The Path Least Taken III

Rigor and Focus in High School Pays Dividends in the Future

Jim Hull
Naomi Dillon

June 2016

National School Boards Association
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Center for Public Education

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JUNE 2016

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When we embarked on the Path Least Taken series, we wanted to shed light on a segment of the young adult population that rarely gets studied: high school graduates who don't go on to college.

By drilling down into data collected through a long-term U.S. Department of Education study of the Class of 2004 graduates, we hoped to gain insight into the background, goals and preparation of non-college enrollees and how they compare to those high school graduates who did go on to college. We did this because policymakers, school leaders and educators need a clearer understanding of the outcomes for graduates who take different paths in the years following high school in order to make more informed decisions about how to prepare students for success, whichever path they choose. Toward this end, the Path Least Taken has made some important discoveries:

- Contrary to conventional wisdom, the majority of graduates did, in fact, go on to college. Nearly nine out of every 10 reported they had enrolled in a two-or four-year institution by 2012, the year the study concluded and when most of its participants would have been age 26. (Read Part I of this series here).
- While college goers were, on average, more likely than non-college goers to have a good job and be a productive member of society by age 26, this distinction all but disappeared when a rigorous high school preparation was thrown into the mix. Specifically, non-college goers achieved similar and, in some cases, greater success than college goers if they had maintained at least a C+ GPA, had taken high-level math and science courses, as well as vocational courses that led to an occupational concentration and, even better, a professional certification. (Read Part II of this series here).

We called these highly prepared students:

HIGH CREDENTIALED

HIGH SCHOOL GRADUATE + 2.5 to 3.0 GPA + ALGEBRA 2 + ADVANCED SCIENCE + OCCUPATIONAL CONCENTRATION* + PROFESSIONAL CERTIFICATION OR LICENSE = **HIGH CREDENTIALED**

** 3 or more vocational courses in a specific labor market area*

Clearly, this mix of knowledge and job specific skill sets was a winning combination but what wasn't clear was just how much. In comparing the outcomes of non-college goers and college goers, we'd made no distinction between those who attended a two- or four-year institution (trade schools are not included in this list) or between those who obtained a degree and who didn't. With so many high school graduates going on to college (as we discovered in Part I) but little more than half actually earning a degree, we wanted to conclude this series by peering deeper into just how much a rigorous and tailored high school education can set a student up for success (see Chart 1).

A word about the data

Data from the U.S. Department of Education's National Center for Education Statistics' Education Longitudinal Study of 2002 (ELS) was used to determine the impact high schools have on the employment success of their non-college enrollees. ELS is a longitudinal study that followed a nationally representative sample of high school sophomores in 2002 through 2012. Data from ELS was used to identify students who graduated high school in 2004 and had either enrolled in a two- or four-year college (college goers) or who had never enrolled in one (non-college goers) by 2012 when most respondents were 26 years old. The ELS Postsecondary Transcript Dataset was used to identify which on-time high school graduates fell into each of the four college- going groups. "College" does not include trade or technical schools, or programs of less than two years that result in a professional certificate or license. For more on Methodology, see page 9.

CHART 1: College Enrollment of On-time Graduates [Class of 2004] by 2012

Non-college goer [1]	*13 percent* [2]
Attended 2-year college/no degree	*19 percent*
Attended 4-year college/no degree [3]	*21 percent*
Earned a 2-year degree [4]	*8 percent*
Earned a 4-year degree	*40 percent*

Note: May not sum to 100 percent due to rounding.

As such, this third and final installment of the Path Least Taken series compares highly credentialed non-college goers against:

- Four-year degree holders
- Non-completers (four-year and two-year college attendees with no degree by age 26)
- Two-year degree holders

To streamline the analysis, we reduced the number of indicators we had previously used in Part II of this series to determine economic success (full-time employment, public assistance eligibility, etc.) but all nine measures are available in the index.

[1] Includes on-time high school graduates who attended less than 2-year institutions.

[2] Percentage of non-college goers increased slightly from Part I and Part II due to the fact a small number of on-time high school graduates stated they attended a 2- or 4-year college when surveyed at age 26 but actually attended a less than 2-year institution according to their postsecondary academic transcripts that were not available as of the writing of the previous reports.

[3] Includes any on-time high school graduate who enrolled in at least one course at a 4-year college even if they had also enrolled in one or more courses at a 2-year college.

[4] Does not include on-time high school graduates who earned a 4-year degree as well as a 2-year degree.

Four-year degree remains best ROI, but high credentials offer comparable options

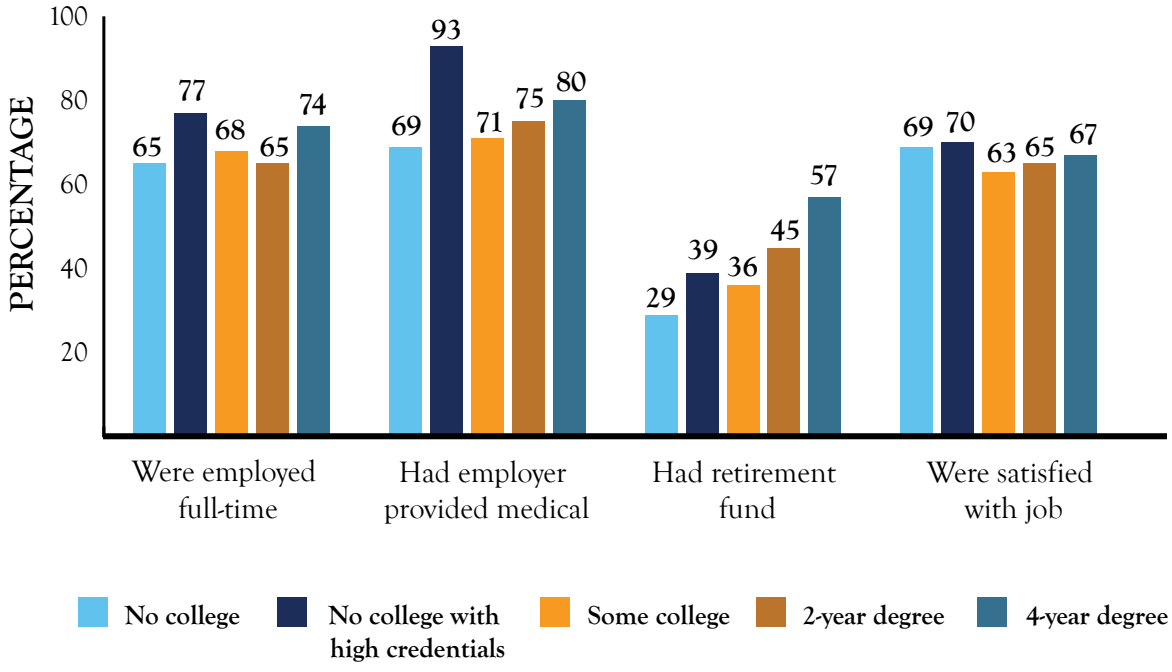
Our examination yielded some expected but also surprising results.

First the reality: The overall group of high school graduates who did not go to college faces the dimmest economic and social prospects at age 26 compared to the group who did.
Now the hope: High-credentialed non-college goers do nearly as well as four-year degree holders economically and socially, and have better outcomes than two-year degree holders and all non-college completers.

Amongst the three college going groups, no one enjoyed a greater likelihood of success than four-year degree holders, pulling in dramatically higher wages and contributing much more to retirement than the average non-college goer by the age of 26 (see Chart 2).

CHART 2: Economic outcomes of high school graduates at age 26 by education attainment

High school graduates without college but with high credentials fare as well economically as four-year degree holders at age 26 with one exception – they are less likely to have a retirement fund.

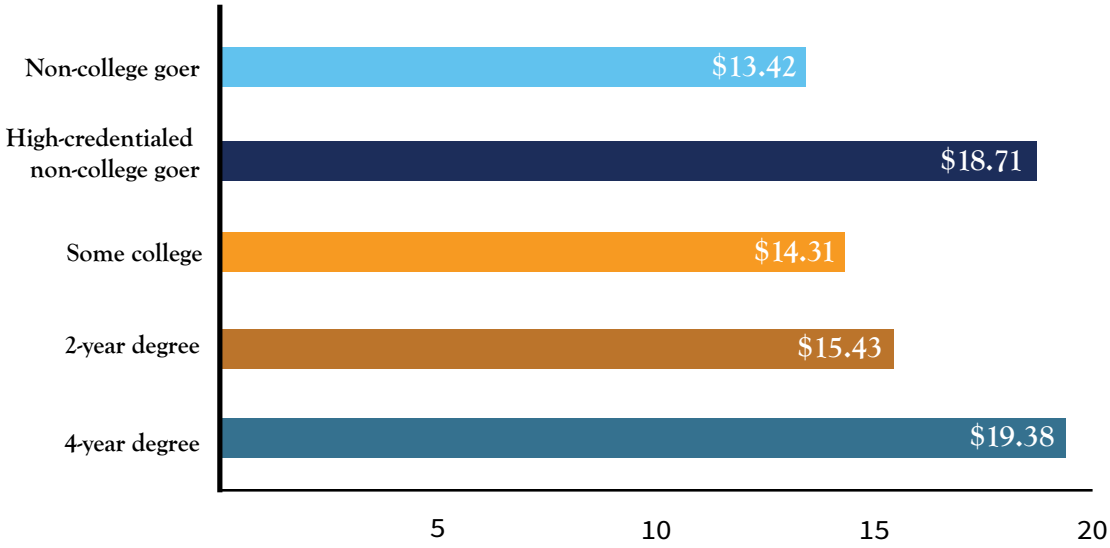


Those differences shrink, however, when four-year university graduates are compared against non-college goers who fit our highly credentialed category — those who maintain an average-to-above-average GPA, take high-level math and science classes and vocational coursework that leads to an occupational

focus. These well-prepared individuals reported similar success in many areas, including job security, supervisory experience and job satisfaction (see Chart 3).

CHART 3: Hourly wages of high school graduates at age 26 by educational attainment

Earnings for high-credentialed non-college goers are competitive with their peers who earned four-year degrees



High credentials a good springboard for all students

The head start that *high credentials* brings appears to extend well beyond high school, helping graduates no matter where they end up in life.

In every category except four-year degree holders, highly credentialed high school graduates earned higher wages and benefits and achieved greater job stability and satisfaction than their peers who lacked this preparation (see Chart 4 and 5).

In fact, *high credentials* made the biggest impact on non-college goers, who, on average, had the lowest chances of landing full-time employment, making a living wage and receiving medical insurance. With more rigorous and focused high school courses, however, non-college goers are the greatest beneficiaries of a high-credentialed curriculum, attaining greater levels of economic success than even those who went to college but failed to graduate.

High credentials associated with greater social engagement

Not only can high school graduates who don't go on to college find economic success at age 26 if they complete a rigorous high school curriculum and obtain specific job skills, they can also find success in engaging in society as well.

CHART 4: Full-time employment levels of college goers without a degree (at age 26)

Rigorous high school preparation and a certificate also benefits college goers who left before earning a degree.

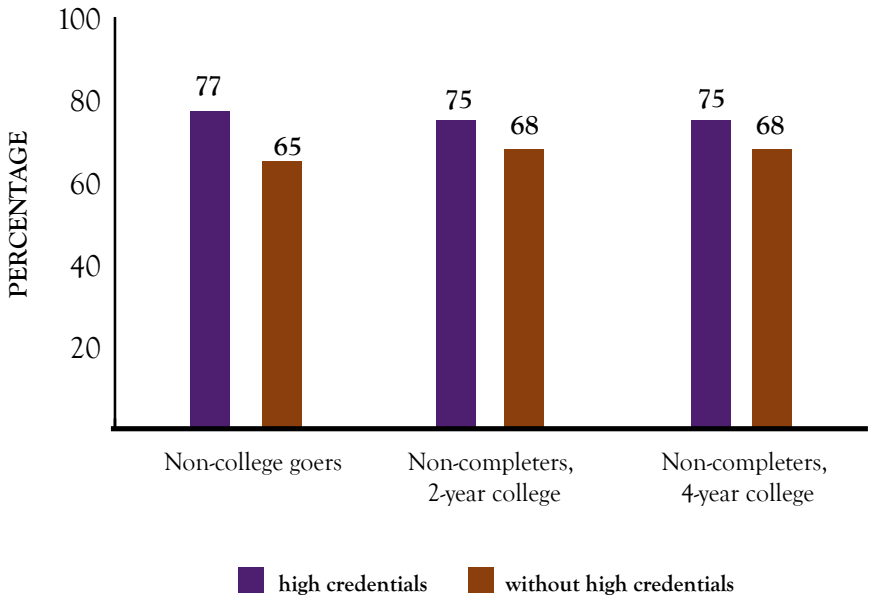
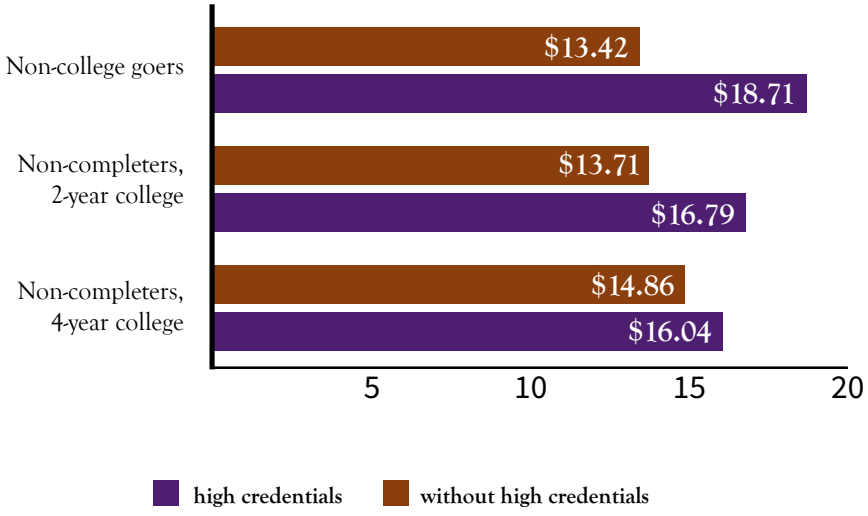


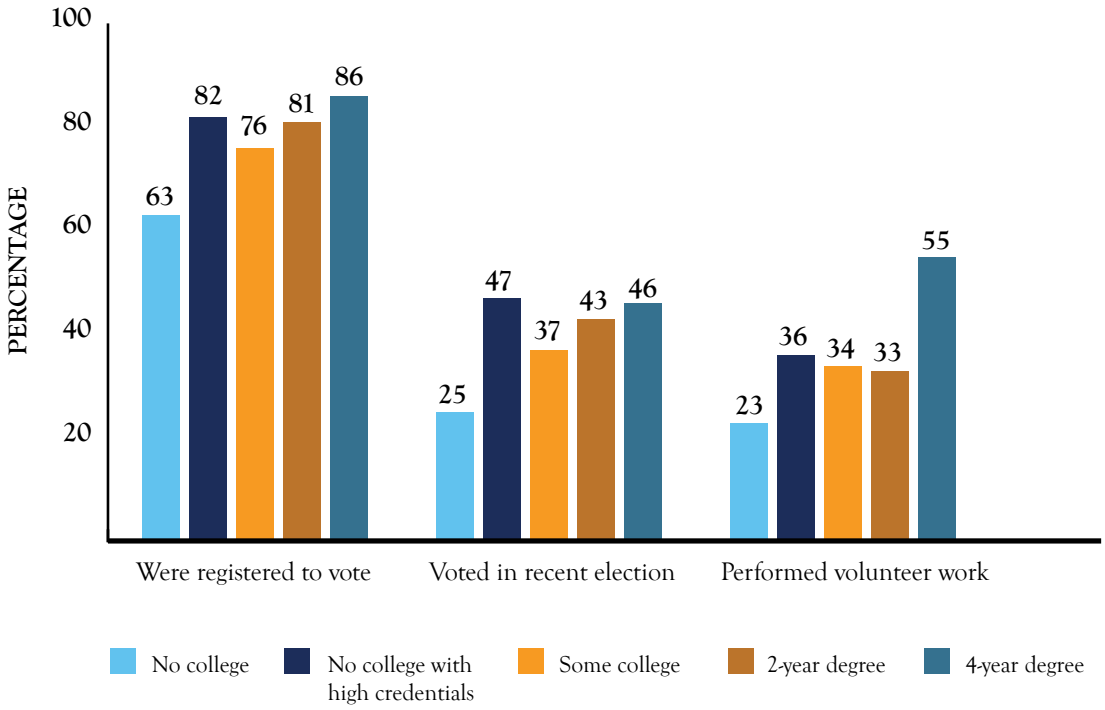
CHART 5: Hourly wage of college goers without a degree (at age 26)



While the average non-college goer is less socially engaged as their classmates who went on to college whether they earned a degree or not, when the non-college goer was also *highly credentialed* their social engagement was typically quite similar. This shows that there are benefits associated with going on to college whether a degree is earned or not, but similar success in social engagement can also be found by being well prepared in high school and obtaining job skills (see Chart 6).

CHART 6: Civic participation of high school graduates at age 26 by education attainment

High credentialed non-college goers are as likely to vote as their peers with college degrees.



Rigorous high school preparation vital to future success of all graduates

While a number of factors impact the future economic success and social engagement of high school graduates, this report provides more evidence that a solid high school preparation plays an important role.

Clearly, high school graduates who complete rigorous math and science courses, earn good grades, complete multiple vocational courses focused on enhancing a specific job skill, and obtain a professional certification can be as, or more, successful than college goers, degreed or not. Without these *high credentials*, high school graduates have a much lower likelihood of finding economic success and being socially engaged than their peers.

For today's students to truly graduate college and career ready, high schools must ensure all students complete a rigorous curriculum that includes math at least through Algebra II or its equivalent and high-level lab sciences. They should also have access to modern career technical education programs focused on building knowledge and skills in a specific labor market field. Guidance counselors have an essential role by communicating the varied options to middle- and high-school students, including college and good jobs, and making sure students stay on track toward meeting their individual goals. While this report is not meant to be prescriptive, the data plainly shows that when high schools offer a diverse, rigorous and supportive learning environment, all students succeed.

What educators and policymakers should know

High-level math and science courses are not just for college goers

Advanced math and science courses are not just essential for getting into and succeeding in college; they are the most important for non-college goers, who best the average non-college goers by double digits in every category of what we determined to be "success."

Vocational training should focus on specific job skills

Completing an assortment of vocational courses does not provide students with the job skills they need to be successful after high school. Vocational courses should focus on a specific labor market area just as selecting a major does in college.

Vocational courses are not just for non-college goers

Most high school graduates would benefit from completing vocational courses even if they intend on going to college, as nearly half of college goers fail to earn a two- or four-year degree. Without earning a degree, college goers are far less likely to find success—while carrying an increased debt burden—if they hadn't acquired specific job skills. Vocational courses would benefit future college grads, too, as more four-year degree holders are heading back to two-year colleges to obtain more specific job skills.[5]

All students should graduate truly college and career ready

If anything, the Path Least Taken series has shown life doesn't always go according to plan. Many high school students who expected to go on to college when they were in high school never did. A number of high school students who hadn't planned on further schooling actually did enroll by the end of the study. And a growing segment of college graduates are going back to school to become more marketable.

[5] Krupnick, M. "Graduates of four-year universities flock to community colleges for job skills," Hechinger Report, October 25, 2015.

Jim Hull is the former senior policy analyst at the Center for Public Education. Naomi Dillon is CPE's managing editor.

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Methodology

Data from the U.S. Department of Education's National Center for Education Statistics' (NCES) Education Longitudinal Study of 2002 (ELS) was used to determine the impact high schools have on the employment success of their non-college enrollees. ELS is a longitudinal study that followed a nationally representative sample of high school sophomores in 2002 through 2012.

Data from ELS was used to identify those students who graduated high school in 2004 but had not enrolled in college by 2012 when most respondents were 26 years old. Information from student high school transcripts that were collected as a part of ELS were used to identify the highest level math and science course each student earned of at least a half a credit. The student transcript data also provided each student's Grade Point Average (GPA) which NCES standardized into 0.0 to 4.0 scale. We report the results for groups of non-college goers who earned either less than a cumulative 1.5 (low credentials) or between 2.51 and 3 (high credentials). A small number of individuals earned a higher GPA but they were so few that the results were not reliable and so were not included.

The ELS Postsecondary Transcript dataset was used to identify on-time high school graduates who earned a two- or four-year degree or enrolled in a two- or four-year college without earning a degree by age 26. If a high school graduate had earned both a two-year and four-year degree that graduate was classified as a four-year degree holder. Furthermore, if a graduate had enrolled in both a two-year and four-year college without earning either a two- or four-year degree by age 26 the graduate was classified as a four-year non-completer.

The report includes information about whether a respondent earned a professional certification or license by age 26 that was included in ELS when respondents were surveyed in 2012. The ELS variable Occupation Concentrator was included in the report. The variable was created by NCES to indicate whether or not the student had earned at least three credits in one specific labor market preparation area. Lastly, the report included the student demographic variables race/ethnicity and socioeconomic status as reported in the ELS dataset.

To measure the impact a non-college enrollee's preparation had on their postsecondary successes, a logistic regression was conducted using SPSS's Complex Sample module except for the Standard Hourly Wage outcome for which a general linear regression was conducted. For each outcome measure three logistic regression models were constructed: 1) baseline 2) race/ethnicity (race), and 3) socioeconomic status (SES). The baseline model included the variables highest math course, highest science course, GPA, professional certification/license, and occupation concentrator variables. Race and SES variables were added to the baseline variables in the race and SES models respectively. Results from each of the logistic regression models were used to calculate Predicted Probabilities, which is the output used throughout this report.