equivalency limits economic options for young adults. This is because a diploma or equivalency credential such as the GED¹ is often required for admission to postsecondary education and leads to higher-paying jobs as well as more job security (BLS 2020).

The issues analyzed in this report are also important because the path to a high school credential is not straightforward for many students: there are many types of high school credentials, some of which are typically earned by students who

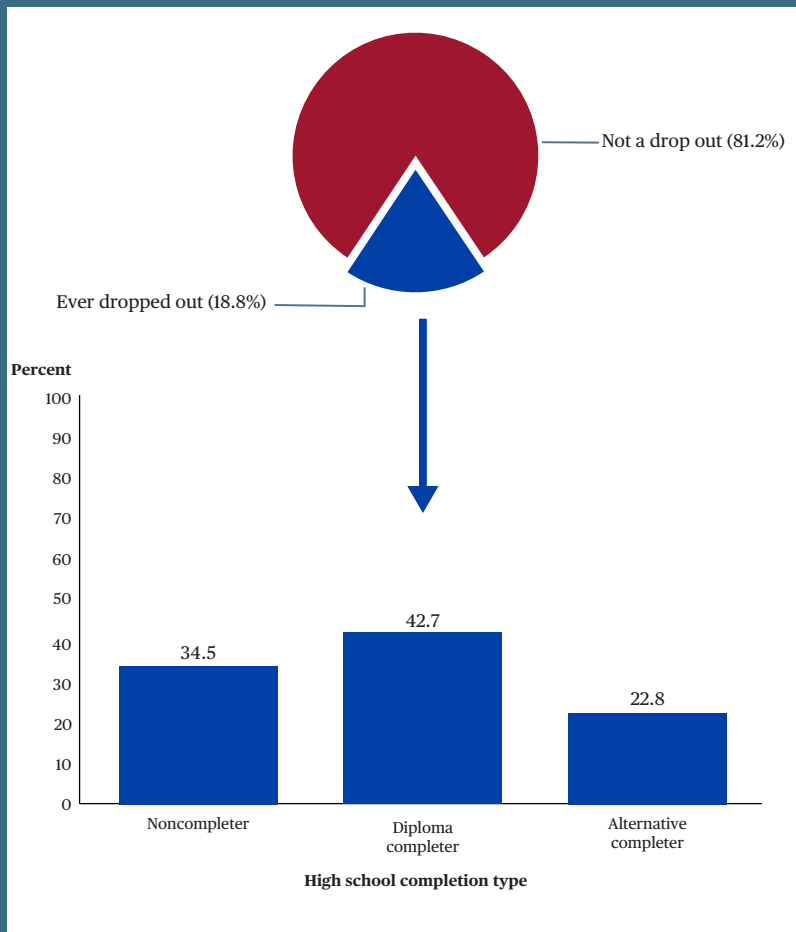
have dropped out of school (e.g., GED), and others that are earned by students who leave and return, including traditional diplomas and certificates of attendance. The number of options for a high school credential has only increased since the students of NELS:88 were in high school. Today's high school students are still able to achieve a high school completion through the GED and, in more recent years, other types of alternative completions have come to include the HiSET,² the TASC,³ and state- or locally-administered certificates. A student need not have dropped out of high school to have earned some of these alternative credentials, however less than 1 percent of students without a dropout episode in the High School Longitudinal Study of 2009 (HSLs:09) did so. A student may earn an alternative credential on-time, as well as early

¹General Educational Development (GED) certificates.

²The HiSET® exam asks out-of-school youth and adults to demonstrate their skills and knowledge and allows them to earn a state-issued high school equivalency (HSE) credential. <https://hiset.ets.org/>

³The Test Assessing Secondary Completion (TASC) was a high school equivalency exam offered between 2014 and 2021.

FIGURE 1. Dropouts completion status three years later: Percentage of ninth-graders who ever reported a high school dropout episode, by completion status as of 2016 and by high school completion type



NOTE: Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificate. Certificates of attendance are also included in this group.
SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLs:09) Second Follow-Up.

or late, just as a traditional diploma may be earned early or late for a student’s expected graduation year.

Overall, high school dropout rates decreased in the two decades between when the students of NELS:88 and HSLs:09 were high schoolers (Irwin et al. 2022). The rates of traditional diploma completions went from 83 percent for the NELS:88 cohort within two years of expected graduation (Hurst et al. 2004, table 1) to 89 percent of the HSLs:09 cohort within three years of their expected graduation (present report, table 1). Rates of

alternative credential earning remained about the same: 6 percent as of 1994 for the 1988 eighth-graders, and 4 percent as of 2016 for the 2009 ninth-graders (table 1). This report describes early outcomes following receipt of alternative credentials.

Most ninth-graders in 2009 finished high school without ever dropping out (figure 1).⁴ However, about

⁴ Students were defined as dropouts if they had been absent from school for 4 or more weeks in a row, not due to accident, illness, or vacation. See the [HSLs:09 Base Year to First Follow-up Data File Documentation](#) for more information.

19 percent did report dropping out or stopping out at least once in high school (table 2). Many of these students became what are termed stopouts and went on to earn a high school credential by 2016. Forty-three percent had earned a traditional diploma and 23 percent had earned an equivalency such as GED. The remaining 35 percent had not finished high school as of 2016 (table 2).

There are several interrelated issues that this report will discuss, along a common theme of high school completion: postsecondary enrollment and work status within the first few years after high school by high school credential type; levels of postsecondary degrees earned and sought by high school completion type; as well as amount of employment by high school credential type in order to understand how some of the early outcomes of young adults may vary by how they complete or leave high school.

This report analyzes the most recent data available for this HSLs:09 cohort. The data were collected in 2016 and are combined with administrative data collected in 2017-2018. By 2016, most of the cohort was age 21. Early work and postsecondary education outcomes of the cohort who earned a regular diploma (“**diploma completers**”) are compared with those who earned an equivalency such as GED (“**alternative completers**”) and those who had not completed high school (“**noncompleters**”).

Data, Methods, and Structure of the Report

The High School Longitudinal Study of 2009 (HSLs:09) started with a sample of more than 23,000

⁵ Diploma completer and alternative completer categories are defined regardless of timing to simplify comparisons. This is because some completers take longer than 4 years, even without a stopout episode, and some alternative completers complete within 4 years.

ninth-graders in 2009. Follow-up surveys were done with the cohort in 2012 (eleventh grade for most of the cohort), 2013 (high school completion year for most), and 2016 (three years after high school for most of the cohort). High school transcripts were collected in 2013 from all high schools attended and postsecondary transcripts were collected in 2017-18 from postsecondary institutions attended through 2016. GED records were also collected for those who had taken a GED test. The analysis is based on about 17,300 HSLS:09 ninth-graders who answered the 2016 survey or for whom transcripts were collected.

Longitudinal survey data, where information is collected repeatedly over time directly from the same sample members, are particularly useful for understanding the outcomes of high school completion because they link specific high school experiences with later labor market and enrollment information. This allows researchers to better understand young adults' pathways than administrative record data alone. Outcomes of interest include postsecondary enrollment and employment, as well as the combination of the two activities. Students who do participate in postsecondary education often need to work while enrolled to help pay for their education. Such work

can come with a risk: full-time work has been related to greater risk of leaving college before earning a degree (Horn and Premo 1995). Type of postsecondary degree sought is also of interest because higher-level degrees may also lead to higher wages (BLS 2020).

Differences noted in the text are statistically significant at the $p < .05$ level. To present the findings in a shortened format, the report is structured in two parts, with an introduction and findings sections in this first part. For more information about the items, data, or methods used in these analyses, see the **Methodology and Technical Notes** part of the report.

STUDY QUESTIONS

1

How did postsecondary educational outcomes for alternative completers within three years of high school compare to those of traditional high school completers and noncompleters?

2

How did early employment outcomes for alternative completers compare to those of traditional high school completers and noncompleters?

Key Findings

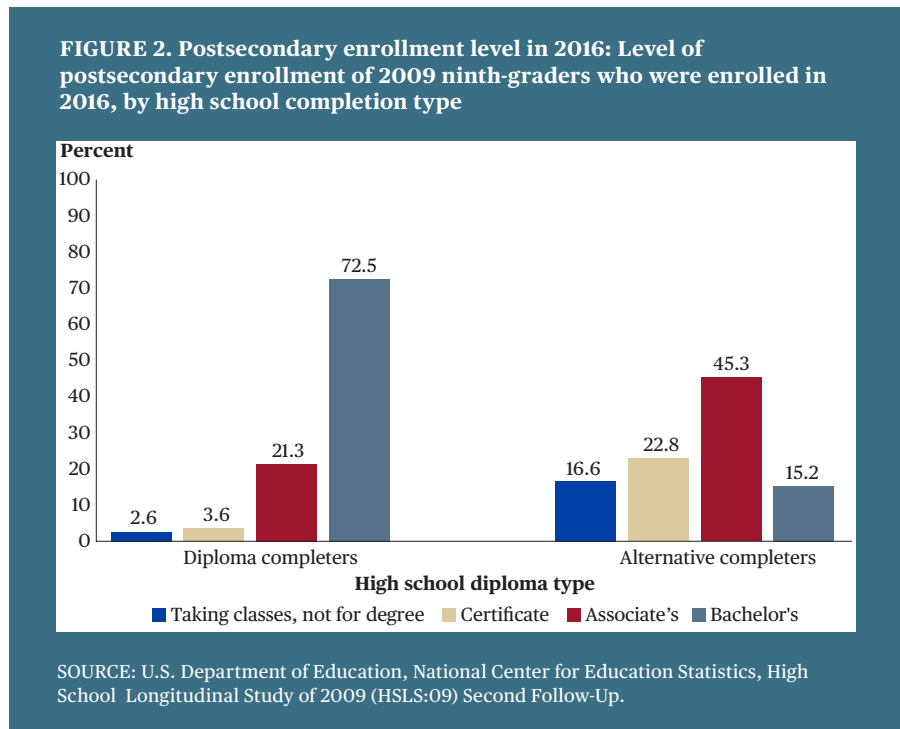
- Of those enrolled in postsecondary education in 2016, diploma completers were mostly in bachelor's degree programs (73 percent). This compares to only 15 percent of alternative completers enrolled in postsecondary education who were in bachelor's degree programs (figure 2).
- Those who had not completed high school within three years of the cohort's expected graduation date were neither working nor enrolled in postsecondary education at a higher rate (40 percent) than those who had completed an alternative credential (28 percent) and those who had earned a traditional diploma (12 percent) (figure 3).
- About 70 percent of alternative completers and noncompleters were working full-time in 2016. This compared to 45 percent of diploma completers (figure 4).
- Among alternative completers who enrolled in postsecondary education and were working, 66 percent were working full-time (figure 5). This compared to much smaller rates of working full-time for diploma completers and noncompleters who were enrolled in postsecondary education (23 percent or less).

1 How did postsecondary educational outcomes for alternative high school completers within three years of high school compare to those of traditional high school completers and noncompleters?

This report's first set of analyses focuses on whether there were any differences in postsecondary enrollment outcomes by high school credential type. The initial analyses in this section examine postsecondary enrollment status in 2016. Most 2009 ninth-graders had enrolled in some form of postsecondary education by 2016. While the typical bachelor's degree takes 4 or more years to earn, it is possible to earn these types of degrees within three years of leaving high school, as well as various other types of degrees that typically take less time, such as certificates and associate's degrees. Using the latest available data for HSLs:09, it is possible to examine differences in postsecondary completion patterns even within three years after expected high school graduation year. Because there are important returns on postsecondary credential earning at levels below the bachelor's degree (Carnevale, Rose, and Hanson 2012), the second set of analyses of postsecondary experiences in this section do not solely focus on bachelor's degree enrollment.

Looking first at students enrolled in 2016, many students who had ever enrolled in postsecondary education by 2016 were still enrolled at that point. For those enrolled in 2016, there were no differences in enrollment intensity. Diploma completers, alternative completers and noncompleters enrolled full-time⁶ at about the same rates, if enrolled in 2016. The same was true for part-time enrollment (table 4).

⁶ Full-time enrollment is defined as enrollment for 12 credit hours a term.



The types of postsecondary programs in which students enrolled⁷ were very different between those holding diplomas and alternative high school completions.⁸ Diploma holders were mostly enrolled in bachelor's programs (73 percent). Another fifth was enrolled in associate's programs (21 percent). Less than 10 percent were in certificate programs or taking classes outside a degree program (table 4).

⁷ Program type is classified as: Bachelor's degree; associate's degree; certificate or diploma from a school that provides occupational training; Not working on a degree or certificate, but taking undergraduate classes; or graduate program or classes. Graduate program or classes was chosen at too low an incidence to be reliably reported. For specific wording, see the [HSLs:09 Second Follow-up Questionnaire](#), variable S4PPROGRAM)

⁸ Noncompleters are not part of this analysis due to very small sample sizes enrolled in postsecondary education.

Alternative completers had a different pattern by postsecondary program type. Nearly half were enrolled in associate's programs (45 percent), with the next largest postsecondary program type being a certificate (23 percent). Lower percentages said they were just taking classes (17 percent) or seeking a bachelor's degree (15 percent) (figure 2).

For many young people who were 2009 ninth-graders, looking at enrollment status in 2016 overlooks the experiences of students who had enrolled in postsecondary education and left because they had already earned a credential before 2016, so postsecondary completions by 2016 are discussed next.

There were differences in postsecondary credential earning as of 2016 by high school completion

type. Nearly 13 percent of the total ninth-grade cohort who had ever enrolled in postsecondary education had completed a credential by 2016,⁹ with about half of the postsecondary credentials earned being certificates (51 percent), which typically take less than 2 years to earn. About the same percentage of credentials earned were associate's degrees (47 percent) (table 6), which typically take 2 years or longer to earn.

⁹ Three years after high school, when the second follow-up survey was conducted, is the latest follow-up period currently available for these data from the HSL:09 cohort. Three years is sufficient time to capture immediate college enrollment and college enrollment delayed one or two years.

A relatively small percentage of degrees were bachelor's degrees (4 percent).¹⁰

Twelve percent of diploma completers who had enrolled in postsecondary education had earned a credential of any kind by 2016. Twenty percent of alternative completers had earned any postsecondary credential by 2016 (table 6).

¹⁰ Some cohort members had earned more than one type of degree, which is why the total across the three categories sums to greater than 100. Estimates are here combined for associate's degrees and higher degrees in order to be able to report out stable estimates.

Types of postsecondary credentials earned varied by high school completion type. About half of diploma completers who had earned a postsecondary credential by 2016 had earned a certificate (49 percent), with about the same earning an associate's degree (49 percent) and a relatively small percentage earning a bachelor's degree (3 percent). In contrast, a large majority of alternative completers who had earned a postsecondary credential earned a certificate (91 percent), which was much higher than the portion of diploma completers who had earned certificates.

2

How did early employment outcomes for alternative completers compare to those of traditional high school completers and noncompleters?

Because many young adults balance their time between work and education, it is important to study the overall pattern of concurrent employment and postsecondary enrollment activities. Working full-time concurrently while enrolled has been shown to slow postsecondary students' pace of credential earning (Horn and Malizio 1998) and perhaps act as a barrier to postsecondary persistence (Horn and Premo 1995). However, many young adults may find the cost of college tuition difficult to afford without some employment income (Engle and Tinto 2008). Work obligations might contribute to difficulty completing postsecondary education, and conversely postsecondary educational

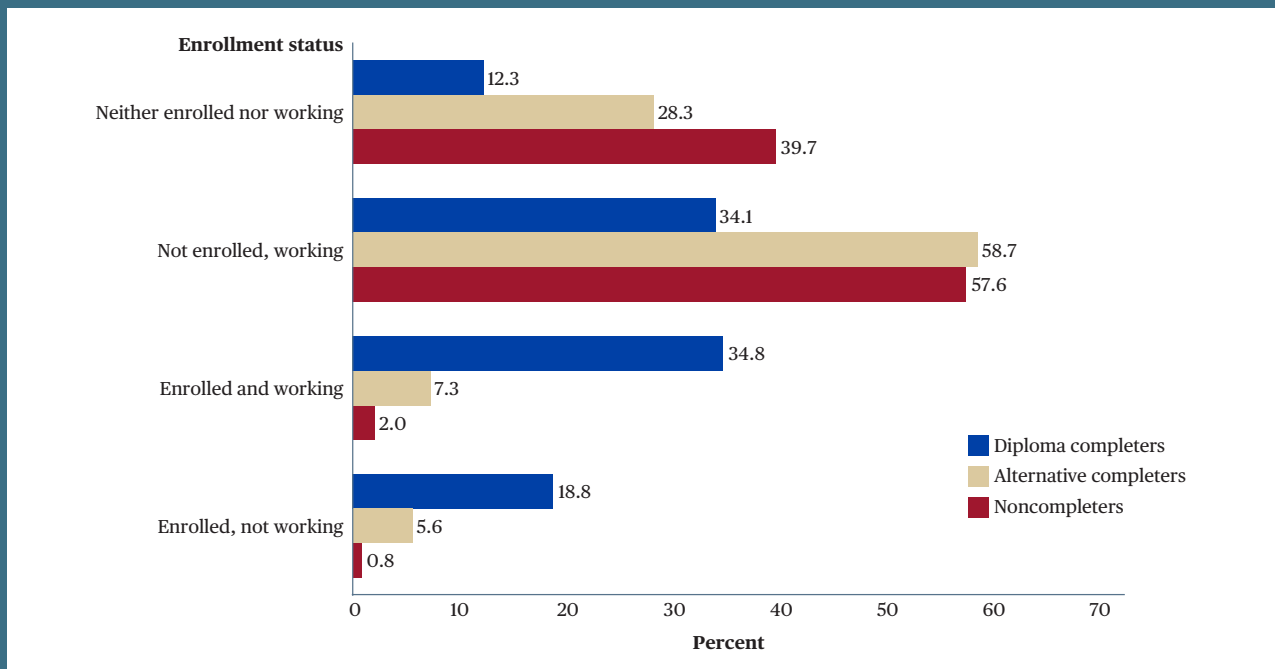
requirements may affect a student's availability for employment. In the present analyses, patterns in which these activities were balanced varied by high school completion type.

An important group to start with is the group of 2009 ninth-graders who were engaged in neither of the typical young adult activities of employment nor postsecondary enrollment. Nearly 40 percent of the cohort that had not completed high school as of 2016 were not working and not enrolled in postsecondary education (figure 3). These young people are of policy interest because of the poorer economic outcomes they typically face (Fernandes-Alcantara 2015).

This 40 percent rate of neither working nor enrolled in postsecondary education for noncompleters compares to 28 percent for those who were alternative completers. The gap may exist because having alternative credentials opens more employment and educational opportunities than having no credential (BLS 2020). Just 12 percent of those who earned a regular high school diploma were neither working nor enrolled.

The next group to consider is the group of young adults who were engaging in one of the two major activities, either work or education. Nearly 60 percent of those who did not complete high school or were alternative completers

FIGURE 3. Employment and postsecondary enrollment after high school: Percentage of 2009 ninth-graders who were enrolled in postsecondary education and employed in 2016, by high school completion type



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSLs:09) Second Follow-Up.

were working and not taking postsecondary classes. A much smaller percentage of diploma completers were working and not enrolled (34 percent).

The pattern shifted for those enrolled but not working. A much larger percentage of diploma completers was enrolled but not working (19 percent) than alternative completers (6 percent) or noncompleters (1 percent). The difference between these rates for alternative completers (6 percent) and noncompleters (1 percent) was statistically significant.

The last group of young adults to consider is the group who engaged in both activities: work as well as education. Diploma completers were both enrolled and working at a much higher rate (35 percent) than noncompleters¹¹ and alternative completers (2 and 7 percent, respectively).

This final set of analyses further considers employment outcomes. An important aspect of employment to understand is whether it is full-time or part-time.

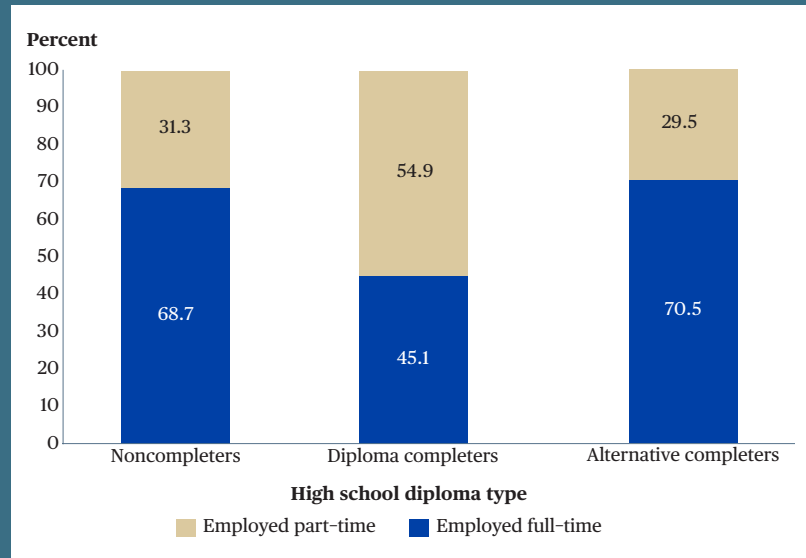
Full- and part-time employment varied by high school completion type. About 70 percent of alternative completers and noncompleters were working full-time. This compared to 45 percent of diploma completers (figure 4).

Taking into account concurrent postsecondary enrollment revealed a different pattern of employment intensity. Experiences of being enrolled while working in 2016 differed significantly by how students completed high school. Among alternative completers who enrolled in postsecondary education and were working,

66 percent were working full-time (figure 5). This compared to much smaller rates of working full-time for diploma completers and noncompleters who were enrolled in postsecondary education

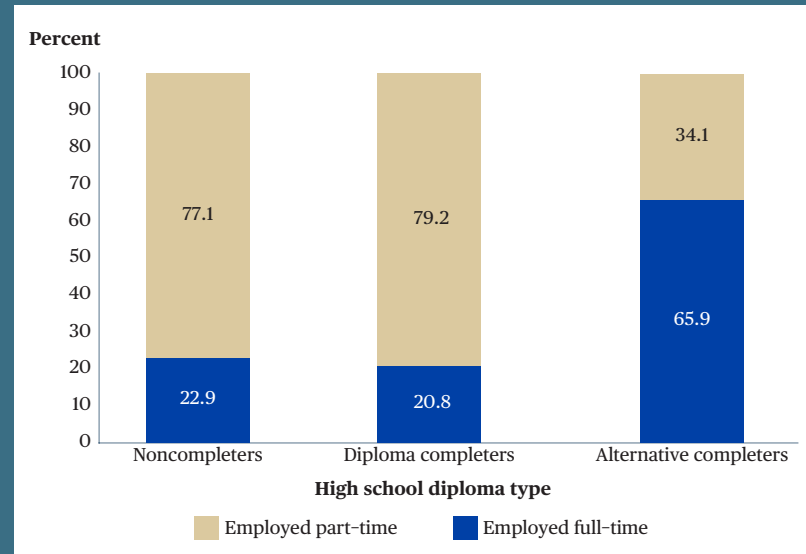
(23 percent or less). Relatively higher percentages of alternative completers than diploma completers and noncompleters were balancing postsecondary education with full-time work.

FIGURE 4. Employment intensity in 2016: Percentage of 2009 ninth-graders who worked full-time, by high school completion date



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HLS:09) Second Follow-Up.

FIGURE 5. Employment intensity while enrolled: Percentage of 2009 ninth-graders enrolled in postsecondary education who also worked full-time or part-time, by high school completion type



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HLS:09) Second Follow-Up.

¹¹ Some states offer high school equivalency programs that require taking college-level courses at state institutions (e.g., New York: <http://www.acces.nysed.gov/aep/c/college-credit>). Noncompleters enrolled in postsecondary education might reflect these unique pathways.

References

- Berkthold, J., Geis, S., and Kaufman, P. (1998). *Subsequent Educational Attainment of High School Dropouts* (NCES 98085). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=98085>.
- Carnevale, A.P., Rose, S.J., and Hanson, A.R., (2012). *Certificates: Gateway to Gainful Employment and College Degrees*. Georgetown University Center on Education and the Workforce.
- Duprey, M.A., Pratt, D.J., Jewell, D.M., Cominole, M.B., Fritch, L.B., Ritchie, E.A., Rogers, J.E., Wescott, J.D., and Wilson, D.H. (2018). *High School Longitudinal Study of 2009 (HSL:09) Base-Year to Second Follow-Up Data File Documentation* (NCES 2018-140). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018140>.
- Duprey, M.A., Pratt, D.J., Wilson, D.H., Jewell, D.M., Brown, D.S., Caves, L.R., Kinney, S.K., Mattox, T.L., Smith Ritchie, N., Rogers, J.E., Spagnardi, C.M., and Wescott, J.D. (2020). *High School Longitudinal Study of 2009 (HSL:09) Postsecondary Education Transcript Study and Student Financial Aid Records Collection Data File Documentation* (NCES 2020-004). U.S. Department of Education. Washington, DC: National Center for Education Statistics, Institute of Education Sciences. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020004>.
- Engle, J., and Tinto, V. (2008). *Moving Beyond Access: College Success for Low-Income, First-Generation Students*. Pell Institute for the Study of Opportunity in Higher Education.
- Fernandes-Alcantara, A.L. (2015). *Disconnected Youth: A Look at 16 to 24 Year Olds Who Are Not Working or In School* (CRS Report No. R40535). Washington, DC: Congressional Research Service. Retrieved September 1, 2022, from <https://fas.org/sgp/crs/misc/R40535.pdf>.
- Horn, L.J., and Premo, M.D. (1995). *Profile of Undergraduates in U.S. Postsecondary Education Institutions: 1992-93, With an Essay on Undergraduates at Risk* (NCES 96237). U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=96237>.
- Horn, L.J., and Malizio, A. (1998) *Undergraduates Who Work: National Postsecondary Student Aid Study 1996* (NCES 98137). National Center for Education Statistics, Office of Educational Research and Improvement, U.S. Department of Education. Washington, DC. Retrieved September 1, 2022, from <https://nces.ed.gov/pubs98/98137.pdf>.
- Hurst, D., Kelly, D., and Princiotta, D. (2004). *Educational Attainment of High School Dropouts 8 Years Later* (NCES 2005-026). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2005026>.
- Ingels, S.J., Pratt, D.J., Herget, D.R., Dever, J.A., Fritch, L.B., Ottem, R., Rogers, J.E., Kitmitto, S., and Leinwand, S. (NCES 2014361). *High School Longitudinal Study of 2009 (HSL:09) Base Year to First Follow-Up Data File Documentation*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Irwin, V., De La Rosa, J., Wang, K., Hein, S., Zhang, J., Burr, R., Roberts, A., Barmer, A., Bullock Mann, F., Dilig, R., and Parker, S. (2022). *Report on the Condition of Education 2022* (NCES 2022-144). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2022144>.
- Kienzl, G., and Kena, G. (2006) *Economic Outcomes of High School Completers and Noncompleters 8 Years Later* (NCES 2007-019). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 1, 2022, from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007019>.
- U.S. Bureau of Labor Statistics (2020). "Learn More, Earn More: Education Leads to Higher Wages, Lower Unemployment," *Career Outlook*, U.S. Bureau of Labor Statistics. Retrieved September 1, 2022, from <https://www.bls.gov/careeroutlook/2020/data-on-display/education-pays.htm>.

Methodology and Technical Notes

Survey Methodology

The High School Longitudinal Study of 2009 (HSLs:09) is the fifth in a series of secondary education longitudinal studies conducted by the National Center for Education Statistics (NCES). All of the studies monitor the transition of national samples of young people from the high school to postsecondary years, including further education, participation in the workforce, and assumption of other adult roles. The core research questions for HSLs:09 explore secondary-to-postsecondary transition plans and the evolution of those plans; the paths into and out of science, technology, engineering, and mathematics; and the educational and social experiences that affect these shifts.

The HSLs:09 base-year administration took place in the 2009-10 school year, with a randomly selected sample of fall-term ninth-graders in 944 public and private high schools with both a ninth and an eleventh grade. In the base year, students took a mathematics assessment and survey online, and students' parents, school administrators, and mathematics and science teachers, as well as the school's lead counselor, completed a survey on the phone or on the Web. The first follow-up took place in 2012, when most sample members were in the spring term of the eleventh grade, and included dropouts, newly home-schooled students, and transfer students, as well as students who remained in their base-year school. In addition to a student questionnaire and mathematics assessment, the first follow-up included surveys for parents, administrators, and counselors.

Following the first follow-up, an update was conducted between June and December of 2013. The 2013 Update could be completed by either the sample member or a parent and was designed to gather basic information about the sample member's high school completion status or plans, postsecondary education and work plans, and the college application and financing process.

A second follow-up interview took place in 2016, when most sample members were 3 years beyond high school graduation. The second follow-up extended the focus of the study to emphasize the transition of the cohort to postsecondary education—both baccalaureate and subbaccalaureate—and the workforce, including access to higher education and choice of postsecondary institution. In addition to the survey, the second follow-up included the collection of information from student financial aid records and postsecondary transcripts in 2017.

The most recent wave of data collection for the HSLs:09 cohort included postsecondary transcripts (2017-18). The cohort is expected to be followed to at least age 30, with an administrative data match scheduled for 2021-22 and a future questionnaire administration to follow later.

The estimates provided in this Statistics in Brief are based on data collected through the second follow-up and in postsecondary transcripts of the HSLs:09. More detailed information on the HSLs:09 methodology is available in *High School Longitudinal Study of 2009 (HSLs:09) Postsecondary Education Transcript Study and Student Financial Aid Records Data File Documentation* (Duprey et al. 2020).

Sample Design

Base year. In the base-year HSLs:09, students were sampled through a two-stage process: schools were sampled first, followed by students within schools. The target population at the school level was defined as regular public schools (including public charter schools) and private schools in the 50 states and the District of Columbia that provided instruction in both ninth and eleventh grades. Stratified random sampling based on school type (public, private-Catholic, private-other), geographic region (Northeast, Midwest, South, West), and geographic location of the school (city, suburban, town, rural) resulted in the identification of 1,889 eligible schools. A total of 944 of these schools participated in the study, resulting in a 56 percent weighted (or 50 percent unweighted) school response rate. HSLs:09 base-year school and student samples are nationally representative and representative at the state level for a subset of 10 states.

In the second stage, students were randomly selected from school enrollment rosters, with 25,206 eligible sample members (or about 27 students per school). The target population of students was defined as all ninth-grade students who attended the study-eligible schools in the fall 2009 term. All students who met the target population definition were deemed eligible for the study.

2013 Update. Of the 25,206 students eligible for the base year, 25,168 were eligible for the 2013 Update. Not all cases were fielded: sample members were excluded if neither base-year nor first follow-up data had been collected for them or they were out of scope for a given round. These unfielded cases are classified as nonrespondents and appear in

the sample denominator for the calculation of response rates.

Second Follow-Up. The second follow-up fielded sample included 23,316 of the 23,401 sample members fielded and found eligible for the 2013 update. The 85 sample members not fielded withdrew from the study between the end of the 2013 Update collection and the beginning of the second follow-up data collection or were found to be deceased.

Postsecondary Transcripts and Student Records (PETS-SR). Among the 3,491 institutions reported to have been attended by sample members, it was determined that 220 institutions were ineligible because the institution had closed, because a sample member had reported a school that was not a postsecondary institution, or because all of the sampled students were reported as having not attended the institution. Hence, transcripts and student records were requested from 3,271 postsecondary institutions.

Sample members eligible for PETS-SR consisted of only those who were ever enrolled at an Integrated Postsecondary Education Data System (IPEDS)-participating postsecondary institution as of June 30, 2017. Prior to the start of data collection, there were 17,201 students identified as being enrolled based on responses to the 2013 Update and second follow-up surveys as well as National Student Loan Data System (NSLDS) data matching. These 17,201 students were fielded for PETS and SR data collection. During the course of data collection, it was determined that 328 of these cases were not eligible (i.e., did not attend, based on reports from the institution), resulting in 16,873 eligible fielded cases. After data collection, a match to National Student Clearinghouse (NSC) identified 474 additional eligible cases. However, 9 of these

cases were found to be deceased. Therefore, for weighting purposes, 17,338 cases were eligible for the PETS component.

Response Rates

The postsecondary transcript collection ended with a 75.9 percent participation rate (transcripts were collected for 13,160 sample members). However, the weighted unit response rate for students with postsecondary transcript information was 71.2 percent.

Unit nonresponse bias analyses were conducted for the respondents corresponding to the analytic weight, W4STUDENT. Approximately 23.9 percent of the 67 statistical tests conducted for the student-level unit response data identified bias statistically significant at the .05 significance level prior to adjusting the weights for nonresponse. After adjustment, no tests were statistically significant at the .05 level of significance, and the median absolute relative bias was reduced by 100 percent. The results of the non-response bias analyses suggest that there is not a substantial bias due to nonresponse after adjusting for that nonresponse (Duprey et al. 2018).

Weighting

Analytic weights are used in combination with software that accounts for the HSLs:09 complex survey design to produce estimates for the target population, with appropriate standard errors. When appropriately weighted, the HSLs:09 data are generalizable to the U.S. population of ninth-graders who were attending schools with both a ninth and an eleventh grade in fall 2009.

Estimates for this report were produced using the analytic weight associated with the students who responded to the second follow-up in 2016/17 (W4STUDENT). This weight is for analyses specific to

the second follow-up. The estimates generated with this weight are associated with the HSLs:09 target population of ninth-grade students adjusted for the number of deceased students observed in the HSLs:09 sample. Corresponding balanced repeated replicate (BRR) weights were used to compute standard errors.

Statistical Procedures

Comparisons of medians and proportions were tested using Student's *t* statistic. Differences between estimates were tested against the probability of a Type 1 error or significance level. The statistical significance of each comparison was determined by calculating the Student's *t* value for the difference between each pair of proportions and comparing the *t* value with published tables of significance levels for two-tailed hypothesis testing. Student's *t* values were computed to test differences between independent estimates using the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

No adjustments were made for multiple comparisons. It is important to note that many of the variables examined in this report may be related to one another and to other variables not included in the analyses. Complex relationships should be fully explored and warrant further analysis. Readers are cautioned against drawing causal inferences based on the results presented.

Variables Used

All variables are available on the restricted-use dataset. The variable names are in all capital letters. All

estimates were computed using the sample weight, W4STUDENT, because analyses depended on information obtained in second follow-up student interviews.

The analyses presented in this Brief focus on sample members' educational and work activities as of 2016, when most had been out of high school for 3 years. Additional detail on the variables used in these analyses follows.

To understand sample members' high school completion status, X4HSCOMPSTAT was revised using information about enrollment status in 2016 (X4PSENRSTLV) and postsecondary enrollment and labor force status in 2016 (X4PSLFSTFB16). Different types of alternative high

school completions were combined for the "alternative completers" group.

To understand dropout and stopout episodes, sample members were asked at every round whether they had ever stopped "going to high school for a period of 4 weeks or more, not including summer or other school breaks." In the Second Follow-up questionnaire, this variable was S4DROPOUTHS. X4EVERDROP, used in the analyses for this publication, is the variable produced based on these responses and updated every round, imputed when missing.

Second follow-up respondents were asked whether they were enrolled and whether they were

employed full-time, employed part-time, unemployed, or not in the labor force in February 2016 (X4PSLFSTFB16). These categories were rolled up to produce analytical categories used in research questions 2 and 3.

To compute enrollment intensity, a composite variable was created from PETS data (T5MNORMATT), if available. If that value did not exist, then a reported intensity was taken from second follow-up questionnaire data (S4CLGFTPT).

Information about the postsecondary program in which students were enrolled in 2016 was obtained from variables S4PPROGRAM and S4PPGM16FB.

National Center for Education Statistics

Table 1. Students who dropped out and high school completion type: Percentage of 2009 ninth-graders who ever dropped out of high school and percentage of high school completions, by completion type (2016)

Characteristic	Ever dropped out of high school		Of those who had ever dropped out, high school completion type		
	No	Yes	No completion	Alternative completion ¹	High school diploma
Total	81.2	18.8	34.5	22.8	42.7

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-1. Standard errors for Table 1. Students who dropped out and high school completion type: Percentage of 2009 ninth-graders who ever dropped out of high school and percentage of high school completions, by completion type (2016)

Characteristic	Ever dropped out of high school		Of those who had ever dropped out, high school completion type		
	No	Yes	No completion	Alternative completion	High school diploma
Total	0.67	0.66	1.53	1.26	1.76

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table 2. Activities three years after high school: Percentage of 2009 ninth-graders who were enrolled and employed, by high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion ¹	High school diploma
Total	6.5	4.5	89.0
Activities in 2016			
Neither enrolled nor working	39.7	28.3	12.3
Not enrolled, working	57.6	58.7	34.1
Enrolled and working	‡	7.3	34.8
Enrolled, not working	0.8!	5.6	18.8

! Interpret data with caution. Estimate is unstable because the standard error is between 30 and 50 percent of the estimate.

‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the standard error is greater than 50 percent of the estimate.

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-2. Standard errors for Table 2. Activities three years after high school: Percentage of 2009 ninth-graders who were enrolled and employed, by high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion	High school diploma
Total	0.38	0.32	0.56
Activities in 2016			
Neither enrolled nor working	2.99	2.95	0.56
Not enrolled, working	3.09	0.73	3.31
Enrolled and working	#	1.63	0.73
Enrolled, not working	0.34	0.58	1.54

Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table 3. Enrollment intensity and program type: Percentage of 2009 ninth-graders who were enrolled in postsecondary education, by enrollment intensity, postsecondary program level, and high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion ¹	High school diploma
Total	0.4!	1.0	98.6
Enrollment intensity²			
Full time	76.0	64.9	79.3
Part time	24.0!	35.1	20.7!
Postsecondary program type			
Taking classes, but not for a degree	‡	16.6!	2.6
Certificate or diploma	65.9	22.8	3.6
Associate's degree	‡	45.3	21.3
Bachelor's degree	‡	15.2!	72.5

! Interpret data with caution. Estimate is unstable because the standard error is between 30 and 50 percent of the estimate.

‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the standard error is greater than 50 percent of the estimate.

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

² Full-time enrollment is defined as enrollment for 12 credit hours a term, as used in the Integrated Postsecondary Education Data System (IPEDS).

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-3. Standard errors for Table 3. Enrollment intensity and program type: Percentage of 2009 ninth-graders who were enrolled in postsecondary education, by enrollment intensity, postsecondary program level, and high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion	High school diploma
Total	0.18	0.22	0.29
Enrollment intensity			
Full time	17.44	1.03	8.85
Part time	17.44	1.03	8.85
Postsecondary program type			
Taking classes, but not for a degree	#	8.22	0.31
Certificate or diploma	19.43	6.28	0.44
Associate's degree	#	7.92	1.02
Bachelor's degree	13.01	5.70	1.02

Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table 4. Employment and enrollment: Percentage of 2009 ninth-graders who were employed and those both employed and enrolled in postsecondary education, by high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion ¹	High school diploma
Total	5.7	4.3	90.0
Employment level²			
Full time	68.7	70.5	45.1
Part time	31.3	29.5	54.9
Employment level for those also enrolled			
Full time	‡	65.9	20.8
Part time	77.1	34.1	79.2
Employment level for those not enrolled			
Full time	55.3	63.3	69.7
Part time	44.7!	36.7	30.3

! Interpret data with caution. Estimate is unstable because the standard error is between 30 and 50 percent of the estimate.

‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the standard error is greater than 50 percent of the estimate.

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

² Full-time enrollment is defined as enrollment for 12 credit hours a term, as used in the Integrated Postsecondary Education Data System (IPEDS).

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-4. Standard errors for Table 4. Employment and enrollment: Percentage of 2009 ninth-graders who were employed and those both employed and enrolled in postsecondary education, by high school completion type (2016)

Characteristic	High school completion type		
	No completion	Alternative completion	High school diploma
Total	0.43	0.33	0.59
Employment level			
Full time	3.27	3.55	0.81
Part time	3.27	3.55	0.81
Employment level for those also enrolled			
Full time	#	9.70	0.91
Part time	22.33	9.70	0.91
Employment level for those not enrolled			
Full time	15.2	7.5	1.4
Part time	15.2	7.5	1.4

Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table 5. Degrees earned by high school completers: Percentage of 2009 ninth-graders who had completed degrees of those who ever enrolled in postsecondary education, by program level and high school completion type (2016)

Characteristic	Total	High school completion type		
		No completion	Alternative completion ¹	High school diploma
Total		‡	3.6	95.3
Had ever completed a postsecondary degree by 2016				
Yes	12.6	‡	20.2	12.4
No	87.4	77.6	79.8	87.6
Postsecondary program type				
Certificate	50.6	87.3	91.2	48.6
Associate's degree	47.1	‡	‡	49.0
Bachelor's degree	4.2	‡	‡	2.6

‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the standard error is greater than 50 percent of the estimate.

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-5. Standard errors for Table 5. Degrees earned by high school completers: Percentage of 2009 ninth-graders who had completed degrees of those who ever enrolled in postsecondary education, by program level and high school completion type (2016)

Characteristic	Total	High school completion type		
		No completion	Alternative completion	High school diploma
Total		#	0.75	1.09
Had ever completed a postsecondary degree by 2016				
Yes	0.60	#	4.09	8.85
No	0.60	13.17	4.09	8.85
Postsecondary program type				
Certificate	1.95	22.94	4.60	2.02
Associate's degree	2.06	#	#	2.13
Bachelor's degree	0.94	#	#	2.38

Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table 6. Percentage of 2009 ninth-graders by high school completion type and demographic characteristics (2016)

Characteristic	High school completion type				
	No completion	GED ¹	Another high school equivalency	Certificate of attendance or completion	High school diploma
Total	6.5	3.5	0.6	0.3	89.0
Sex					
Female	5.4	2.9	0.5!	0.4	90.8
Male	7.6	4.2	0.6	0.3!	87.3
Race/ethnicity²					
American Indian/Alaska Native	27.0	6.9!	0	0	66.1
Asian	‡	‡	‡	‡	94.4
Black or African American	10.5	5.4	0.7!	1.2!	82.2
Hispanic/Latino(a)	8.2	2.8	0.6!	‡	88.1
Native Hawaiian/Pacific Islander	‡	‡	0	0	95.0
White	4.7	3.4	0.6!	0.2!	91.2
Two or more races	6.1	4.0	0.8!	0	89.2
Ever had disability or special need³					
Yes	8.0	3.8	0.5!	0.6!	87.0
No	4.9	3.1	0.6	0.1!	91.3
Family socioeconomic status quintile					
Lowest quintile	12.3	5.1	0.7!	0.9!	81.0
Second quintile	9.0	4.7	0.4!	0.2!	85.7
Middle quintile	6.9	3.8	1.3!	‡	87.7
Fourth quintile	3.1	3.2	‡	‡	92.9
Highest quintile	0.9	1.1	‡	‡	97.6
Highest education attained by either parent					
Less than high school	15.3	6.4	‡	0.9!	76.6
High school diploma/GED/equivalent	6.1	3.4	0.6!	0.5!	89.5
Certificate/diploma from school providing occupational training	7.6	4.1	‡	‡	87.7
Associate's degree	4.6	3.4	‡	‡	91.2
Bachelor's degree	2.8	1.8	‡	‡	95.1
Master's degree	1.1!	1.6	‡	0	96.9
Ph.D./M.D./Law/other high level professional degree	1.9!	‡	‡	‡	95.9
High school locale (2009)					
City	7.7	3.6	0.6!	‡	87.9
Suburb	5.6	3.3	0.8!	0.4!	89.9
Town	8.4	4.4	‡	‡	86.4
Rural	5.2	3.3	0.4!	0.3!	90.8

! Interpret data with caution. Estimate is unstable because the standard error is between 30 and 50 percent of the estimate.
 ‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the standard error is greater than 50 percent of the estimate.

¹ Alternative completion includes General Educational Development (GED) certificates, as well as the HiSET, the TASC, and state- or locally-administered certificates. Certificates of attendance are also included in this group.

² All race categories exclude Hispanic or Latino origin.

³ This variable indicates if a student had a serious difficulty concentrating, remembering, or making decisions; had been told by a health or education professional that he/she had ADHD (Attention Deficit Hyperactivity Disorder) or ADD (Attention Deficit Disorder); had a learning disability; was deaf or had a serious difficulty hearing; was blind or had a serious difficulty seeing; or had any other disability or special need.

NOTE: Diploma completer and alternative completer categories are defined regardless of timing of completion. A GED, high school equivalency, and even a traditional diploma may be earned early, on-time, or late. Here, these time categories are combined for sake of comparison by completion type.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HLS:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.

National Center for Education Statistics

Table A-6. Standard errors for Table 6. Percentage of 2009 ninth-graders who completed high school by various types, by demographic characteristics (2016)

Characteristic	High school completion type				
	No completion	GED	Another high school equivalency	Certificate of attendance or completion	High school diploma
Total	0.38	0.28	0.12	0.07	0.56
Sex					
Female	0.54	0.31	0.18	0.11	0.73
Male	0.61	0.43	0.17	0.09	0.76
Race/ethnicity					
American Indian/Alaska Native	5.87	2.18	#	#	6.21
Asian	#	#	#	#	2.64
Black or African American	1.48	1.02	0.30	0.38	2.00
Hispanic/Latino(a)	0.85	0.50	0.24	0.13	1.01
Native Hawaiian/Pacific Islander	0.65	3.11	#	#	3.33
White	0.35	0.31	0.19	0.08	0.50
Two or more races	1.02	0.76	0.37	#	1.36
Ever had disability or special need					
Yes	0.83	0.45	0.19	0.21	0.95
No	0.40	0.35	0.18	0.03	0.60
Family socioeconomic status quintile					
Lowest quintile	1.23	0.76	0.23	0.29	1.46
Second quintile	1.06	0.67	0.18	0.09	1.27
Middle quintile	0.79	0.65	0.46	0.16	1.07
Fourth quintile	0.41	0.42	0.36	0.16	0.69
Highest quintile	0.21	0.22	0.10	0.11	0.33
Highest education attained by either parent					
Less than high school	2.12	1.60	0.44	0.40	2.44
High school diploma/GED/equivalent	0.58	0.42	0.19	0.17	0.84
Certificate/Diploma from school providing occupational training	1.94	1.15	0.13	0.35	2.35
Associate's degree	0.78	0.60	0.23	0.24	1.02
Bachelor's degree	0.44	0.32	0.14	0.05	0.55
Master's degree	0.37	0.44	0.24	#	0.61
Ph.D./M.D./Law/Other high level professional degree	0.78	0.88	0.34	0.19	1.34
High school locale (2009)					
City	0.86	0.54	0.20	0.13	1.22
Suburb	0.56	0.35	0.26	0.13	0.80
Town	1.24	0.92	0.36	0.23	1.87
Rural	0.60	0.56	0.14	0.13	0.96

Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09), Base Year, 2013 Update, High School Transcript Study, Second Follow-Up, and Postsecondary Education Transcript Study and Student Financial Aid Records Data Collection.