Trends in Higher Education Series

Education Pays 2010

The Benefits of Higher Education for Individuals and Society

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Technical Notes

Education level: The categories describing education level always refer to the highest level of education attained, unless otherwise specified. For example, the term high school graduate is used to describe those who graduated from high school but have no college experience.

Not a high school graduate: Some data sources divide non-high school graduates into "less than ninth grade" and "ninth through twelfth grades." In these cases, we use a weighted average based on the relative sizes of the two groups to generate the data for all individuals with less than a high school diploma.

High school graduates include recipients of the General Educational Development (GED) diploma.

Some college: Education categories sometimes include "some college no degree" and "associate degree." In other cases, there is one category for "some college or associate degree." Available data prior to 1992 define educational attainment by years of study, making it impossible to determine which students with 14 years of education, for example, earned an associate degree and which did not.

Professional degrees include MD, DDS, DVM, LLB, and JD.

Doctorate-granting institutions: Universities that offer graduate Ph.D. programs, emphasize research, and generally have more selective admission requirements than most four-year colleges that do not offer doctoral programs.

Flagship institutions: These institutions are typically the best-known institutions in the state, were generally the first to be established, and are frequently the largest and most selective, as well as the most research-intensive public universities.

Moving averages: Moving averages are calculated as the average of the identified year and the two preceding years. An alternative methodology would average the specified year with the preceding year and the succeeding year.

Rounding: All dollar figures have been rounded to the nearest $100.

Acknowledgments

This report would not have been possible without the support and hard work of many individuals and organizations. We are particularly grateful to Diane Elliott, Kathleen Little, and Anne Sturtevant for their invaluable assistance. We are also grateful to the researchers who generously gave us permission to cite and reproduce their findings. We appreciate the contributions of Annika Many, Christen Pollock, Tom Rudin, and Anne Sussman at the College Board. The design and production skills of Laura Horn and the staff at MPR Associates, together with the staff of KSA-Plus Communications made the publication possible.

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Education Pays 2010

The Benefits of Higher Education for Individuals and Society

Foreword

The College Board is pleased to release the third edition of *Education Pays: The Benefits of Higher Education for Individuals and Society.* Like the original 2004 edition and the 2007 edition, this report documents the returns both individual students and society as a whole receive from investments in higher education.

As part of our mission to connect students to college success and opportunity, the College Board provides reliable and relevant information and policy analysis to the public and to the education community. Considerable attention is currently focused on the difficulties facing state and federal governments, students, and families attempting to finance higher education in a weak economy. Colleges and universities are also facing challenges as they try to balance their budgets and help students continue their education.

In this environment, we are working to help keep the critical role of higher education in the future of our economy and our society in the foreground. The pages that follow illustrate some of the economic and noneconomic gains we enjoy from our investments in higher education and the benefits we forgo when educational opportunities are too limited.

Education Pays focuses on nonmonetary benefits in addition to the financial returns of higher education. The second part of the report details differences across demographic groups and changes over time in participation and success rates in postsecondary education. The report updates information included in previous editions and adds some new perspectives.

Education Pays was written by Sandy Baum, independent policy analyst for the College Board and professor emerita of economics at Skidmore College, and Jennifer Ma and Kathleen Payea, independent policy analysts for the College Board.

The responses we have received to earlier editions of *Education Pays* are gratifying, and the extensive use that researchers, policymakers and advocates for education have made of the information we provide reassures us that studies such as this one are well worthwhile. This report supplements our annual publications, *Trends in Student Aid* and *Trends in College Pricing.* All of these reports are designed to provide a foundation of evidence to strengthen both policy discussions and individual decisions. We look forward to the conversations that these analyses will evoke.

Sincerely,

Gaston Caperton
President

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Executive Summary

Students who attend institutions of higher education obtain a wide range of personal, financial, and other lifelong benefits; likewise, taxpayers and society as a whole derive a multitude of direct and indirect benefits when citizens have access to postsecondary education. Accordingly, uneven rates of participation in higher education across different segments of U.S. society should be a matter of urgent concern not only to the individuals directly affected, but also to public policymakers at the federal, state, and local levels.

This report presents detailed evidence of the private and public benefits of higher education. It also sheds light on the distribution of these benefits by examining both the increases and the persistent disparities in college participation and completion.

This Executive Summary highlights some of the key ideas in the report.

The Benefits of Higher Education

Individuals with higher levels of education earn more and are more likely than others to be employed.

- Median earnings of bachelor's degree recipients working full-time year-round in 2008 were $55,700, $21,900 more than median earnings of high school graduates.
- Individuals with some college but no degree earned 17% more than high school graduates working full-time year-round. Their median after-tax earnings were 16% higher.
- For young adults between the ages of 20 and 24, the unemployment rate in the fourth quarter of 2009 for high school graduates was 2.6 times as high as that for college graduates.

The financial return associated with additional years of schooling beyond high school and the gaps in earnings by education level have increased over time.

- In 2008, median earnings for women ages 25 to 34 with a bachelor's degree or higher were 79% higher than median earnings for women with a high school diploma. The earnings premium for men was 74%. These earnings differentials were 60% and 54%, respectively, a decade earlier.
- The median hourly wage gain attributable to the first year of college, adjusted for race, gender, and work experience, increased from an estimated 8% in 1973 to about 10% in 1989, and 11% in 2007.

Federal, state, and local governments enjoy increased tax revenues from college graduates and spend less on income support programs for them, providing a direct financial return from investments in postsecondary education.

- In 2008, 8% of high school graduates ages 25 and older lived in households that relied on the Food Stamp Program, compared to just over 1% of those with at least a bachelor's degree. The pattern was similar for the National School Lunch Program.
- Spending on social support programs and incarceration costs are much lower for college graduates than for high school graduates. Estimated lifetime savings range from $32,600 for white women to $108,700 for black men. The gains in tax revenues produced by a more educated population are even greater.

College-educated adults are more likely than others to receive health insurance and pension benefits from their employers and be satisfied with their jobs.

- In 2008, about 58% of college graduates and individuals with some college education or an associate degree reported being very satisfied with their jobs, while 50% of high school graduates and 40% of individuals without a high school diploma reported being very satisfied.

Adults with higher levels of education are more active citizens than others.

- Both the percentage of people who donate their time to organizations and the number of hours people spend in volunteer activities are higher among individuals with higher levels of education.

College education leads to healthier lifestyles, reducing health care costs for individuals and for society.

- Within each age group, college-educated adults are less likely than others to be obese. In addition, children living in households with more educated parents are less likely than other children to be obese.
- During the decade from 1998 to 2008, the smoking rate declined from 14% to 9% among adults with at least a bachelor's degree, while the rate for high school graduates declined from 29% to 27%.

College-educated parents engage in more educational activities with their children, who are better prepared for school than other children.

- Among parents whose highest degree was a bachelor's degree, 68% read to their children daily in 2007. This compares to 57% of parents with an associate degree, 47% of parents with some college but no degree, 41% of high school graduates, and 26% of parents who did not complete high school.

Substantial evidence indicates that the associations described here are the result of increased educational attainment, not just of individual characteristics.

Participation and Success in Higher Education

Although college enrollment rates continue to rise, large gaps persist across demographic groups.

- The college enrollment rate of high school graduates from the lowest family-income quintile increased from 51% in 1998 to 55% in 2008. The rate for middle-income students declined from 63% to 61%, while 79% of the highest-income high school graduates enrolled in college in 1998 and 80% enrolled in 2008.
- From 1998 to 2004, the gap between the proportions of white and black high school graduates who enrolled in college within a year fluctuated between 8 and 10 percentage points. By 2008, the gap had grown to about 14 percentage points.
- From 2000 to 2004, the gap between the proportions of white and Hispanic high school graduates who enrolled in college within a year narrowed from 19 to 10 percentage points. By 2008, the gap had declined to 8 percentage points.

Enrollment patterns differ across income groups, and graduation rates vary by institution type.

- About 40% of dependent undergraduate students from families with incomes below $40,000 enrolled in public two-year colleges in 2007-08, and 8% enrolled in for-profit institutions. In contrast, 17% of undergraduate students from families with incomes of $120,000 or higher enrolled in public two-year colleges, and 1% attended for-profit institutions.
- Of first-time full-time students who began studying for a bachelor's degree at a four-year institution in 2002, 57% earned this degree within six years from the institution at which they began their studies. Completion rates averaged 65% at private not-for-profit, 55% at public four-year, and 22% at private for-profit institutions.

College completion rates differ considerably by family income, parental education level, and type of institution attended.

The proportion of adults in the United States between the ages of 25 and 34 with a four-year college degree held steady at 24% in the 1980s, but grew from 29% in 2000 to 32% in 2009.

Education Pays 2010

Introduction

Education Pays 2010 contains data on the financial and nonfinancial benefits of postsecondary education. The indicators in this report provide up-to-date information about earnings, employment and unemployment patterns, and nonwage attributes associated with the jobs held by people with different levels of education. Because many of the changes that education engenders in people's lives are outside of their work lives, we report on health and lifestyle influences as well. Much of the information in this report pertains to the benefits that accrue to society as a whole when more people are college educated. Data on the increases in tax revenues and the reductions in public expenditures associated with increased levels of education help to make the return to public investment in higher education more concrete. The frequencies of smoking, obesity, voting, volunteering, and participating in educational activities with children are also among the wide range of differences in the opportunities, choices, and behaviors influenced by participation in and completion of higher education documented here.

Like the College Board's *Trends in College Pricing* and *Trends in Student Aid* reports, *Education Pays* collects and reports data. Some of the benefits of higher education documented in this report are widely cited; others are less well known. We bring publicly available government statistics together with less familiar academic research in order to paint a detailed and integrated picture of the benefits of higher education and how they are distributed. Where possible, we have summarized complex analyses in a manner consistent with the straightforward presentation style of this report. We provide references to more in-depth and sophisticated analyses so that readers can pursue issues of particular interest.

Education Pays is intended as a resource and a reference for anyone interested in understanding the value of investments in higher education and how different groups in society benefit from those investments. Readers will draw their own inferences about the public policies most consistent with the evidence provided.

The Payoff of Higher Education

In this introduction, we take the opportunity to provide our interpretation of the evidence we have gathered. In the three years since we published *Education Pays 2007,* median earnings for four-year college graduates have increased more rapidly than those of high school graduates. The 2.3 percentage point difference between the unemployment rates for high school graduates and bachelor's degree recipients we reported for 2006 increased to 5.1 percentage points in 2009. Yet, questions have intensified about whether going to college is worthwhile and whether it is appropriate to encourage young people who are on the fence about continuing their education after high school to attend college. We believe it is critical that more people be in a position to examine for themselves the evidence of the benefits of a college degree, rather than relying on the opinions of others — opinions that are too frequently grounded in ideology and anecdotes rather than evidence.

It is both reasonable and constructive to ask whether and for whom the expense of postsecondary education is a good investment. Published tuition prices have been rising rapidly. As documented in *Trends in College Pricing,* public four-year college prices in particular have risen at very high rates in the past few years. But, while all expenses associated with going to college continue to rise, the average net price students pay for tuition and fees at both public and private colleges — after accounting for grant aid and tax benefits — has actually declined in recent years.

Our calculation in Figure 1.3 compares the median cumulative earnings of high school graduates to those of college graduates and finds that by about age 33 — after 11 years of work — higher earnings compensate not only for four years out of the labor force, but also for average tuition and fee payments at a public four-year university funded fully by student loans at 6.8% interest. The earnings of associate degree recipients lead to a crossover at about the same age — after more years of work despite the lower tuition payments — because of the smaller earnings premium. Modifying the assumptions underlying these calculations might slightly lengthen or shorten the time required to make up the investment. The key point is that for the typical student, the investment pays off very well over the course of a lifetime — even considering the expense.

Perhaps even more important, increased earnings are by no means the only positive outcome of higher education. The knowledge, fulfillment, self-awareness, and broadening of horizons associated with education transform the lives of students and of those with whom they live and work. The difficulty in quantifying these outcomes or translating them into dollars and cents should not lead us to neglect these contributions from higher education. Our society would become immeasurably poorer if financial pressures were to lead us to think of higher education as synonymous with job training. The indicators in *Education Pays*, both financial and nonfinancial, are limited to those that can be easily quantified only because of the format of the publication. Our intent is not to minimize the importance of the less tangible or quantifiable outcomes of education. A thorough and coherent view of the benefits on which we focus highlights the significance of our society's investment in higher education and provides a broader grounding for public policy deliberations.

The Evidence

Too often, colorful anecdotes about individuals who have had unfortunate experiences capture the spotlight and lead to inaccurate generalizations about the dangers of making this major life investment. Journalists tell compelling stories of students who borrow large sums of money only to find that they are ill-equipped to complete their studies, or who graduate from college and are unable to find appropriate employment. It is no surprise that these stories exist; they are real and they are painful. But frequently, these stories are used to convey the notion that the costs of a postsecondary degree outweigh the benefits, and for most people this simply is not true. Figure 1.5 in *Education Pays 2010* shows not only median earnings for men and women with different levels of education, but the range of earnings of the middle 50% at each level. Our analysis notes that although 14% of male high school graduates earned as much as or more than the median earnings of male four-year college graduates in 2008 ($65,800), 86% earned less. About 20% of male four-year college graduates earned less than the median earnings of high school graduates ($39,000), while 80% earned more. Figure 1.10a shows that the unemployment rate for college graduates rose sharply, from 2.6% to 4.6%, between 2008 and 2009. But the unemployment rate for high school graduates rose from 5.7% to 9.7% at the same time. The data may not be as colorful as the anecdotes, but they tell a more realistic story. They also allow for a better understanding of which students and which circumstances are most likely to create the stories of the outliers who attract so much attention.

College Completion

Another reason for doubts about the benefits of higher education is that increasing college enrollment rates over time for all demographic groups have been accompanied by

Introduction *(cont.)*

persistently low degree-completion rates. In *Education Pays 2010,* we provide a variety of indicators of college completion and educational attainment. No one measure is perfect, but it is clear both that many people enroll in college and never earn a degree, and that the gaps in completion rates by family income level, parental education level, and race/ethnicity are large. High school graduates from low- and moderate-income families are much less likely than those from higher-income families to enroll in college, and the gaps in completion rates are even larger. Unfortunately, this very real problem has led some observers to the unwarranted conclusion that people who do not have strong academic preparation, who do not have the required financial resources, or who are unfamiliar with the expectations and requirements of colleges and universities should not pursue postsecondary education.

Research tells us otherwise. Numerous economic analyses indicate that students who, because of their demographic characteristics and academic experiences, hesitate to go to college stand to benefit the most from a postsecondary degree. This finding does not imply that individuals on the margin of college attendance will end up earning more than those who knew from an early age that they would attend college. It means that the incremental gain in their earnings resulting from a college education is larger. It is relatively rare for young people whose parents are affluent — or even middle-class — college graduates to skip college altogether. Those who choose not to enroll have usually actively considered and rejected the option. But for too many low-income and first-generation students, financial and logistical barriers loom so large that the possibility never seems realistic. Many of these students would likely benefit from appropriate postsecondary educational opportunities.

First-generation students and those from low-income backgrounds frequently lack the information needed to make the best choices when they do enroll in college. As the indicators in Part 2 of *Education Pays* reveal, many students enroll in colleges that are less selective and less challenging than those to which they would likely be admitted based on their academic qualifications, reducing the probability that they will earn bachelor's degrees. Figures 2.6a and 2.6b provide information on the differences in completion rates at different types of institutions.

It is also important not to discount the value of college experience even for those students who do not earn a degree. As Figure 1.7b suggests, although the payoff for earning a college credential is highest, the median return to each additional year of postsecondary schooling is significant. In other words, the solution is not to advise students to forgo college because they might not graduate. It is to provide better information and advice — and more generous financial support — to increase their chances of success. And of primary importance, all students need and deserve higher-quality academic preparation before they reach the college decision stage.

Solid evidence indicates that our main focus should be providing opportunities for postsecondary preparation and access, and supporting more students in making choices that will allow them to maximize their postsecondary education success.

Understanding the Evidence

Many of the graphs in this report compare the experiences of people with different education levels. In general, while simple descriptions of correlations provide useful clues, they do not reliably determine causation or measure the exact size of the effects. They are best interpreted as providing broadly gauged evidence of the powerful role that higher education plays in the lives of individuals and in society. That said, a growing body of evidence points to the direct impact of higher education not only on specific job-related skills, but also on the attitudes and behavior patterns of students. Education enables people to better adapt to change. It also makes them more likely to take responsibility for their health, to take responsibility for the society in which they live, and to parent in ways that improve the prospects for their own children.

The evidence is overwhelming that higher education improves people's lives, makes our economy more efficient, and contributes to a more equitable society. The existing gaps in participation and success are detrimental not only to individual lives, but also to society as a whole. Different paths are appropriate for different individuals, and our challenge is to make the most promising paths readily available to students from all backgrounds. We will all be better off if we continue to make progress in this direction.

Part 1:
Individual and Societal Benefits of Higher Education

The benefits of investments in higher education are shared by individual students and the societies of which they are a part. Individuals with college degrees, and to a lesser extent those who have some college experience but do not have a degree, earn more than others and enjoy better working conditions. They contribute more to society, both through higher tax payments and through their civic participation. College-educated adults also give their children benefits that increase the prospects that the next generation will prosper and will be in a position to contribute to society in a variety of ways.

The indicators in Part I of *Education Pays* document the financial benefits of college participation and success and other ways in which higher education improves the lives of students and those around them.

Earnings are too often emphasized as the primary benefit of higher education, and may overshadow other outcomes that could well be more important. Nonetheless, the price of college makes an understanding of the financial benefits critical, and several of the following pages focus on earnings differences corresponding to levels of educational attainment. On average, each year of education and each credential add measurably to an individual's earnings. During their working lives, typical college graduates earn about 66% more than typical high school graduates, and those with advanced degrees earn two to three times as much as high school graduates.

Salaries are not the only form of compensation correlated with education level. For example, college graduates are more likely than other employees to enjoy employer-provided health and pension benefits. They are more satisfied with their jobs than others. These findings do not mean that there are no exceptions to the rule. Some individuals make fortunes despite little formal education, and some struggle financially, even with a college education. As Figure 1.5 illustrates, there is considerable variation in earnings among people with the same level of education. But the overall patterns are clear and dramatic — more education means increased opportunities. Although it requires the considerable investment of dollars, time and effort, higher education significantly improves the lives of most who participate.

Society as a whole also enjoys a financial return on the investment in higher education. In addition to widespread productivity increases, the higher earnings of educated workers generate higher tax payments at the local, state, and federal levels. The typical college graduate pays, on average, 80% more in taxes each year than the typical high school graduate. Spending on social support programs such as unemployment compensation, food stamps, and Medicaid is much lower for individuals with higher levels of education.

While the indicators in this section report relationships between education and outcomes and not precise measures of causation, a large body of reliable research provides evidence that most of the differences in outcomes are, in fact, the result of individuals' education. The evidence is compelling that postsecondary education not only provides valued credentials, but also increases skills and knowledge and changes the way people approach their lives.

Beyond the economic return to individuals and to society as a whole, higher education improves quality of life in a variety of ways, only some of which can be easily quantified. High levels of labor force participation, employment, and earnings increase the material well-being of individuals and the wealth of society, but also carry psychological benefits. Adults with higher levels of education are more likely to engage in organized volunteer work and to vote. They are also more likely to live healthy lifestyles. The issue is not just that they earn more and have better access to health care; college-educated adults smoke less, exercise more, are more likely to breast-feed their babies, and have lower obesity rates. These differences not only affect the lifestyles and life expectancies of individuals, but also reduce medical costs for society as a whole. Of particular significance, children of adults with higher levels of education have higher cognitive skills and engage in more educational activities than other children. In other words, participation in postsecondary education improves the quality of civil society.

The indicators included here do not provide a comprehensive measure of the benefits of higher education. They do, however, provide an indication of the nature and extent of the return on our investment in educational opportunities.

Education, Earnings, and Tax Payments

Higher levels of education lead to both higher levels of earnings for individuals and higher tax revenues for federal, state, and local governments.

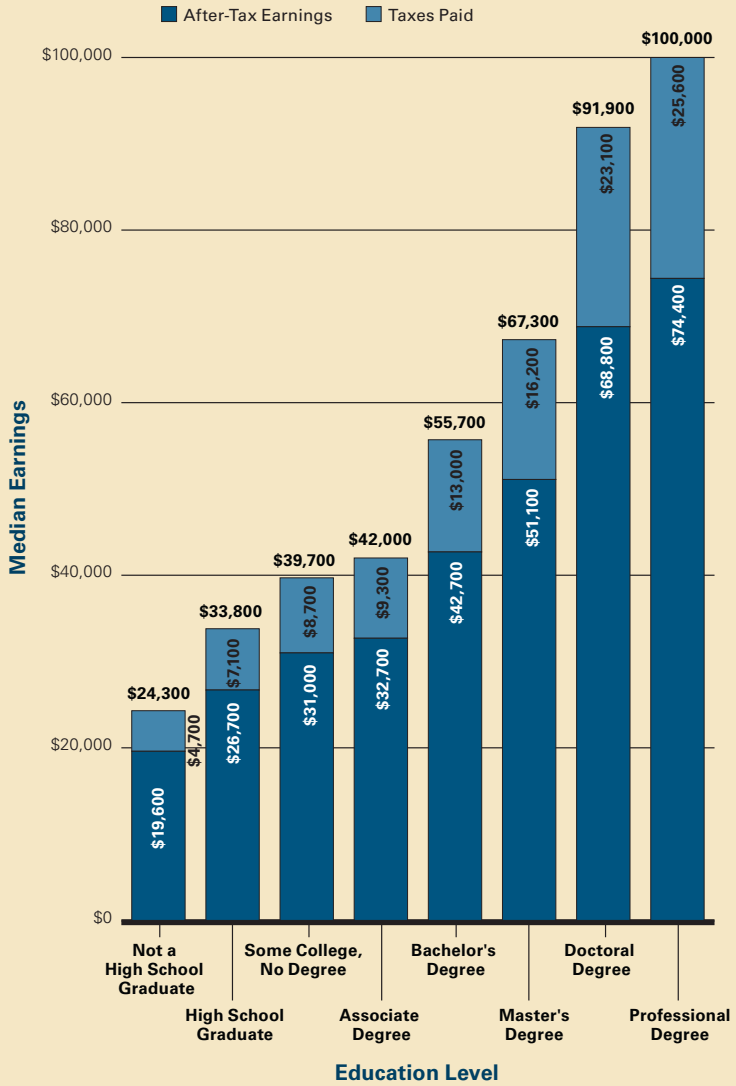
- The median earnings of bachelor's degree recipients working full-time year-round in 2008 were $55,700, $21,900 more than the median earnings of high school graduates.
- About $5,900 of the additional $21,900 in earnings of four-year college graduates went to federal, state, and local governments in the form of higher tax payments. Median after-tax earnings were $16,000 higher for those with a bachelor's degree than for those with only a high school diploma.
- Individuals with some college but no degree earned 17% more than high school graduates working full-time year-round. Their median after-tax earnings were 16% higher.
- The median total tax payments of full-time workers with a professional degree in 2008 were over three and a half times as high as the median tax payments of high school graduates working full-time. After-tax earnings were almost three times as high.
- Individuals with higher levels of education are more likely to have earnings and more likely to work full-time year-round. Including all adults or all working adults in this figure would increase the income differences associated with higher levels of education.
- Eighty percent of college graduates ages 25 or older had earnings in 2008 and 60% worked full-time year-round. Sixty-three percent of high school graduates ages 25 or older had earnings, and 44% worked full-time year-round.

Also important:

- All of the differences in earnings reported here may not be attributable to education level. Education credentials are correlated with a variety of other factors that affect earnings, including, for example, parents' socioeconomic status and some personal characteristics.
- While the average high school graduate might not increase his or her earnings to the level of the average college graduate simply by earning a bachelor's degree, careful research on the subject suggests that the figures cited here do not measurably overstate the financial return of higher education (Carneiro et al., 2003; Rouse, 2005; Harmon et al., 2003).

Figure 1.1

Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2008



The bars in this graph show median earnings at each education level. The lighter segments represent the estimated average federal, state, and local taxes paid at these income levels. The darker segments show after-tax earnings.

Note: Taxes paid include federal income, Social Security, Medicare, state and local income, sales, and property taxes.

Sources: U.S. Census Bureau, 2009; Internal Revenue Service, 2008; Davis et al., 2009; calculations by the authors.

Lifetime Earnings

The typical bachelor's degree recipient can expect to earn about 66% more during a 40-year working life than the typical high school graduate earns over the same period.

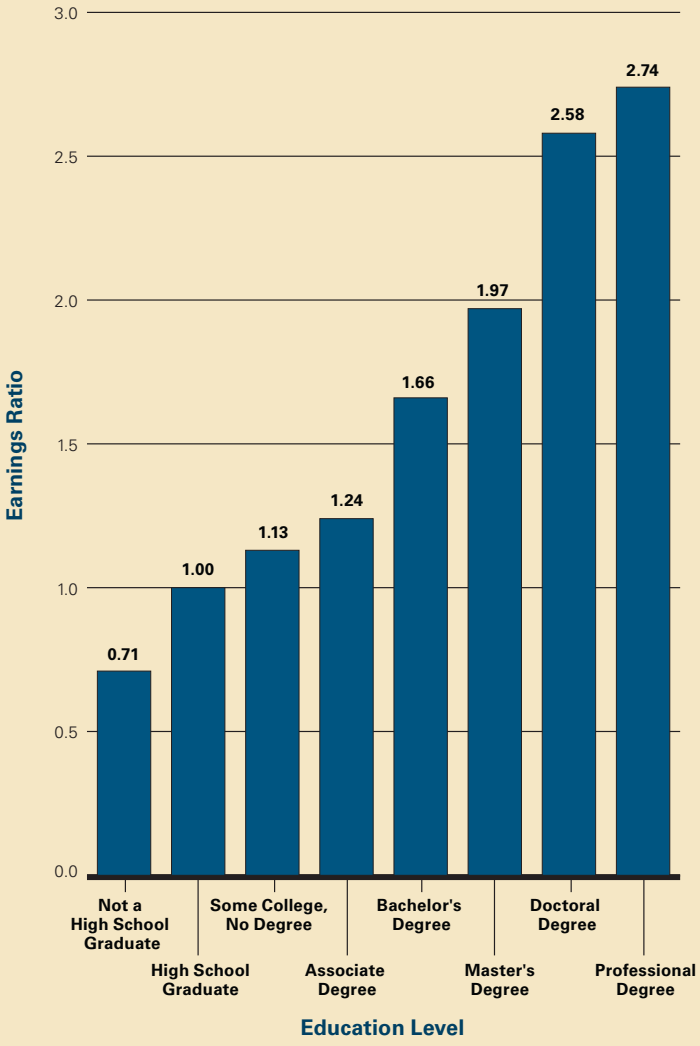
- The calculations in Figure 1.2 are based on earnings of individuals working full-time year-round. Because the proportion of adults working full-time year-round increases with education level (for example, 67% of college graduates and 55% of high school graduates between the ages of 45 and 54 worked full-time in 2008), the lifetime earnings differentials would be larger if all adults — or all adult workers — were included in these calculations.
- As Figure 1.1 reports, higher earnings correspond to higher tax payments. If after-tax earnings were used in this calculation, the ratio of lifetime earnings for individuals with more than a high school diploma to lifetime earnings for high school graduates would decline slightly.

Also important:

- There are a variety of ways to estimate lifetime earnings for people with different levels of education. Although some reasonable assumptions would lower the ratios shown here and other reasonable assumptions would increase those ratios, the results consistently reveal significantly higher earnings levels associated with higher levels of education.
- A number of careful studies show that people who are kept out of college by barriers like a shortage of funds or the absence of nearby appropriate colleges earn higher than average returns when the barriers are lowered. In other words, the idea that students who are not enrolling in college would be unlikely to enjoy the average benefits reported here is not supported by the evidence (Brand and Xie, 2010).

Figure 1.2

Expected Lifetime Earnings Relative to High School Graduates, by Education Level



Note: Based on the sum of median 2008 earnings for full-time year-round workers at each age from 25 to 64 for each education level. No allowance is made for the shorter work life resulting from time spent in college or out of the labor force for other reasons. Future earnings are discounted at a 3% annual rate to account for the reality that, because of forgone interest, dollars received in the future are not worth as much as those received today. This represents real interest, as all earnings are in 2008 dollars. Discounting does not have a large impact on the lifetime earnings ratios.

Sources: U.S. Census Bureau, 2009; calculations by the authors.

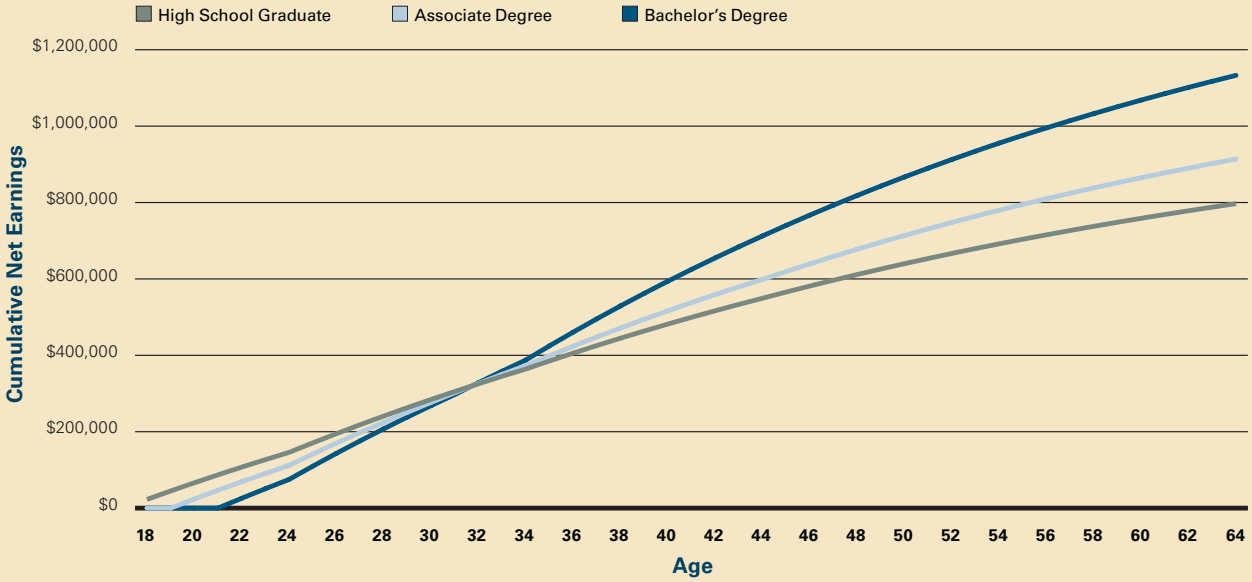
Earnings Premium Relative to Price of Education

Compared to a high school graduate, the typical four-year college graduate who enrolled at age 18 has earned enough by age 33 to compensate for being out of the labor force for four years, and for borrowing the full amount required to pay tuition and fees without any grant assistance.

- For the typical student who borrows to cover tuition and fees at a community college and earns an associate degree two years after high school graduation, total earnings net of loan repayment exceed the total earnings of high school graduates by age 33, after 13 years of work.
- Many students take longer than two years to earn an associate degree or longer than four years to earn a bachelor's degree. More time out of the labor force increases the amount of time required to compensate for lost earnings.
- If the earnings of all adults at each level of education are considered — instead of only those working full-time year-round — the typical four-year college graduate makes up for time out of the labor force and for paying tuition by age 30.
- In 2008, 43% of full-time students at four-year colleges and 53% of full-time students at two-year colleges were employed (NCES, 2010). Earnings during college reduce the amount of time required to compensate for lost earnings.

Figure 1.3

Estimated Cumulative Earnings Net of Loan Repayment for Tuition and Fees, by Education Level



The gray line shows cumulative median earnings at each age for a high school graduate who enters the workforce full-time at age 18. The dark blue line shows cumulative median earnings at each age for a college graduate who enters the workforce at age 22 after four years out of the labor force. Loan payments are subtracted from earnings for the first 10 years after graduation, covering both the principal and 6.8% interest charges incurred during and after college. The light blue line shows the same calculation for a student who borrows to cover two years of tuition and fees at a public two-year college and enters the workforce at age 20.

Note: Based on median 2008 earnings for individuals working full-time year-round at each education level and each age. Excludes bachelor's degree recipients who earn advanced degrees. Assumes the college graduate borrows the entire 2008–09 average tuition and fees of $6,591 for the first year at a public four-year college and 5% more each of the following three years. Assumes the associate degree recipient borrows the $2,372 2008–09 average tuition and fees at a public two-year college and 5% more the following year. Tuition payments and earnings are discounted at 3 percent, compounded every year beyond age 18. This discount rate represents real interest, as all earnings are in 2008 dollars.

Sources: U.S. Census Bureau, 2009; The College Board, 2009; calculations by the authors.

Also important:

- About two-thirds of full-time students receive grants to help them pay for college.
- The calculation in Figure 1.3 is based on the assumption that students borrow total tuition and fees for their college education. The actual student loan debt may be more or less than the total tuition and fees assumed here. In 2007–08, median debt for the two-thirds of bachelor's degree recipients who borrowed was $20,000, compared to the $28,400 assumed here. Median debt for the 48% of associate degree recipients who borrowed was $8,500, compared to the $4,900 assumed here.

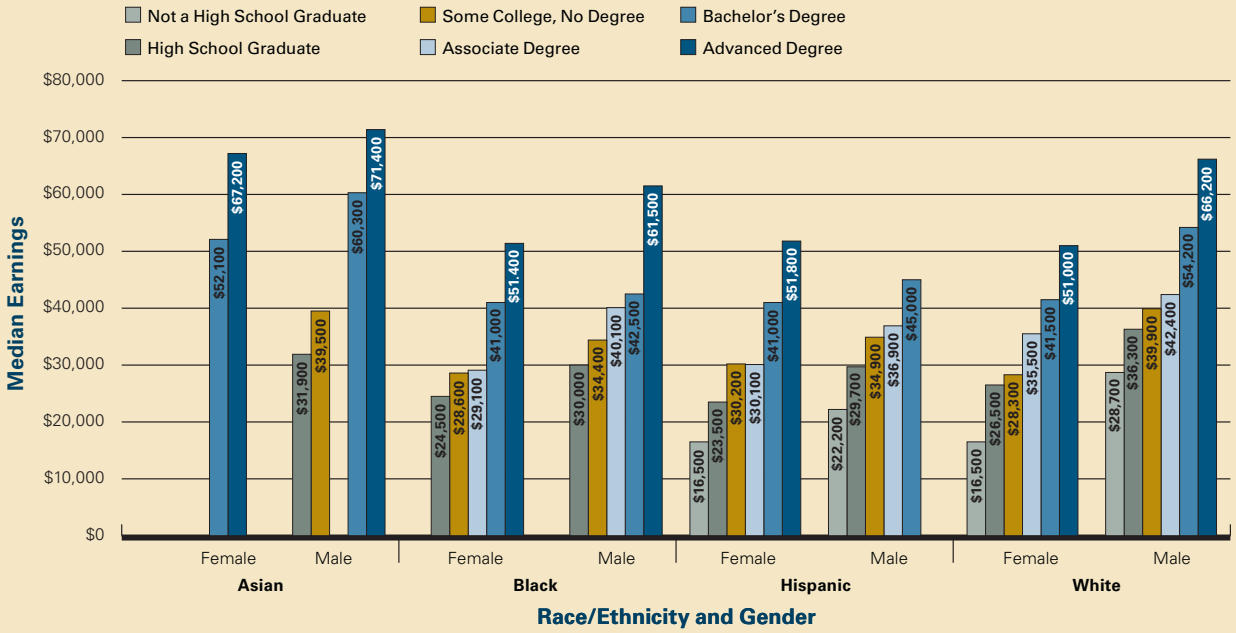
Earnings by Education Level, Race/Ethnicity, and Gender

Median earnings for Asian men between the ages of 25 and 34 with a four-year college degree working full-time year-round in 2008 were about 90% higher than median earnings for Asian men with a high school diploma. The college earnings premium for white and Hispanic males was about 50%.

- The college earnings premium for black males was smaller, about 42%, or $12,500, per year.
- The college earnings premium was higher for Hispanic women than for other women, with bachelor's degree recipients working full-time year-round earning 74% ($17,500 per year) more than high school graduates.
- The earnings differential between high school graduates and those with some college but no degree ranged from 7% ($1,800) for white women to 29% ($6,700) for Hispanic women.
- The earnings differential between high school graduates and associate degree recipients ranged from 17% ($6,100) for white men to 34% ($10,100) for black men and 34% ($9,000) for white women.
- Median earnings for 25- to 34-year-old white male high school graduates working full-time year-round were 37% higher than median earnings for similar women. Among bachelor's degree recipients, the gender gap was 31%.
- For all racial/ethnic groups, the difference between median earnings for men and women was smaller for four-year college graduates than for high school graduates. For high school graduates, the gap ranged from 22% for blacks to 37% for whites; for bachelor's degree recipients, the gap ranged from 4% for blacks to 31% for whites.

Figure 1.4

Median Earnings of Full-Time Year-Round Workers Ages 25–34, by Race/Ethnicity, Gender, and Education Level, 2008



Note: Sample sizes for the following groups are too small to allow reliable reporting: Asian females with less than a bachelor's degree, Asian males with less than a high school diploma, Asian males with an associate degree, black females with less than a high school diploma, black males with less than a high school diploma, and Hispanic males with an advanced degree.

Sources: U.S. Census Bureau, 2009; calculations by the authors.

Earnings by Education Level and Gender

Earnings of full-time year-round workers are strongly correlated with level of education, but there is considerable variation in earnings among both men and women at each level of educational attainment.

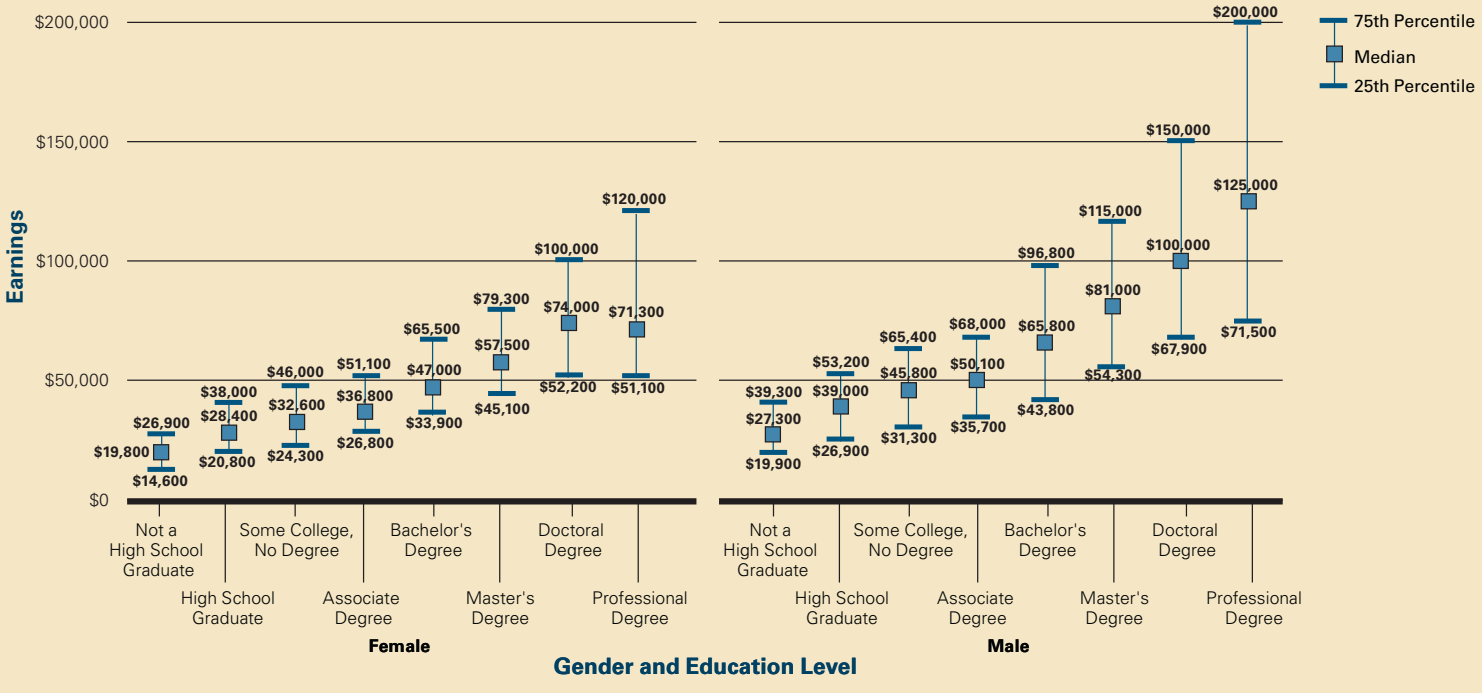
- Although 14% of male high school graduates earned as much as or more than the median earnings of male four-year college graduates in 2008 ($65,800), 86% earned less. About 20% of male four-year college graduates earned less than the median earnings of male high school graduates ($39,000), while 80% earned more.
- Although 13% of female high school graduates earned as much as or more than the median earnings of female college graduates in 2008 ($47,000), 87% earned less. About 16% of female four-year college graduates earned less than the median earnings of female high school graduates ($28,400), while 84% earned more.
- About 61% of males with some college education but no degree and 68% of males holding associate degrees earned more than the median earnings of male high school graduates in 2008.
- About 67% of females with some college education but no degree and 75% of females holding associate degrees earned more than the median earnings of female high school graduates in 2008.

Also important:

- Figure 1.5 includes only full-time year-round workers ages 25 and older. Among both men and women, the percentage employed rises with level of education, as does the percentage of those employed who are working full-time (BLS, 2010a).

Figure 1.5

Median, 25th Percentile, and 75th Percentile Earnings of Full-Time Year-Round Workers Ages 25 and Older, by Gender and Education Level, 2008



This graph shows earnings by education level separately for male and female full-time year-round workers ages 25 and older. The bottom of each bar shows the 25th percentile; 25% of the people in the group earn less than this amount. The box shows median earnings for the group. The top of the bar shows the 75th percentile; 25% of the people in the group earn more than this amount.

Sources: U.S. Census Bureau, 2009; calculations by the authors.

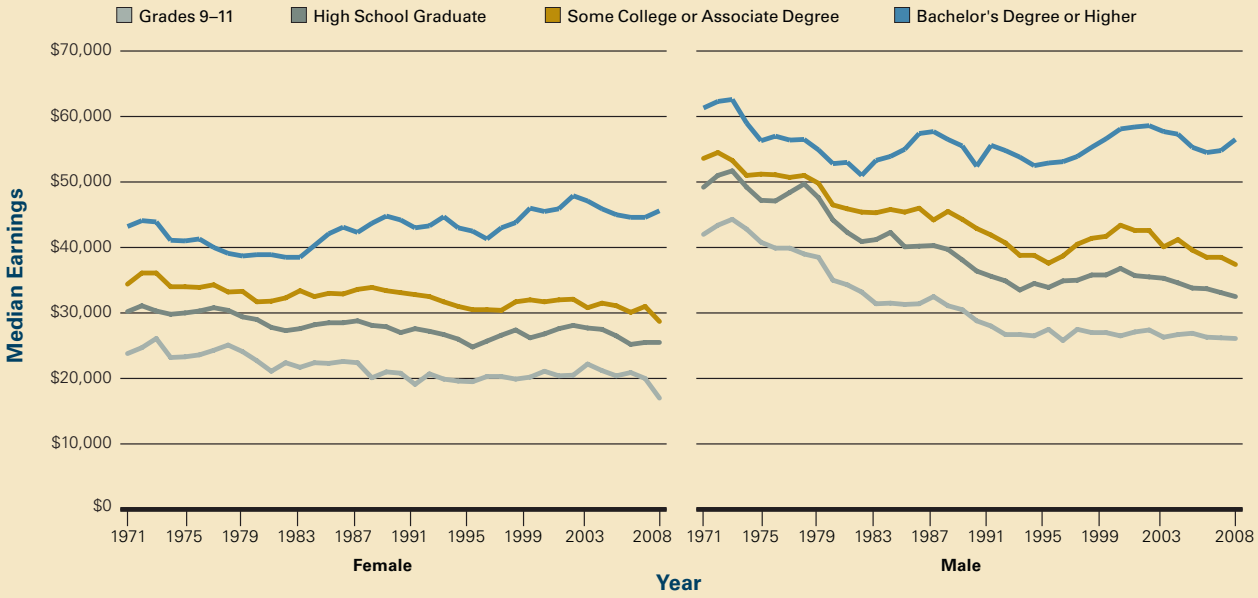
Earnings over Time by Education Level and Gender

In 2008, median earnings for females ages 25 to 34 with a bachelor's degree or higher were 79% higher than median earnings for females with a high school diploma, and the earnings premium for males was 74%. These earnings differentials were 60% and 54%, respectively, a decade earlier.

- From 2007 to 2008, inflation-adjusted median earnings increased for females and males ages 25 to 34 with a bachelor's degree or higher, but declined or remained constant for all other education groups.
- In 2008, median earnings for females ages 25 to 34 with some college or an associate degree were 13% higher than median earnings for female high school graduates. For males, this earnings differential was 15%.
- Inflation-adjusted earnings for high school graduates ages 25 to 34 have declined for decades. The median male high school graduate earned $49,700 in 2008 dollars in 1978, $39,700 in 1988, $35,800 in 1998, and $32,500 in 2008. Real earnings for female high school graduates have also declined over time, but less sharply.
- Median earnings of both males and females ages 25 to 34 with some college or an associate degree have also failed to keep up with inflation, but the decline has not been as steep as the decline for high school graduates. In 2008, for both men and women, median earnings for this group were about 10% lower after adjusting for inflation than they were in 1998.
- From 1998 to 2008, median earnings for both male and female four-year college graduates ages 25 to 34 just outpaced inflation, rising 2% and 4%, respectively, in constant dollars.

Figure 1.6

Median Earnings of Full-Time Year-Round Workers Ages 25–34, by Gender and Education Level, 1971–2008 (in Constant 2008 Dollars)



Sources: National Center for Education Statistics, 2004; U.S. Census Bureau, 2003–2009; Bureau of Labor Statistics, 2010g; calculations by the authors.

Also important:

- The overall distribution of income in the United States became more unequal during this time period. The share of total income received by households in the lowest 20% of the income distribution declined from 4.1% in 1971 to 3.8% in 1990 and 3.4% in 2008; the share of total income received by households in the highest 20% of the income distribution rose from 43.5% in 1971 to 46.6% in 1990 and 50.0% in 2008 (U.S. Census Bureau, 2010b).

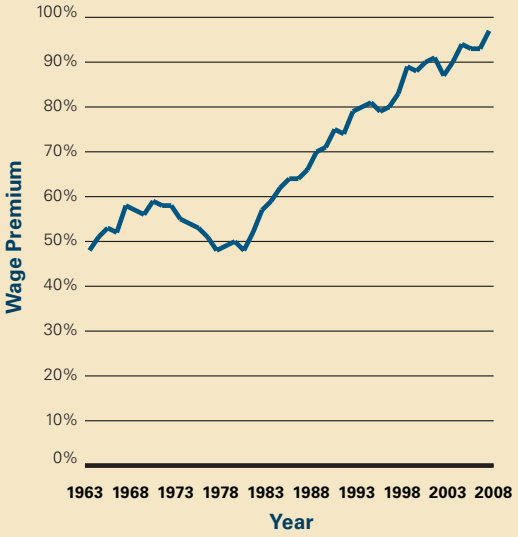
Labor Market Outcomes

Research by MIT economist David Autor indicates that the return to additional years of education in terms of higher wages has increased over time, and that each year of education adds more to wages than previous years.

- After taking race and years of work experience into consideration, median hourly wages for college graduates were about 50% more than median hourly wages for high school graduates in 1982. By 2008, wages for college graduates were almost twice as high as those for high school graduates.
- In 2007, the median increase in earnings associated with an 18th year of education was 19%. The 16th year — or fourth year of college — added 16%, and the first year added 11%.

Figure 1.7a

College-to-High School Weekly Wage Premium, 1963–2008



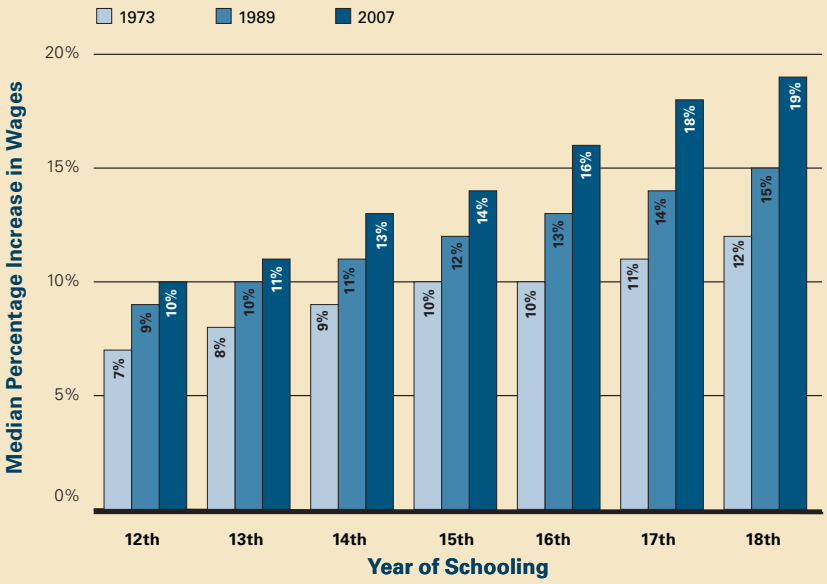
A premium of 0% would indicate that median wages for college graduates were equal to median wages for high school graduates. A premium of 100% would indicate that median wages for college graduates were 100% more than — twice as high as — median wages for high school graduates.

Note: Wages are for full-time year-round workers. The ratios are after adjusting for race and years of work experience.

Source: Autor, 2010.

Figure 1.7b

Median Hourly Wage Gain per Year of Schooling, 1973, 1989, and 2007



The bars in Figure 1.7b represent the median percentage increase in earnings from each additional year of schooling. For example, in 1973, one year of college — the 13th year of education — increased wages by 8% beyond the level of high school graduates. By 2007, the increase attributable to that year of education was 11%.

Note: Returns to additional years of education were calculated controlling for gender and years of work experience.

Source: Autor, 2010.

Also important:

- Autor's research shows that job opportunities are increasingly concentrated in high-wage, high-skill jobs and in low-wage, low-skill jobs. During the recession, employment losses have been more severe in middle-wage, middle-skill jobs than at either end of the labor market continuum.
- Autor finds that the slowing pace of educational attainment has contributed to the growing gap between the earnings of high school graduates and the earnings of college graduates.
- Most people experience wage gains that are either smaller or larger than the median. Economic evidence suggests that those at the margin of enrolling in college who face financial and other barriers are likely to have larger than average financial returns (Caneiro et al., 2001; Card, 2001).

Employment

The number of college graduates who were employed in the first three months of 2010 was 2% higher than the number three years earlier. The numbers employed at all lower levels of education declined over this time period.

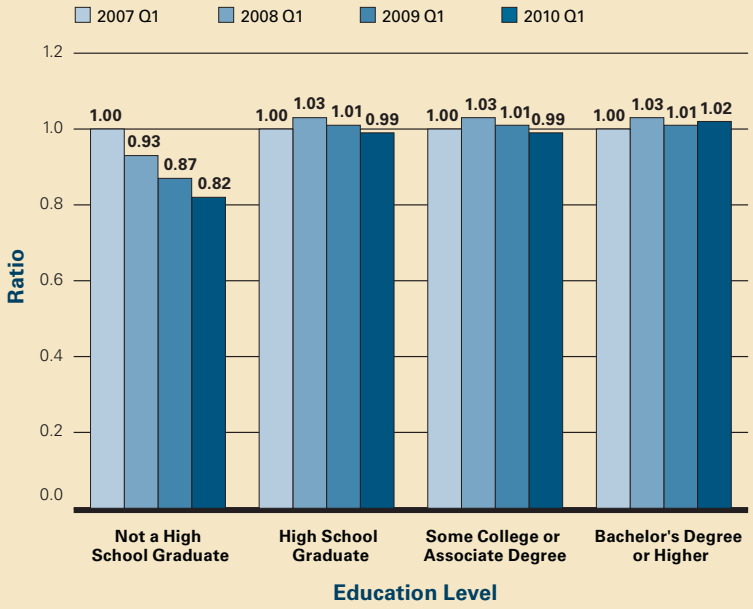
- The number employed fell at all levels of education between the beginning of 2008 and the beginning of 2009, but began to recover by early 2010 for four-year college graduates only.
- In the first quarter of 2010, 82% of male and 73% of female four-year college graduates were in the labor force. Among those with some college or an associate degree, 75% of males and 63% of females were either employed or actively looking for work, compared to 72% of male and 53% of female high school graduates.
- The labor force includes all individuals who are either employed or actively seeking employment. The percentage of adults who participate in the labor force increases with the level of education.

Also important:

- According to the National Bureau of Economic Research, the recent recession began when the economy peaked in December 2007. As of June 2010, the trough marking the end of the recession had not yet been identified (NBER, 2010).

Figure 1.8a

Number of Employed Individuals Ages 25 and Older Relative to the First Quarter of 2007, by Education Level

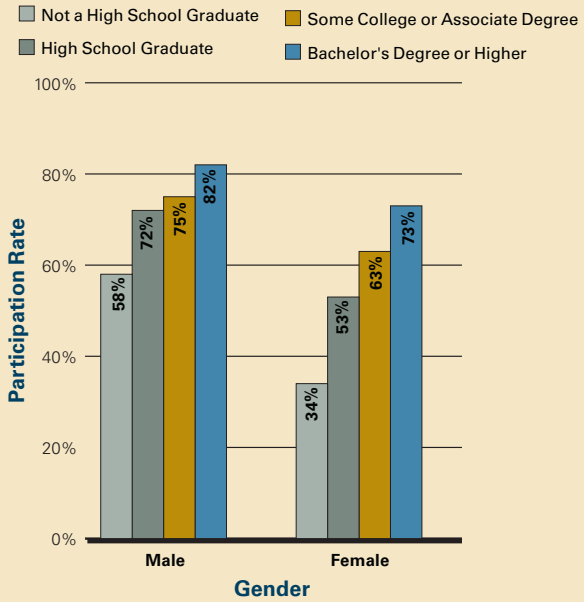


The bars in Figure 1.8a show the number of individuals with each level of education who were employed in each period from the first quarter of 2007 through the first quarter of 2010. In each case, the number employed is relative to the number who were employed in the first three months of 2007, before the onset of the recent recession. A ratio of 1.00 indicates no change in the level of employment, a ratio below 1.00 indicates a decline in the number employed, and a ratio above 1.00 indicates an increase in employment.

Sources: Bureau of Labor Statistics, 2010b; calculations by the authors.

Figure 1.8b

Labor Force Participation Rates Among Individuals Ages 25 and Older, by Gender and Education Level, First Quarter 2010



The labor force includes individuals who are either employed or actively looking for work and therefore are counted as unemployed. The labor force participation rate is the percentage of nonmilitary, noninstitutionalized individuals over the age of 16 who are in the labor force, and excludes those who are neither employed nor officially unemployed.

Source: Bureau of Labor Statistics, 2010e.

Job Satisfaction

Individuals with higher levels of education are more likely to be very satisfied with their jobs and to report that the most important job characteristics for them are that their work seems important and gives them a sense of accomplishment.

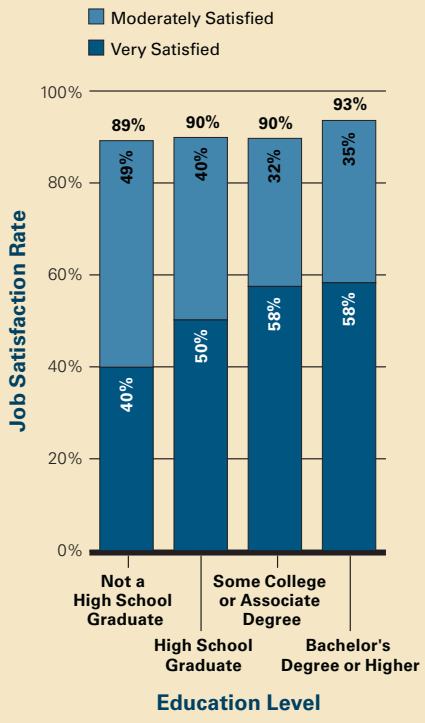
- In 2008, about 58% of college graduates and individuals with some college education or an associate degree reported being very satisfied with their jobs, while 50% of high school graduates and 40% of individuals without a high school diploma reported being very satisfied.
- In 2006, 59% of college graduates reported that being able to feel their work is important and getting a sense of accomplishment from their work are the most important characteristics in a job, compared with 38% of individuals with some college education or an associate degree, 36% of high school graduates, and 21% of those without a high school diploma.

Also important:

- In 2008, 44% of those who reported being very satisfied with their jobs also reported being very happy, while 23% of those who reported being moderately satisfied with their jobs and 15% of those who reported being dissatisfied with their jobs reported being very happy (National Opinion Research Center, 1972–2008; calculations by the authors).
- Many factors determine job satisfaction. They include demographic factors, job characteristics, and earnings.
- Controlling for many individual demographic characteristics and income, education still has a significant and positive effect on job satisfaction (Oreopoulos and Salvanes, 2009).

Figure 1.9a

Job Satisfaction Rates Among Employed Individuals Ages 25 and Older, by Education Level, 2008

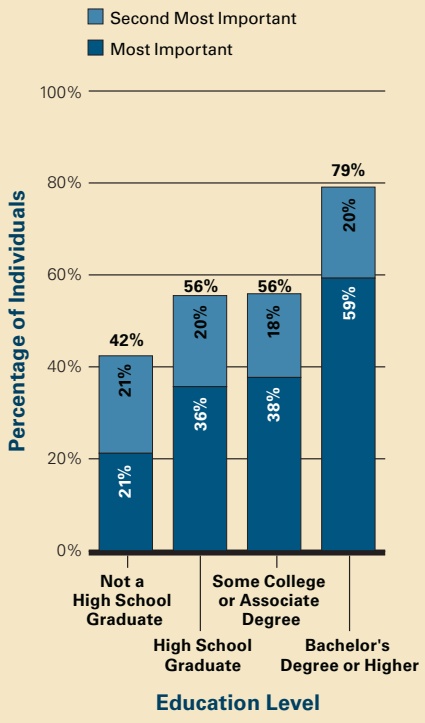


Note: Includes individuals ages 25 and older who were working full-time or part-time at the time of the survey.

Sources: National Opinion Research Center, 2008; calculations by the authors.

Figure 1.9b

Importance Placed by Employed Individuals Ages 25 and Older on Feeling Work Is Important and Gives a Sense of Accomplishment, by Education Level, 2006



Note: Includes individuals ages 25 and older who were working full-time or part-time at the time of the survey.

Sources: National Opinion Research Center, 2006; calculations by the authors.

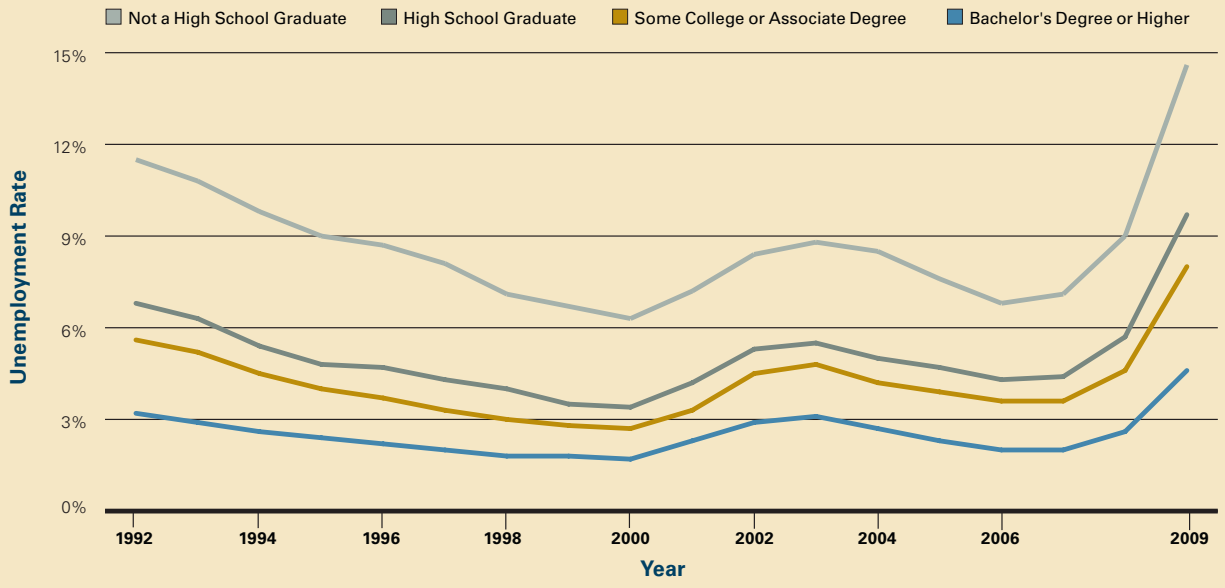
Unemployment

The unemployment rate for individuals with at least a bachelor's degree is consistently about half the unemployment rate for high school graduates.

- In 2009, with an average annual unemployment rate of 7.9% for individuals ages 25 and older, unemployment had risen sharply for all levels of educational attainment. The 4.6% unemployment rate for those with at least a four-year college degree was 5.1 percentage points lower than the 9.7% unemployment rate for high school graduates.
- In 1999 and 2000, with low overall unemployment rates of 4.0% and 4.2%, respectively, the gap between the unemployment rates for college graduates and high school graduates was 1.7 percentage points.
- From 1992 through 2009, the annual unemployment rate for individuals with some college but less than a four-year degree was between 0.7 and 1.7 percentage points lower than the unemployment rate for high school graduates.

Figure 1.10a

Unemployment Rates Among Individuals Ages 25 and Older, by Education Level, 1992–2009



Source: Bureau of Labor Statistics, 2010d.

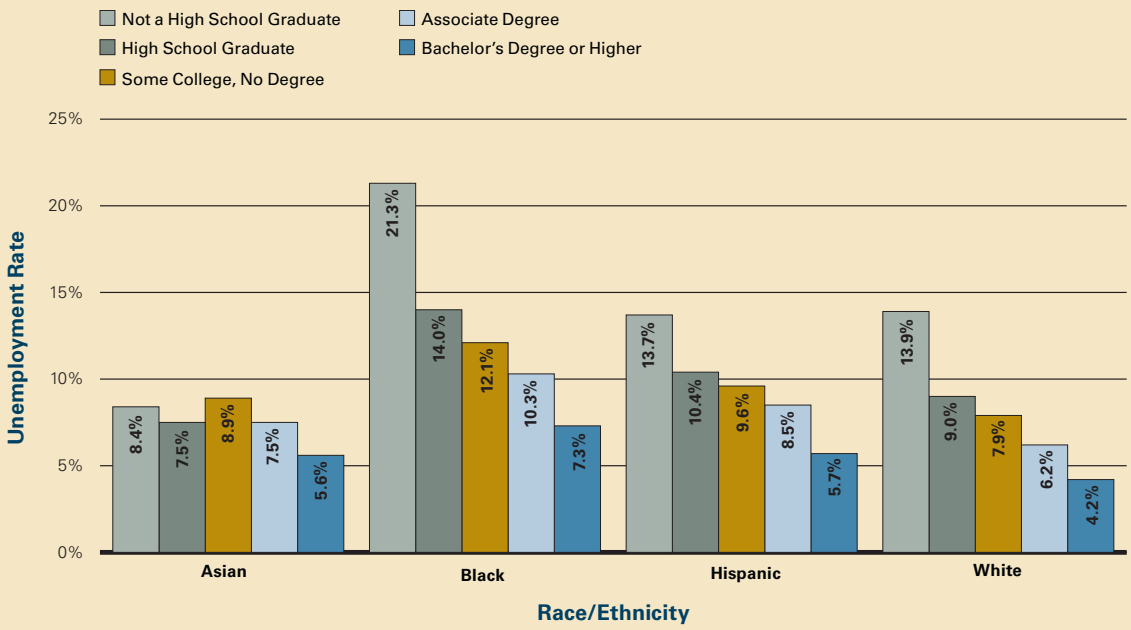
Unemployment

Among Hispanic, black, and white adults, the unemployment rate decreases markedly as the level of educational attainment increases.

- At each level of educational attainment, the unemployment rate for blacks is higher than that for whites, Asians, or Hispanics.
- The 6.7 percentage point gap between the unemployment rates for black individuals with at least a bachelor's degree and black high school graduates is larger than the differences within other racial/ethnic groups.
- The 7.3% unemployment rate for blacks with at least a bachelor's degree is higher than the 6.2% unemployment rate for whites with an associate degree, and similar to the 7.5% unemployment rates for Asian high school graduates and associate degree recipients.

Figure 1.10b

Unemployment Rates of Individuals Ages 25 and Older, by Education Level and Race/Ethnicity, 2009



Source: Bureau of Labor Statistics, 2010c.

Also important:

- In 2009, 14.7% of young adults between the ages of 20 and 24 were unemployed, compared with 7.9% of adults ages 25 and older.
- For young adults between the ages of 20 and 24, the unemployment rate in the fourth quarter of 2009 for high school graduates was 2.6 times as high as that for college graduates (U.S. Census Bureau, 2009; calculations by the authors).

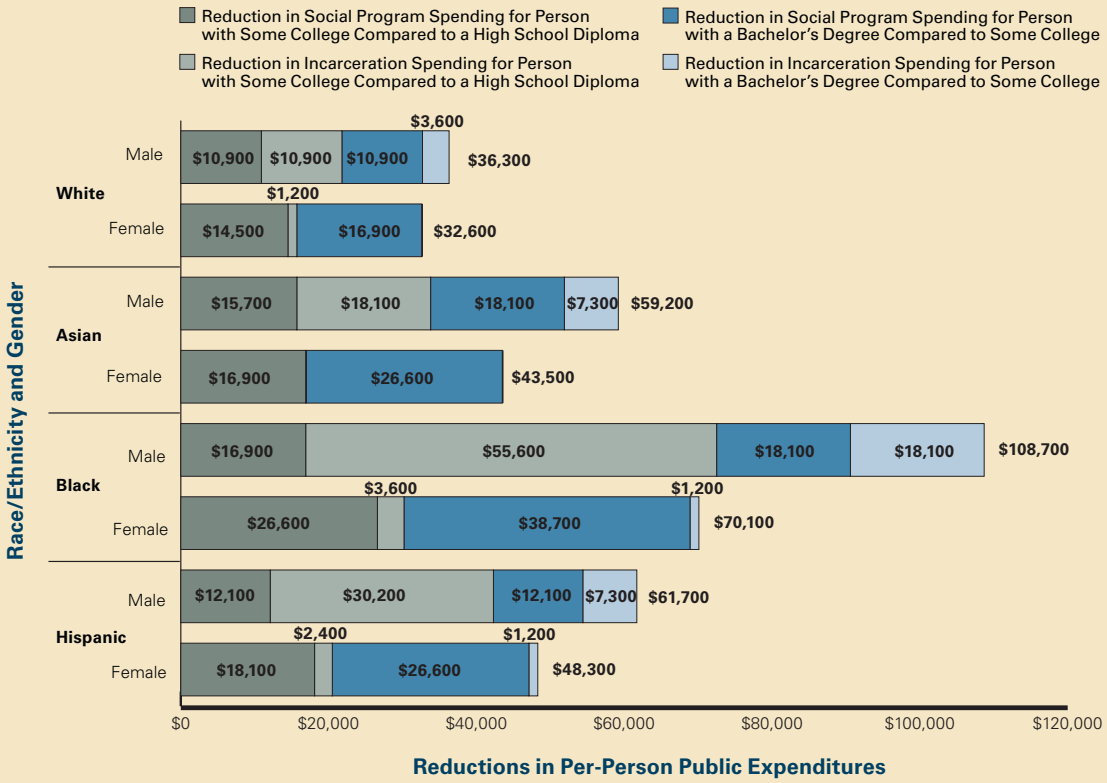
Social Support Programs

Estimates of the average lifetime savings in taxpayer spending on social support programs associated with U.S.-born individuals earning four-year degrees instead of ending their education after high school range from $32,600 for white women to $108,700 for black men.

- In addition to being less likely to rely on social support programs, individuals with higher levels of education have higher incomes and pay more federal, state, and local taxes. Based on the RAND Corporation's estimates, the lifetime value of increased tax payments associated with some college experience range from an average of $32,700 for black men to $49,600 for Asian women. Additional tax payments associated with completing a four-year college degree instead of some college range from an average of $82,300 for black women to $141,500 for white men.
- Although not shown here, estimated taxpayer savings from individuals completing high school, as opposed to leaving school without a diploma, are higher than those from individuals completing college as opposed to ending their education after high school. Savings from high school completion range from an average of $73,800 for white men to $294,000 for black men.

Figure 1.11

Estimated Reductions in Lifetime Public Expenditures per Person Associated with Increases in Educational Attainment, in 2010 Dollars



Average spending on each social support program differs by personal characteristics. For example, expenditures on welfare programs are higher for women than for men with similar demographic traits. Expenditures on Medicare are higher for older people. Estimates of social support program savings cited here are based on 2002 participation and average benefit levels by race, gender, and age. The estimates include spending on welfare programs, housing benefits, food stamps, Supplemental Security Income, Medicare, Medicaid, unemployment insurance, and Social Security. Estimates of incarceration costs are based only on state and local incarceration costs. Expenditures are discounted at an annual rate of 3% to estimate their value at the time the individual is age 18.

Sources: Carroll and Erkut, 2009; calculations by the authors.

Pension Plans

College-educated workers are more likely than others to be offered pension plans by their employers. Among those to whom these plans are available, participation rates are higher for individuals with higher education levels.

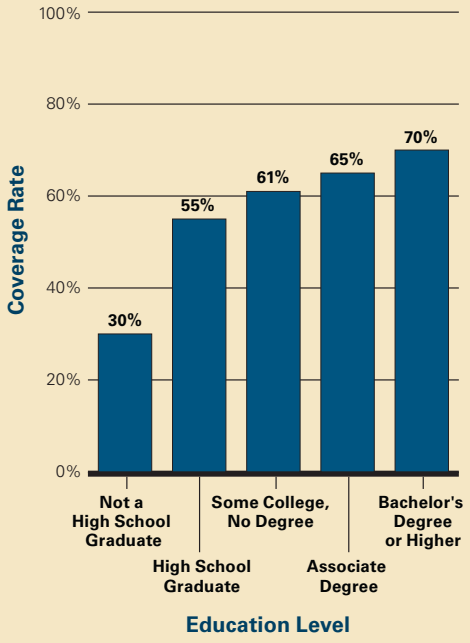
- Among full-time year-round workers ages 25 and older, 70% of four-year college graduates were offered pension plans by their employers in 2008. Employer-provided pension plans were available to 65% of associate degree recipients, 61% of workers with some college but no degree, 55% of high school graduates, and only 30% of those who did not complete high school.
- Among full-time year-round workers whose employers offered pension plans, 93% of four-year college graduates chose to participate. Participation rates were 88% for associate degree recipients, 86% for workers with some college but no degree, 85% for high school graduates, and 76% for those who did not complete high school.

Also important:

- In 2009, 61% of private sector employees had access to defined contribution plans, in which the payout depends on the amount accumulated in a personal account. Over time, these plans have become more common than defined benefit plans, which provide a predetermined income level each year after retirement (U.S. Census Bureau, 2010a).
- The proportion of private sector workers working at least half-time who were covered by employer pension plans declined from 51% in 1979 to 44% in 1989. After rising to 48% in 2000, coverage had declined to 43% by 2006 (Mishel et al., 2008, Table 3.13).
- Low earnings levels, more common among individuals with lower education levels, may explain some decisions not to participate in employer-provided pension plans that require workers to contribute a portion of their wages.

Figure 1.12a

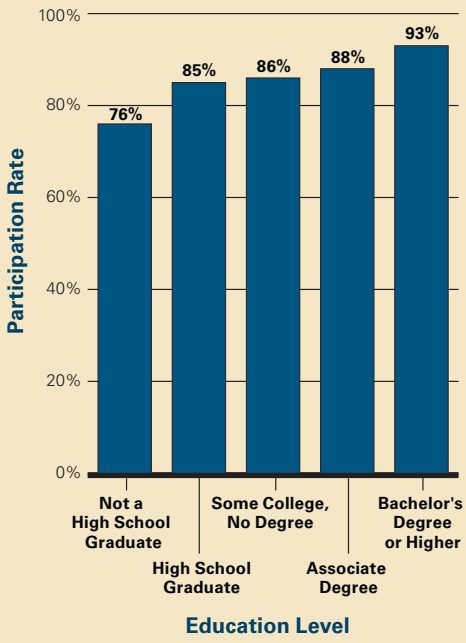
Employer-Provided Pension Plan Coverage Among Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2008



Sources: U.S. Census Bureau, 2009; calculations by the authors.

Figure 1.12b

Participation Rates in Employer-Provided Pension Plans Among Eligible Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2008



Sources: U.S. Census Bureau, 2009; calculations by the authors.

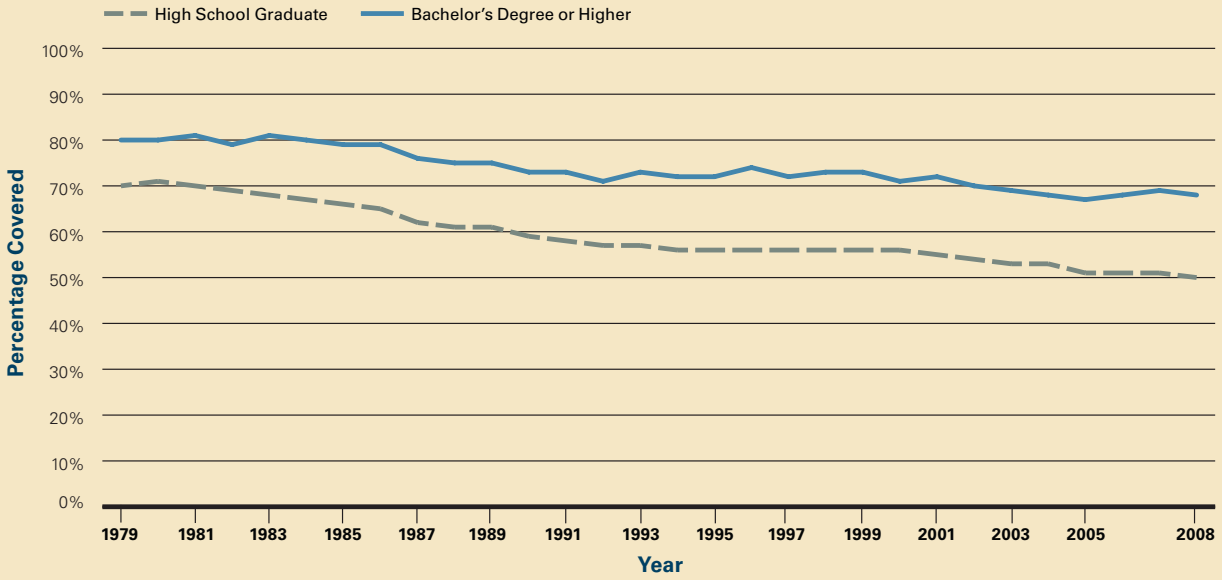
Health Insurance

In 2008, 68% of four-year college graduates working at least half-time in the private sector were covered by employer-provided health insurance. Only 50% of high school graduates had this benefit.

- The gap between health care coverage for high school graduates and four-year college graduates grew from 10 percentage points in 1979 to 14 percentage points in 1988, 17 percentage points in 1998, and 18 percentage points in 2008.
- Employer-provided health care coverage for all private sector employees declined from 69% in 1979 to 55% in 2008. The decline was more rapid for high school graduates than for four-year college graduates.

Figure 1.13

Employer-Provided Health Insurance Coverage Among Private Sector Workers Ages 18 to 64 Working at Least Half-Time, by Education Level, 1979–2008



Source: Economic Policy Institute, 2010.

Also important:

- Federal, state, and local governments spent about $43 billion on payments for health care for the uninsured in 2008 (The Kaiser Commission, 2008).

Employer-Provided Health Insurance Coverage Among Private Sector Workers Ages 18 to 64 Working at Least Half-Time, by Education Level, 1979–2008

Year	All	High School Graduate	Bachelor's Degree or Higher
1979	69%	70%	80%
1988	62%	61%	75%
1998	59%	56%	73%
2008	55%	50%	68%

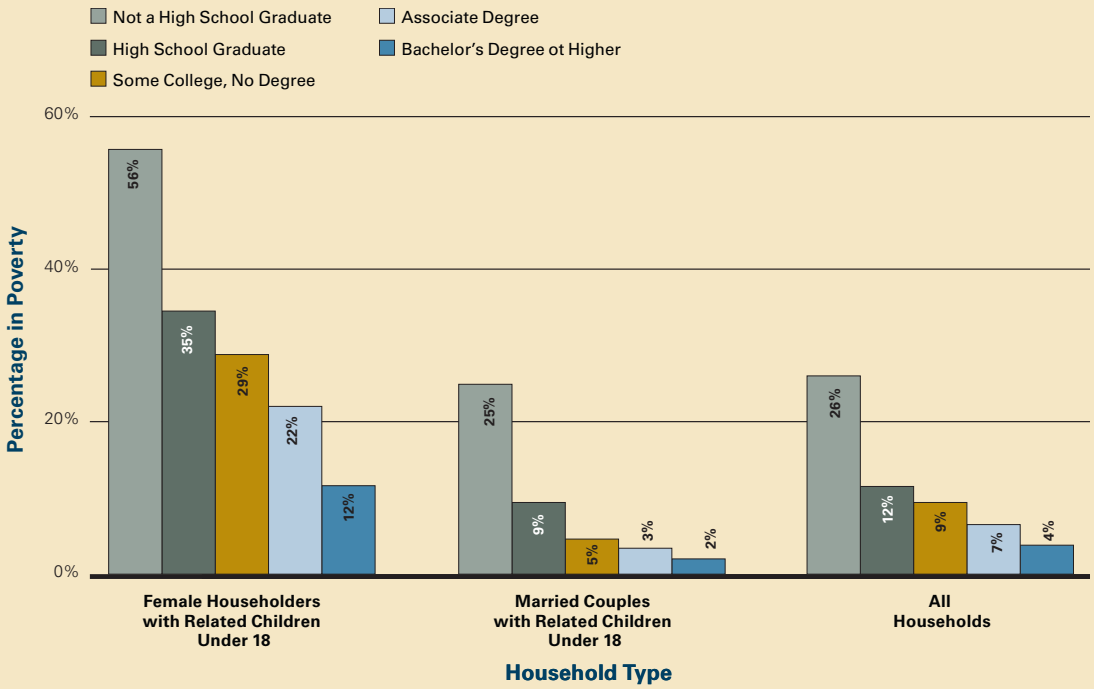
Poverty

The 4% poverty rate in 2008 for bachelor's degree recipients was one-third of the 12% poverty rate for high school graduates.

- Individuals living in households headed by unmarried females with children under age 18 have particularly high poverty rates. The 12% poverty rate for bachelor's degree recipients living in families headed by unmarried females in 2008 was three times as high as the overall poverty rate for those with a bachelor's degree or higher, but was about one-third of the 35% poverty rate for high school graduates living in similar families.
- The 2008 poverty rate for all associate degree recipients was 7%, compared to 9% for individuals with some college but no degree and 12% for high school graduates with no college experience.

Figure 1.14

Percentage of Individuals Ages 25 and Older Living in Households in Poverty, by Household Type and Education Level, 2008



Sources: U.S. Census Bureau, 2009; calculations by the authors.

Also important:

- The official poverty threshold varies with family size, number of children under 18, and senior citizen status. In 2008, a family of four with two children was considered poor if it had an income below $21,834. The poverty threshold was $11,201 for a single person under age 65 and $17,346 for a family of three with two children (U.S. Census Bureau, 2010c).
- In 2008, married couples constituted 68% of all families with children under age 18, but only 33% of families with children under 18 below the poverty level (U.S. Census Bureau, 2009a).
- In 2008, households headed by unmarried females constituted 25% of all families with children under age 18, but 60% of families with children under 18 below the poverty level (U.S. Census Bureau, 2009a).

Public Assistance Programs

The percentage of high school graduates ages 25 and older living in households qualified for and receiving Medicaid was three times as high as the percentage of those with a bachelor's degree or higher participating in this program.

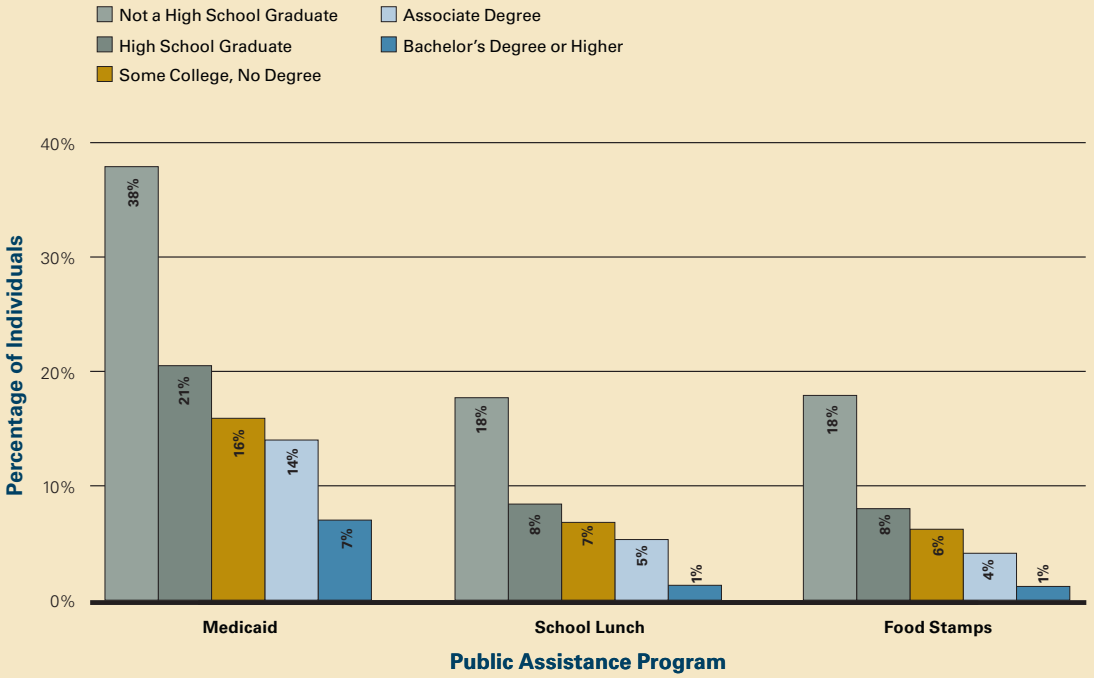
- In 2008, 8% of high school graduates ages 25 and older lived in households that relied on the Food Stamp Program (renamed the Supplemental Nutrition Assistance Program in October 2008), compared to just over 1% of those with at least a bachelor's degree. The pattern was similar for the National School Lunch Program.
- Participation in public assistance programs increases when the economy is weak and unemployment is high. The participation rates shown here for 2008 are all higher than in 2005.
- From 2005 to 2008, Medicaid participation increased by 1.9 percentage points for high school graduates, 1.7 percentage points for associate degree recipients, and 0.7 percentage points for college graduates. Participation in the Food Stamp Program increased by 1.6 percentage points, 0.5 percentage points, and 0.2 percentage points, respectively, for these groups.

Also important:

- Medicaid provides health insurance to many low-income families and other eligible individuals. The National School Lunch Program provides free or reduced-price lunches to eligible school children. Food stamps subsidize food purchases for eligible low-income households.
- In 2008, 28.4 million participants received an annual average of $1,218 in food stamp benefits. Thirty-one million children received free or reduced-price school lunches, at a total cost of $8.3 billion to the federal government. In 2006, 57.8 million participants received a total of $269.9 billion in Medicaid benefits (U.S. Census Bureau, 2010a, Tables 144 and 558).

Figure 1.15

Percentage of Individuals Ages 25 and Older Living in Households that Participated in Various Public Assistance Programs, by Education Level, 2008



Sources: U.S. Census Bureau, 2009; calculations by the authors.

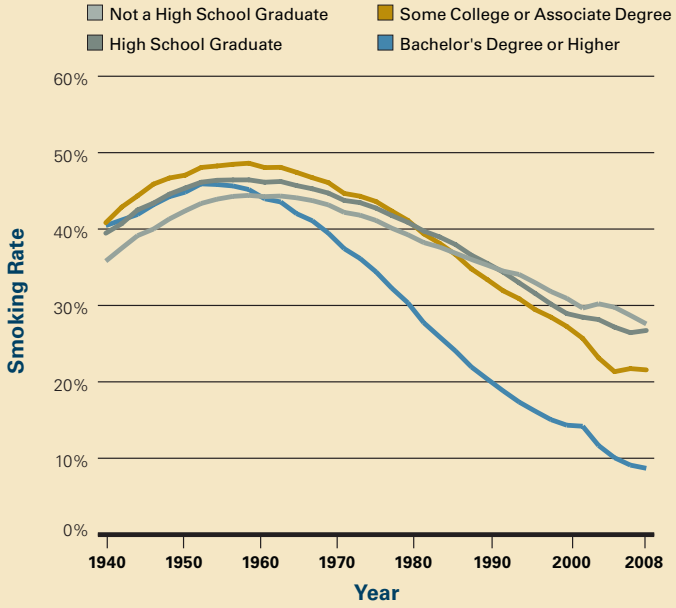
Smoking

Smoking rates among college graduates have been significantly lower than smoking rates among other adults since information about the risks became public.

- Smoking rates in the United States increased in the 1940s, leveled off at about 45% in the 1950s, and began a steady decline in the late 1960s. College graduates were at least as likely as others to smoke before the medical consensus on the dangers of smoking became clear.
- By 1970, when information was widespread and clear public warnings were mandatory, the smoking rate among college graduates had declined to 37%, while 44% of high school graduates smoked.
- Over the decade from 1998 to 2008, the smoking rate continued to decline rapidly for adults with at least some college experience, but more slowly for others. The percentage of four-year college graduates who smoked declined from 14% to 9%, while the rate for high school graduates declined from 29% to 27%.
- In 2008, only 6% of adults with advanced degrees smoked, and half of them reported trying to stop smoking in 2008.
- Among smokers with some college, an associate degree, or a bachelor's degree, 46% to 48% of smokers tried to stop. Forty-one percent of high school graduates and 44% of adults with less than a high school diploma reported making this effort.

Figure 1.16a

Smoking Rates Among Individuals Ages 25 and Older, by Education Level, 1940–2008

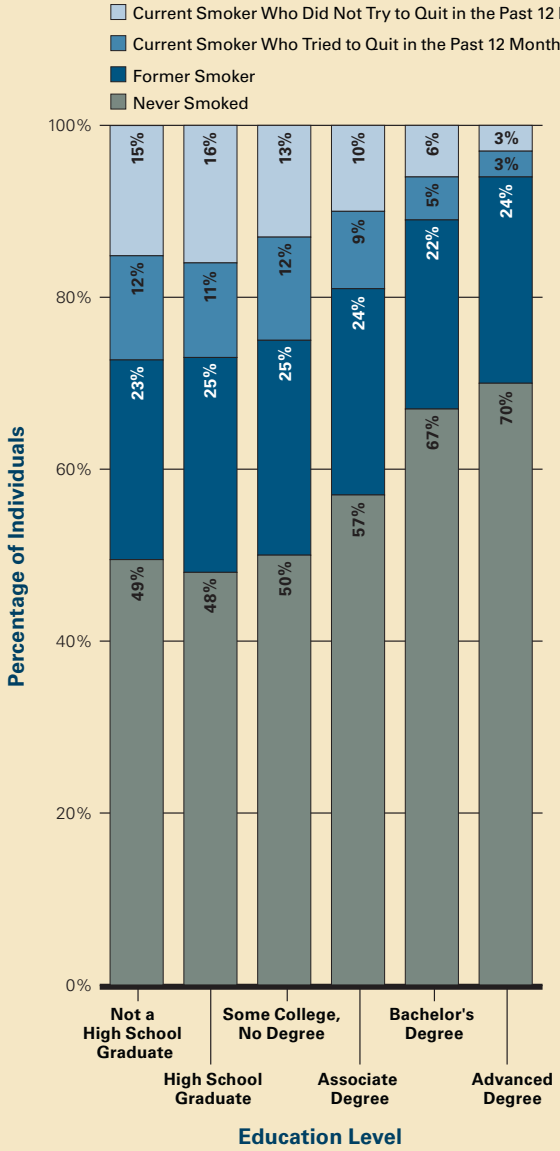


Note: Data for 2001 and after are three-year moving averages.

Sources: DeWalque, 2004; National Center for Health Statistics, 2009, Table 61; NCHS, 2008; calculations by the authors.

Figure 1.16b

Distribution of Smoking Histories Among Individuals Ages 25 and Older, by Education Level, 2008



Note: Percentages may not add to 100 due to rounding.

Sources: NCHS, 2008; calculations by the authors.

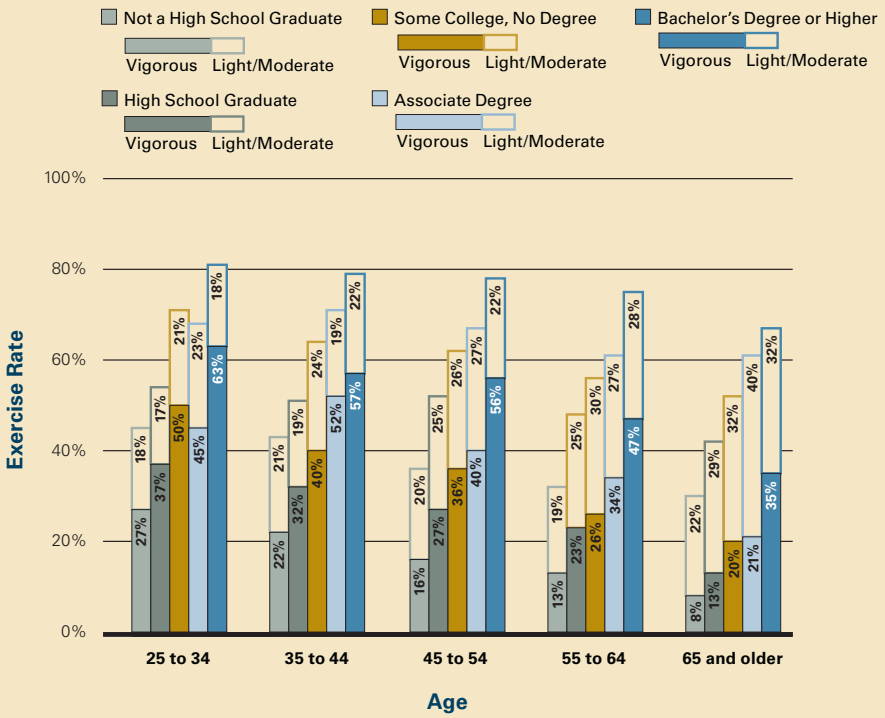
Exercise

At every age, individuals with higher levels of education are more likely than those with lower levels of education to engage in leisure-time exercise.

- Among young adults between the ages of 25 and 34, 63% of four-year college graduates reported exercising vigorously at least once a week before being surveyed in 2008, and another 18% reported light or moderate exercise. Among high school graduates in this age range, 37% reported vigorous exercise and 17% reported light or moderate exercise.
- Older adults are less likely than younger adults to exercise, but the pattern by education level is similar within all age groups. For example, among 55- to 64-year-olds, 48% of high school graduates reported any exercise and 23% reported exercising vigorously. Within this age group, 75% of four-year college graduates reported any exercise and 47% reported vigorous exercise.

Figure 1.17

Exercise Rates Among Individuals Ages 25 and Older, by Age and Education Level, 2008



Sources: National Center for Health Statistics, 2008; calculations by the authors.

Also important:

- Numerous studies investigating the relationship between education and health support the idea that the skills, attitudes, and thought patterns fostered by education lead to more responsible health-related behaviors (Mirowsky and Ross, 2003).
- Improvements in health are associated with each additional year of schooling, but there does not appear to be a "sheepskin" effect with completion of a degree having a bigger impact than just the completion of an additional year of education. This contrasts to the relationship between schooling and wages, where both additional years of education and degree completion appear to have independent effects (Cutler and Lleras-Muney, 2006).
- Additional health care costs in the United States in 2000 attributable to physical inactivity have been estimated at about $200 billion. Physically inactive people spend more days in the hospital and utilize more of a wide range of health care services than more active people (Sari, 2008).

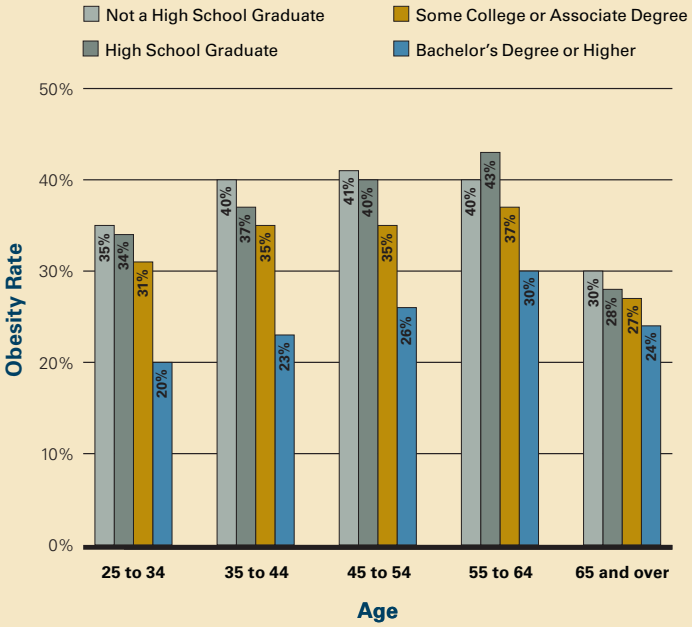
Obesity

Within each age group, college-educated adults are less likely than others to be obese. In addition, children living in households with more highly educated adults are less likely than other children to be obese.

- While the frequency of obesity is lower among adults with some college education than among high school graduates, for each age group the gap is largest between those with a bachelor's degree and those with some college or an associate degree.
- Differences in obesity rates by education level persist through middle age but narrow considerably at older ages. For example, among 35- to 44-year-olds, 23% of four-year college graduates and 37% of high school graduates were obese in 2008. Among those 65 or older, 24% of four-year college graduates and 28% of high school graduates were obese.
- Within each household education level, obesity rates are higher for children ages 6 to 11 than for children ages 2 to 5. The frequency of obesity among the children from high school graduate households increases from 14% between the ages of 2 and 5 to 22% between the ages of 6 and 11. The frequency of obesity among the children from four-year college graduate households increases from 6% between the ages of 2 and 5 to 14% between the ages of 6 and 11.
- Within each education level, obesity rates are either about the same or slightly lower for children ages 12 to 19 than for children ages 6 to 11.

Figure 1.18a

Obesity Rates Among Adults Ages 25 and Older, by Age and Education Level, 2008

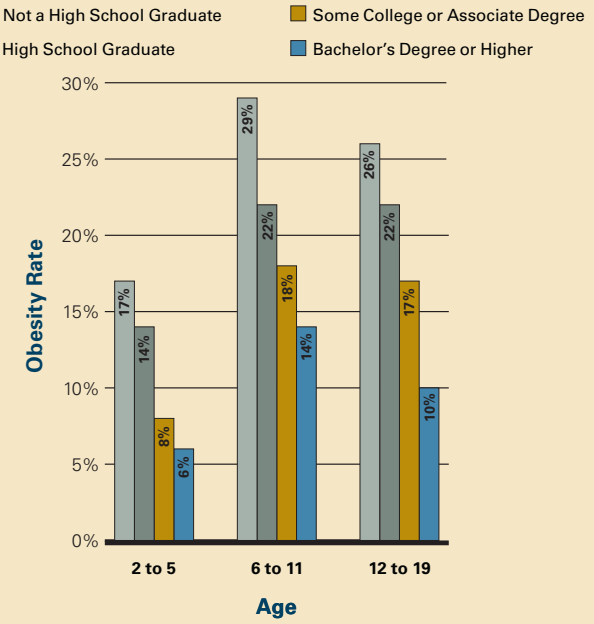


Note: "Obesity" is defined as a body mass index (BMI) of 30 or higher, which is equivalent to being at least about 30 pounds overweight at average heights. BMI equals 703 multiplied by weight in pounds divided by height in inches squared.

Sources: National Center for Health Statistics, 2008; calculations by the authors.

Figure 1.18b

Obesity Rates Among Children and Adolescents Ages 2 to 19, by Age and Highest Household Education Level, 2008



Note: "Obesity" is defined as BMI at or above the 95th percentile for children of the same age in months and gender, based on the 2000 *CDC Growth Charts for the United States*.

Sources: National Center for Health Statistics, 2007–2008; CDC, 2010a; calculations by the authors.

Also important:

- Additional health care costs attributable to obesity averaged about $361 per adult in 2008. The total cost could increase fourfold by 2018 if the current rate of increase in obesity continues (United Health Foundation, 2009).

Low Birth Weight and Breast-Feeding

Mothers with higher levels of education are less likely than others to have low-birth-weight babies and are more likely than others to breast-feed their babies.

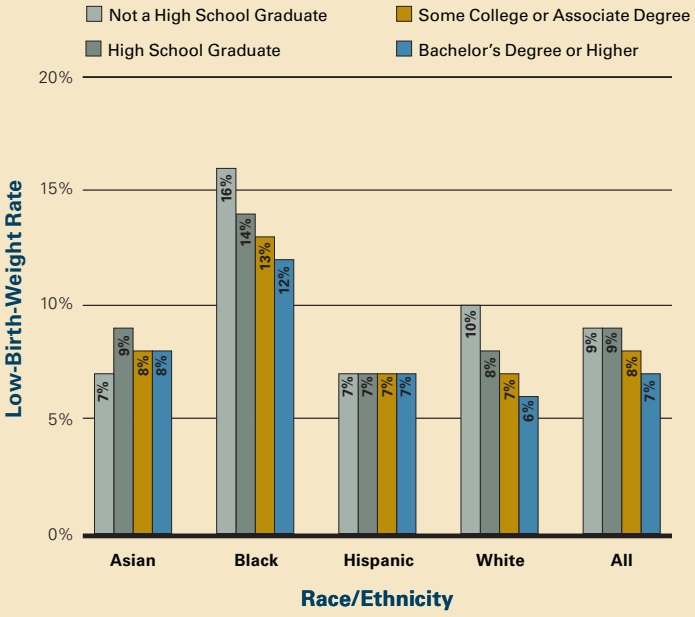
- Overall, mothers with only a high school education are 31% more likely than mothers with a bachelor's degree or higher (8.9% vs. 6.8%) to give birth to babies weighing less than 5.5 pounds.
- Racial/ethnic differences in the prevalence of low birth weight are greater than differences by educational attainment, but among black mothers and among white mothers, the percentage of babies with low birth weights declines markedly as education levels increase. This pattern is not apparent for Asian and Hispanic mothers.
- Between 2003 and 2006, 85% of mothers who were four-year college graduates, 75% of those with some college or an associate degree, and 65% of high school graduates breast-fed their babies.

Also important:

- Low-birth-weight babies tend to incur high medical costs throughout their lives. Estimates suggest an average cost of about $34,500 (in 2010 dollars) for the first year of life, and considerable additional costs throughout life (EPA, Ch.III.2).
- Estimates suggest that if 90% of U.S. families complied with medical recommendations to breast-feed exclusively for six months, the United States would save $13 billion per year and prevent at least 911 deaths, nearly all of which would be in infants. Compliance of 80% would save $10.5 billion and 741 lives (Bartick and Reinhold, 2010).

Figure 1.19a

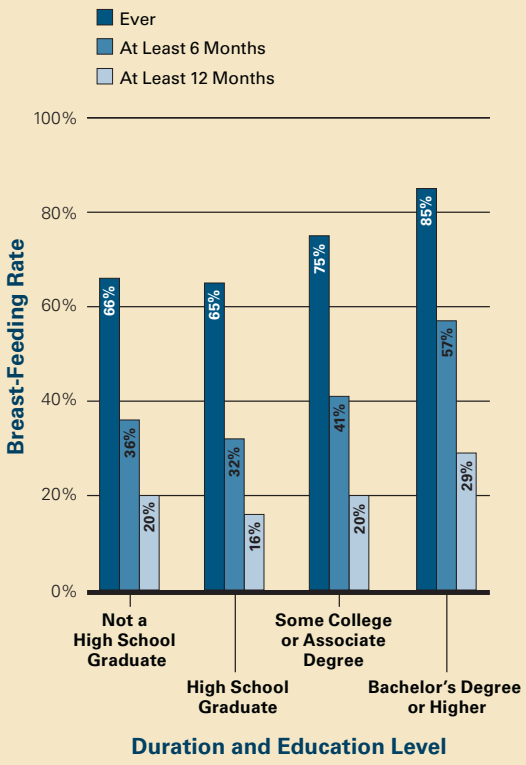
Low-Birth-Weight Rates Among Babies Born to Mothers Ages 20 and Older, by Race/Ethnicity and Mother's Education Level, 2006



Source: National Center for Health Statistics, 2009, Table 12.

Figure 1.19b

Breast-Feeding Rates of Mothers of Babies Born from 2003 to 2006, by Duration and Education Level



Source: Centers for Disease Control and Prevention, 2010b.

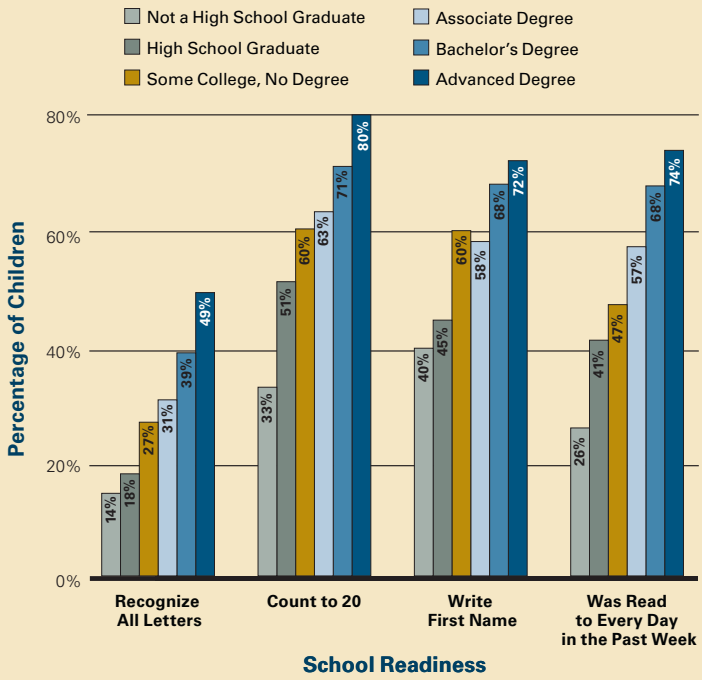
Parents and Children

Children of parents with higher levels of educational attainment are better prepared for school and, while in school, are more likely than other children to engage in educational activities with their parents.

- In 2007, children between the ages of 3 and 5 whose parents had bachelor's degrees were more than twice as likely as children of high school graduates to recognize all of the letters of the alphabet (39% vs. 18%).
- Children whose parents had some college but no degree were 50% more likely than children of high school graduates to recognize all of the letters of the alphabet (27% vs. 18%).
- Among parents whose highest degree was a bachelor's degree, 68% read to their children daily in 2007. This compares to 57% of parents with an associate degree, 47% of parents with some college but no degree, 41% of high school graduates, and 26% of parents who did not complete high school.
- Parents with higher levels of education more frequently participate with their school-age children in a wide variety of activities, ranging from going to a library to participating in community/religious/ethnic activities, to attending concerts or other live events.

Figure 1.20a

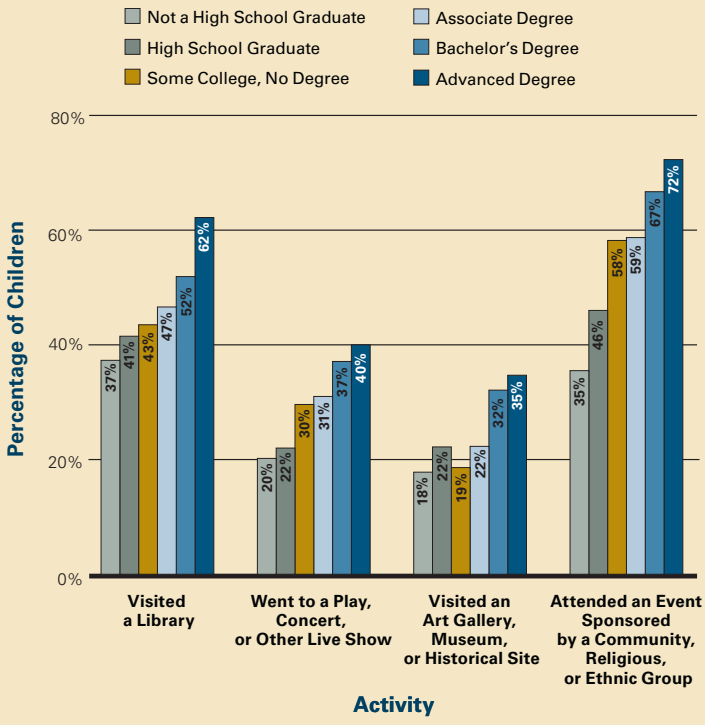
School Readiness of Preschool Children Ages 3–5, by Parents' Highest Education Level, 2007



Sources: National Center for Education Statistics, 2007; calculations by the authors.

Figure 1.20b

Percentage of Kindergartners Through Fifth-Graders Whose Parents Reported Participating in Education-Related Activities with Their Children in the Past Month, by Parents' Highest Education Level, 2007



Source: National Center for Education Statistics, 2009, Table 24.

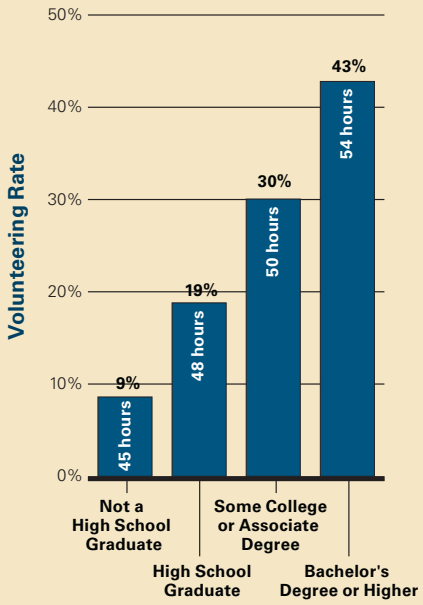
Volunteerism

Both the percentage of people who donate their time to organizations and the number of hours people spend in volunteer activities are higher among individuals with higher levels of education.

- Among adults with at least a bachelor's degree, 43% volunteered for a median of 54 hours from September 1, 2008, through September 1, 2009.
- Among adults with some college or an associate degree, 30% volunteered for a median of 50 hours from September 1, 2008, through September 1, 2009.
- Among high school graduates, 19% volunteered for a median of 48 hours from September 1, 2008, through September 1, 2009.
- In 2008–09, 34% of adults employed part-time volunteered, compared to 29% of those employed full-time. However, only 23% of unemployed adults and a similar proportion of those not in the labor force volunteered.

Figure 1.21

Volunteering Rates Among Individuals Ages 25 and Older and Median Number of Hours Volunteered, by Education Level, 2009



Note: Volunteers are defined as individuals who performed unpaid volunteer activities for organizations during the year ending September 2009.

Source: Bureau of Labor Statistics, 2009f, Table 1 and Table 2.

Also important:

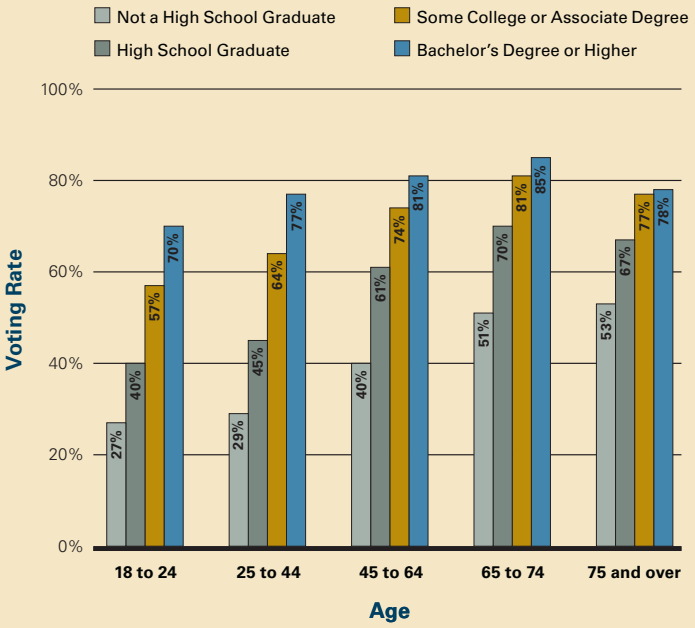
- As is the case with most of the indicators included in this report, the correlation seen here should not necessarily be interpreted as causation. Personal characteristics may make people more likely both to pursue higher education and to volunteer. However, statistical analysis suggests that the actual increments in volunteer activity attributable to increased education are similar to those described here. Enrolling in college significantly increases the likelihood of volunteering, controlling for other demographic characteristics (Dee, 2004; Oreopoulos and Salvanes, 2009).
- At each education level, within each age group, and within each employment category, higher percentages of women than of men volunteered.
- In 2009, the organizations for which volunteers worked the most hours during the year were most frequently religious (34%), followed by educational or youth service related (26%). Another 14% of volunteers performed activities mainly for social or community service organizations.
- Volunteering mainly for religious organizations decreased as educational attainment increased, from 47% of volunteers with less than a high school diploma to 31% of those with a bachelor's degree or higher.

Voting

In every age group, adults with higher levels of education are more likely to vote than those with lower levels of education.

Figure 1.22

Voting Rates Among U.S. Citizens, by Age and Education Level, 2008



Source: U.S. Census Bureau, 2008.

- In the 2008 presidential election, the gap between the voting rates of individuals with at least a bachelor's degree and those with a high school education was smallest among older voters. Among individuals ages 75 and older, there was an 11 percentage point gap between the voting rates of four-year college graduates and high school graduates. Among individuals ages 65 to 74, there was a 15 percentage point gap.
- In the 2008 presidential election, the gap between the voting rates of individuals with at least a bachelor's degree and those with a high school education was largest among younger voters. Among individuals ages 25 to 44, there was a 32 percentage point gap between the voting rates of four-year college graduates and high school graduates. The voting rate gap for individuals ages 18 to 24 was 30 percentage points.
- The gap between the voting rates of individuals with some college or an associate degree and those with a high school education ranged from a 10 percentage point difference for those age 75 and over to a 19 percentage point gap for those ages 25 to 44, among whom 64% of those with some college or an associate degree and 45% of high school graduates voted.

Also important:

- The highest overall voting rate in presidential elections since 1972 was 65% in 1992. In both 2004 and 2008, 64% of citizens ages 18 and older voted. The highest voting rate among four-year college graduates was in 1992 (85%), but the 1972 presidential election saw the highest voting rates for those without a bachelor's degree.

Part 2:
The Distribution of the Benefits: Who Participates and Succeeds in Higher Education?

Participation and success rates in higher education differ considerably among demographic groups. High school graduates from low-income backgrounds, those whose parents did not go to college, and black and Hispanic students have lower college enrollment rates and much lower educational attainment rates than others. Documenting the different patterns observed among segments of the population is an important first step toward generating awareness that a problem exists and finding solutions. But careful interpretation of the evidence and in-depth analysis of the causes of differences in educational attainment are prerequisites to real progress. As the data in this section reveal, a shortage of money interferes with educational opportunities, but money cannot remove all the barriers faced by many individuals.

No perfect measure of college completion rates is available. The federal government collects annual data on the percentage of first-time full-time college students who graduate from the institution in which they first enrolled within a specified time period. But many students attend more than one institution over the course of their college careers. Occasional longitudinal studies follow individual students over time to allow analysis of their educational progress and attainment in the context of their demographic characteristics. Unfortunately, as we go to press we are awaiting results from a new study of this type. By definition it will take many years to find out how well students enrolling in college today will succeed. And many students, particularly at public two-year colleges, enroll in specific courses without the intention of earning degrees. Moreover, we lack definitive evidence of the importance of degree completion. As the data reported in Part I of *Education Pays* reveal, adults with some college but no degree earn more and have different life experiences than high school graduates. They do not, however, fare as well as those who earn degrees. There is a growing and valid concern about the detrimental effect on individuals and the wasted resources resulting from low completion rates. The indicators that follow rely on a variety of sources to provide multiple views of the educational experiences of different groups of students.

Our goal in highlighting gaps in educational attainment is not to suggest that everyone needs a bachelor's degree or that success in life should be defined by education level. Individual preferences, goals, and capabilities differ. However, the differences across demographic groups documented here are unsettling. Students whose parents did not go to college are much less likely to complete degrees than students with similar family incomes whose parents are college graduates. Taking parents' education levels into consideration, students from lower-income families are less likely to graduate from a postsecondary institution. The gap between students from high- and low-income backgrounds in bachelor's degree attainment is much larger than the gap in college enrollment. The enrollment and degree attainment rates of women have far outpaced those of men in recent years.

Assessing the data reported here and summarizing them succinctly is not easy. Even as college enrollment rates for blacks and Hispanics have risen over time, they chase a moving target of white and Asian enrollment rates. Is it the gaps among groups or the absolute levels of enrollment about which we should be most concerned? Increasing evidence indicates that the types of institutions in which different groups of students tend to enroll have a measurable impact on their likelihood of success. Low-income students with given academic qualifications are more likely to succeed if they attend the more selective and better-funded institutions that are generally populated by more affluent students. Is focusing on providing access to postsecondary education enough, or should we focus as well on helping students select their institutions and on ensuring that they have the support necessary to complete their studies?

The data on college enrollment and completion reported in the following pages are more disturbing in light of the benefits for individuals and for society documented in Part I of *Education Pays*. Limited participation in postsecondary education seriously constrains individual opportunities and living standards. Society as a whole suffers from lower levels of civic engagement and from unnecessary barriers to the success of the next generation, in addition to a loss of productivity and output, when individuals miss out on educational opportunities. The indicators on the following pages describe pressing problems for our nation. We hope readers will use this information to work toward constructive solutions.

College Enrollment by Income

The 25 percentage point gap in enrollment rates between the 2008 high school graduates from the highest income backgrounds (80%) and those from the lowest income backgrounds who enrolled immediately in college (55%) was the smallest for the 24 years for which data are available.

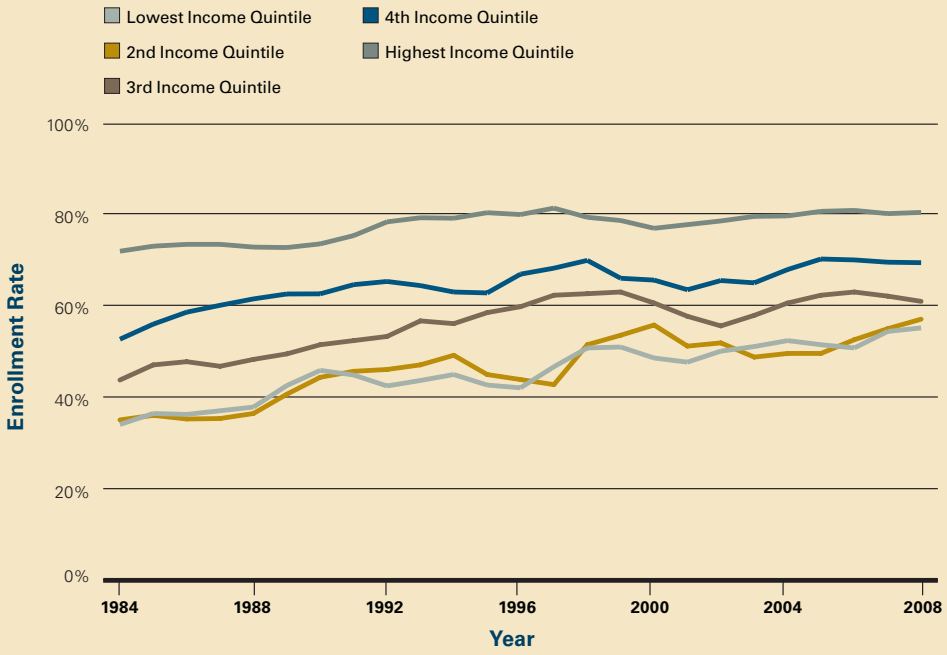
- The college enrollment rate of high school graduates from the third quintile, with family incomes ranging from $35,001 to $55,050 in 2008, declined from 63% to 55% from 1998 to 2002, and was 61% in 2008.
- The college enrollment rate of high school graduates from the two lowest income quintiles increased from 1998 to 2008.

Also important:

- In the U.S. Census data on which the enrollment rates reported here are based, students who do not live either on campus or with their parents are not considered part of their parents' families. The same is true for high school graduates who leave their parents' homes and enter the labor force. More accurate representation of differential enrollment rates would require reassigning these young people to their families of origin.
- Immediate enrollment rates of high school graduates do not capture students who wait more than a year after graduation to continue their education, a pattern more common among lower-income students than among those from higher income backgrounds.

Figure 2.1

Postsecondary Enrollment Rates of Recent High School Graduates by Family Income, 1984–2008



Postsecondary Enrollment Rates of Recent High School Graduates by Family Income

Income Quintile	1988	1998	2008
Lowest	38%	51%	55%
2nd	36%	51%	57%
3rd	48%	63%	61%
4th	61%	70%	69%
Highest	73%	79%	80%

Note: Based on enrollment in college within 12 months of high school graduation. Income quintiles are defined in terms of all households. In 2008, the upper income limits of the quintiles were: lowest, $19,000; 2nd, $35,000; 3rd, $55,050; and 4th, $88,230. High school graduates are not evenly distributed among income quintiles because graduation rates are lower among students from low-income backgrounds. Enrollment rates reflect moving averages, with the rate for each year the average of three years — the specified year and the two preceding years.

Source: National Center for Education Statistics, 2010.

College Enrollment by Race/Ethnicity

In the mid-1970s, Hispanic high school graduates were as likely as white graduates to enroll immediately in college. In 2000, the Hispanic enrollment rate was 19 percentage points below the white enrollment rate; the gap narrowed to 8 percentage points by 2008.

- From 1998 to 2004, the gap between the proportions of white and black high school graduates who enrolled in college within a year fluctuated between 8 and 10 percentage points. By 2008, the gap had grown to about 14 percentage points.
- The immediate college enrollment rate for black high school graduates was higher over the decade ending in 2008 than it had ever been before, but in contrast to the patterns for whites and Hispanics, it did not grow over the decade.
- In 2008, about 70% of white, 62% of Hispanic, and 56% of black high school graduates enrolled in college within 12 months of graduation.
- Among all civilian noninstitutionalized high school graduates between the ages of 18 and 24 in 2008, as illustrated in Figure 2.2b, about 48% of whites, 37% of Hispanics, and 41% of blacks were enrolled in postsecondary education.

Also important:

- The gaps in enrollments by race/ethnicity are diminished by the gaps in high school graduation rates. In 2008, 4.8% of whites between the ages of 16 and 24 had neither completed a high school program nor were enrolled in high school, compared to 9.9% of blacks and 18.3% of Hispanics in this age range.
- Both incarceration and military participation rates are higher for blacks than for whites and Hispanics, further diminishing the enrollment gaps reported here, which exclude these populations.

Figure 2.2a

Postsecondary Enrollment Rates of Recent High School Graduates by Race/Ethnicity, 1975–2008

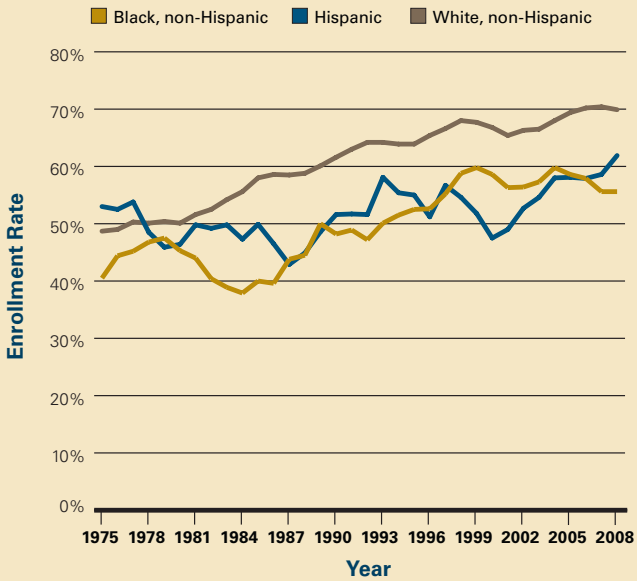


Figure 2.2b

Postsecondary Enrollment Rates of All High School Graduates Ages 18 to 24, by Race/Ethnicity, 1975–2008

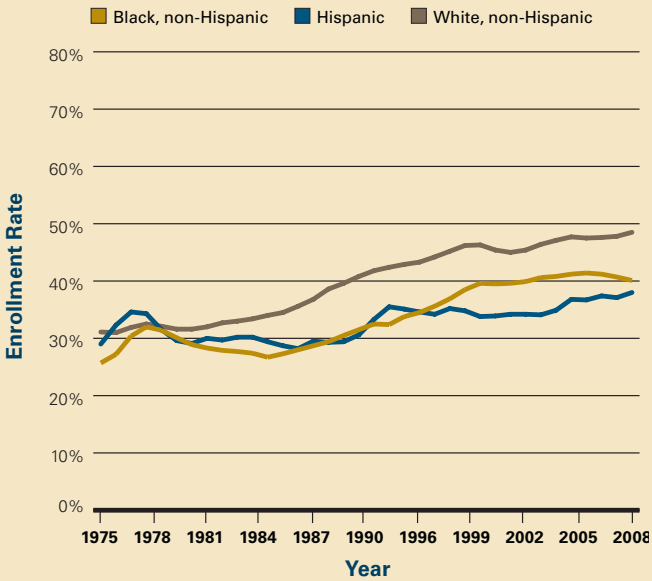


Figure 2.2a shows the percentage of high school graduates who enrolled in college within 12 months of high school graduation. Figure 2.2b shows the percentage of all high school graduates between the ages of 18 and 24 in the civilian noninstitutionalized population (i.e., not in the military or in prison) enrolled in college in the specified year.

Note: Postsecondary enrollment includes both undergraduate and graduate students. Enrollment rates reflect moving averages, with the rate for each year the average of three years — the specified year and the two preceding years. Because of small sample sizes for Hispanics and black, annual fluctuations in enrollment rates may not be significant.

Source: National Center for Education Statistics, 2009, Table 201.

Source: National Center for Education Statistics, 2009, Table 204.

College Enrollment by Gender and Age

In 2000, 60% of males and 66% of females who had completed high school in the past year were enrolled in college. By 2008, those percentages had increased to 66% and 72%, respectively.

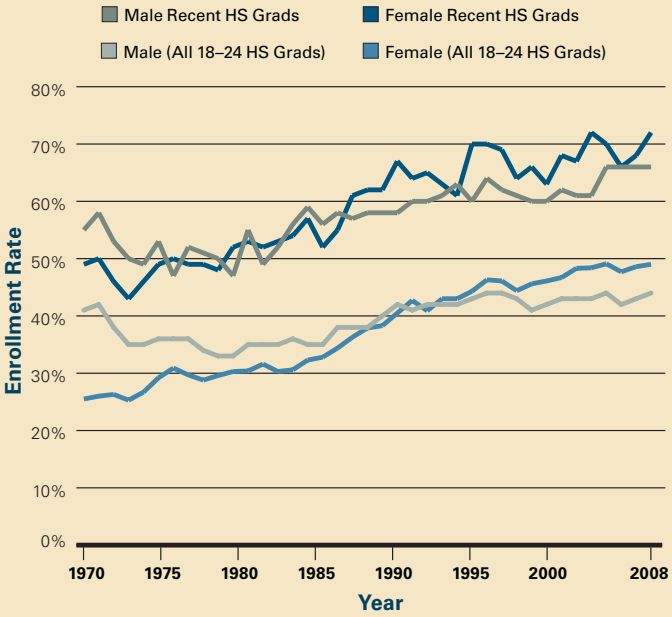
- College enrollment rates for all 18- to 24-year-olds are lower than rates for recent high school graduates because many students are enrolled for only a fraction of this six-year period in their lives. In 2008, 44% of males and 49% of females between the ages of 18 and 24 were enrolled in college.
- The decline in the male college enrollment rate in the late 1960s and early 1970s is at least partly attributable to the end of college deferments from the military draft, which ended in 1973.
- The proportion of 25- to 29-year-olds enrolled in postsecondary education fluctuated between 8% and 10% from 1970 to 1993. Since that time, 11% to 13% of individuals in this age range have been enrolled each year.
- From 1974 to 2008, 6% to 7% of individuals ages 30 to 34 were enrolled in postsecondary education each year.

Also important:

- The enrollment rates reported in Figure 2.3a are based on high school graduates. Enrollment rates for all 18- to 24-year-olds are lower than the enrollment rates reported here.
- In 2008, 8.5% of males and 7.5% of females between the ages of 16 and 24 had not completed high school and were not enrolled (NCES, 2009, Table 108).
- In 2008, half of all 18- to 21-year-olds in the U.S. were enrolled in postsecondary education. Thirty years earlier, 36% of 18- to 19-year-olds and 30% of 20- to 21-year-olds were enrolled.

Figure 2.3a

Postsecondary Enrollment Rates of Recent High School Graduates and of All 18- to 24-Year-Old High School Graduates by Gender, 1970–2008

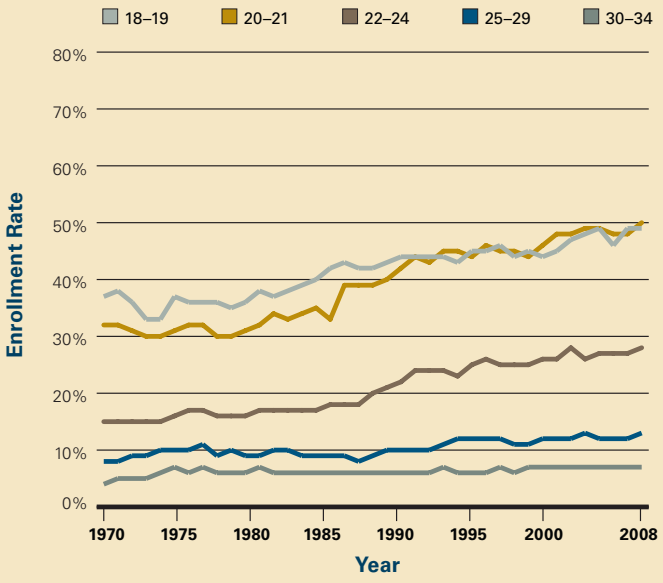


Note: "Recent high school graduates" completed high school during the 12 months preceding postsecondary enrollment. "Postsecondary enrollment" includes both undergraduate and graduate students. Some 18- to 24-year-olds have completed college and are no longer enrolled. They are not included in enrollment rates.

Source: U.S. Census Bureau, 1970–2008.

Figure 2.3b

Postsecondary Enrollment Rates of All Individuals Ages 18 to 34 by Age, 1970–2008



Note: Includes all 18- to 34-year-olds, whether or not they have graduated from high school. "Postsecondary enrollment" includes part-time and full-time enrollment in institutions with programs of at least two years.

Source: NCES, 2009.

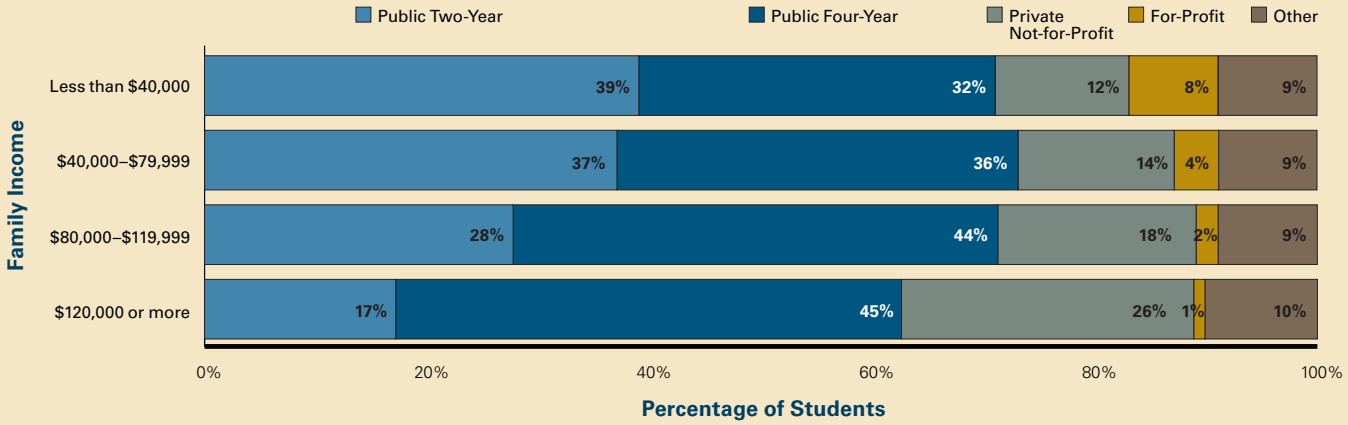
Stratification Within Higher Education

About 40% of dependent undergraduate students from families with incomes below $40,000 were enrolled in two-year public colleges in 2007–08. Seventeen percent of those from families with incomes of $120,000 or higher were enrolled in this sector.

- Only 1% of dependent undergraduate students from families with incomes of $120,000 or higher were enrolled in for-profit institutions in 2007–08, compared to 8% of those from families with incomes below $40,000.
- The income distribution of students enrolled at four-year public doctorate-granting universities is almost identical to the income distribution of students at four-year non-doctorate-granting private not-for-profit colleges.

Figure 2.4a

Dependent Students' Postsecondary Sector by Family Income, 2007–08



Note: The "Other" category in Figure 2.4a includes the 9% of all students who were enrolled in more than one institution, in addition to small numbers of students who were enrolled in less-than-two-year public and for-profit institutions and less-than-four-year private not-for-profit institutions. Almost half of all college students are classified as independent because they meet at least one of the following criteria: age 24 or older, married, have dependents, veterans, orphans, or wards of the court. These students are not included in this analysis because parental income is not available for them. Percentages may not add to 100 due to rounding.

Source: National Center for Education Statistics, 2008a.

Stratification Within Higher Education

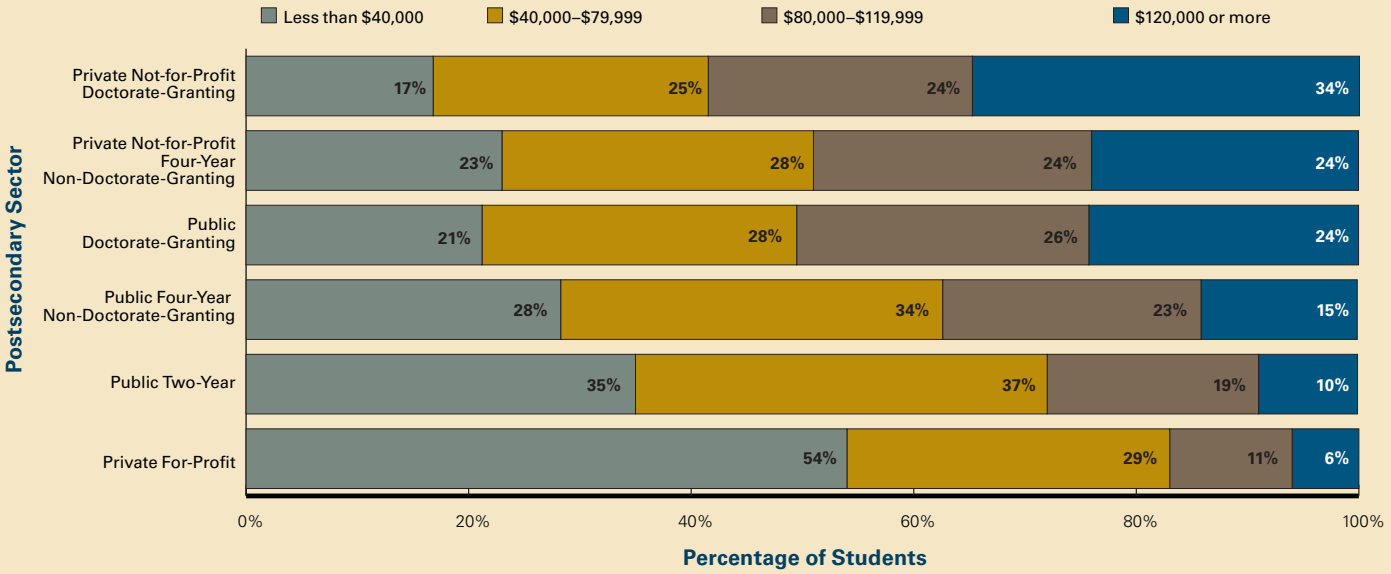
- Over half of the dependent students enrolled in for-profit institutions in 2007–08 were from families with incomes below $40,000. One-third of two-year public college students and 21% of students at public doctorate-granting universities were from these low-income families.
- One-third of dependent undergraduates enrolled in private not-for-profit doctorate-granting universities were from families with incomes of $120,000 or higher. One-quarter of students enrolled in public doctorate-granting institutions and 10% of two-year public college students were from these high-income families.

Also important:

- The percentage of students from all income levels below $100,000 enrolled in public two-year institutions increased between 2003–04 and 2007–08. The percentages of these students enrolling in both public doctorate-granting and private not-for-profit non-doctorate-granting colleges and universities declined.
- Students who were independent of their parents are not included here. In 2007–08, they constituted 79% of the students at private for-profit institutions, 57% of the students at two-year public colleges, 39% at public, and 41% at private non-doctorate-granting institutions. Independent students are less likely to enroll at doctorate-granting institutions, where they constituted 26% of the student body at both public and private doctorate-granting universities in 2007–08.

Figure 2.4b

Family Income Distribution of Dependent Students Within Postsecondary Sectors, 2007–08



Note: Percentages may not add to 100 due to rounding.

Source: National Center for Education Statistics, 2008a.

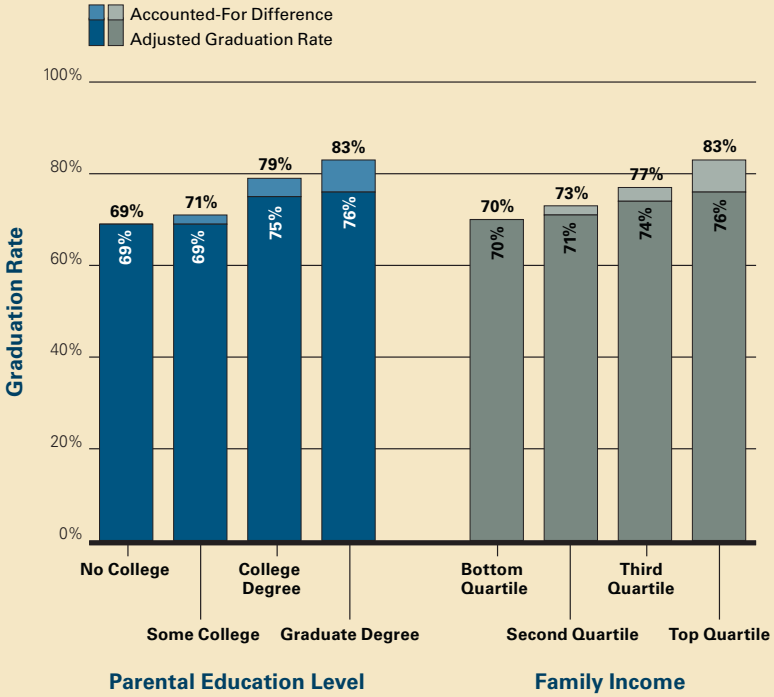
College Completion

Students from higher-income families and students whose parents have four-year college degrees are more likely than others to earn bachelor's degrees within six years. Differences in the characteristics and qualifications of the students account for about half of the difference in graduation rates.

- Among 1999 entrants at public flagship universities whose parents had a bachelor's degree, 79% graduated within six years; among those whose parents had only a high school diploma, 69% graduated within six years.
- After considering differences in high school GPA, SAT®, or ACT scores, state residency status, race or ethnicity, gender, university attended, and family income, the gap between students whose parents had a bachelor's degree and students whose parents had no college declined from 10% to 6%.
- Among students from the highest-income families, 83% graduated within six years; among those from the lowest-income families, 70% graduated within six years.
- After adjusting for student characteristics and parental education level, the gap in graduation rates between students from the highest-income families and students from the lowest-income families declined from 13% to 6%.

Figure 2.5a

Percentage of 1999 Entrants at Flagship Universities Graduating Within Six Years, by Parental Education Level and Family Income, Adjusted for Student Characteristics



The total height of each bar shows the percentage of students from each group that completed a bachelor's degree within six years of entering the institution. The dark segments of the bars show the adjusted graduation rate for each group. The adjusted rate for high-income students is what their rate would have been if all of their characteristics (high school GPA, test scores, state residency status, gender, race/ethnicity, and parental education) had been the same as the characteristics of low-income students. The light segments show the gap accounted for by differences in these student characteristics, including income differences for parental education groups and differences in parental education for income groups.

Note: Data are based on a sample of 21 flagship universities across the country. Graduation rates are from the university the student entered in 1999. Similar calculations allowing for transfer to other institutions yielded similar results.

Source: Bowen et al., 2009.

College Completion

Students who attend the most selective colleges for which they are academically qualified are more likely to graduate than are similar students who "undermatch" by enrolling in colleges that do not match their qualifications.

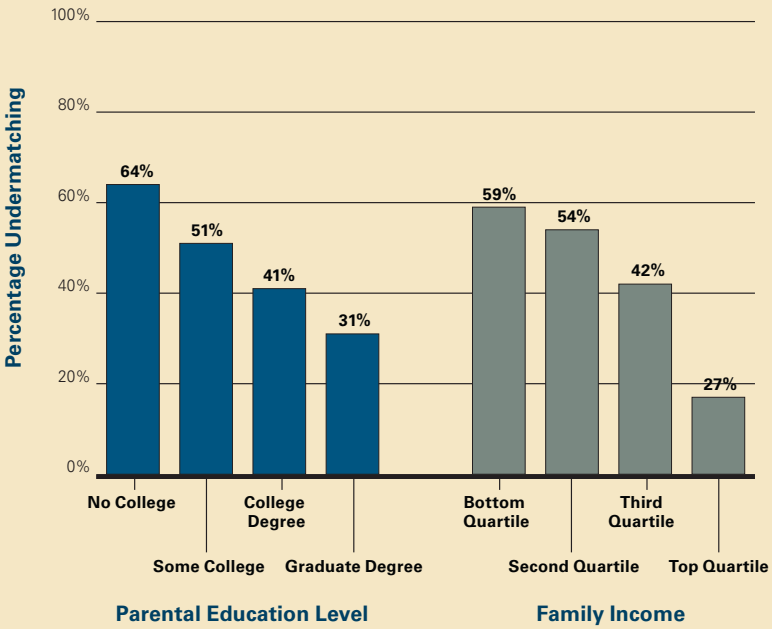
- Students from lower-income backgrounds and those whose parents do not have college degrees are most likely to "undermatch," or enroll in less-selective colleges than those for which they are qualified. Among 1999 graduates of North Carolina high schools, 59% of those who attended selective state universities earned their bachelor's degrees in four years, compared to 44% of students with similar academic qualifications who enrolled in less-selective institutions.

Also important:

- A number of studies of different populations find that the probability of completing a four-year degree is significantly increased by enrollment in the most selective institution for which a student is qualified. (See e.g., Alon and Tienda, 2005; Light and Strayer, 2000.)
- According to the Consortium on Chicago School Research, about 62% of Chicago public schools' top graduates attend a college with a lower selectivity level than that to which they would likely have been accepted. Among students with qualifications that would make them acceptable at a highly selective college, about 45% enroll at a less-selective four-year college than that for which they are qualified, and an additional 17% enroll in a nonselective four-year college, a two-year college, or no college at all (Roderick et al., 2008).

Figure 2.5b

Percentage of 1999 Entrants at North Carolina Public Universities Enrolling in Less-Selective Institutions than Those for Which They Were Eligible, by Socioeconomic Factors



Four-Year and Six-Year Graduation Rates of 1999 Entrants at North Carolina Public Universities by Institutional Selectivity

	Undermatched	Went to Selective Institution
Graduated in Four Years	44%	59%
Graduated in Six Years	66%	81%

In Figure 2.5b and the table above, "undermatching" is defined as having test scores and high school grades that would make acceptance at a very selective state university very probable, but enrolling instead at a less-selective institution.

Source: Bowen et al., 2009.

College Completion Rates

Of first-time full-time students who began studying for a bachelor's degree at a four-year institution in 2002, 57% earned a B.A. within six years from the institution at which they began their studies. Completion rates averaged 65% at private not-for-profit, 55% at public four-year, and 22% at private for-profit institutions.

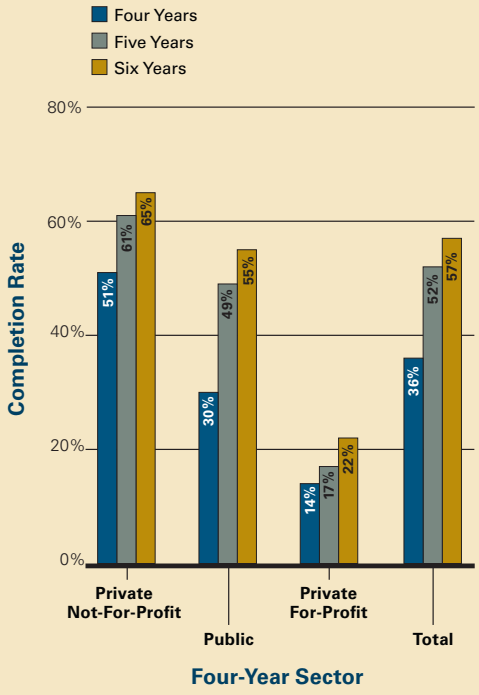
- Just over half of the public four-year college graduates earned their degrees within four years. More than three-quarters of those who earned bachelor's degrees from private not-for-profit institutions within six years completed their degrees within four years.
- Within each racial/ethnic group, four-year degree completion rates are over twice as high in the private not-for-profit sector as in the for-profit sector.
- The gap between completion rates for black students and those for white and Asian students is larger in the for-profit sector than in the public and private not-for-profit sectors.

Also important:

- Completion rates for students who began their studies at two-year institutions in 2005 were highest in the for-profit sector, where 60% of full-time students completed their credentials within three years. Of these students, 87% completed less-than-two-year certificate programs. In contrast, only 22% of students attending public two-year colleges completed credentials; 29% of these credentials were for programs shorter than two years (NCES, 2010b).
- These completion rates do not include students who transferred to a different college. When transfers who earned a B.A. at a different college are included, the six-year B.A. completion rate is about seven percentage points higher, or 64% (NCES, 2004).

Figure 2.6a

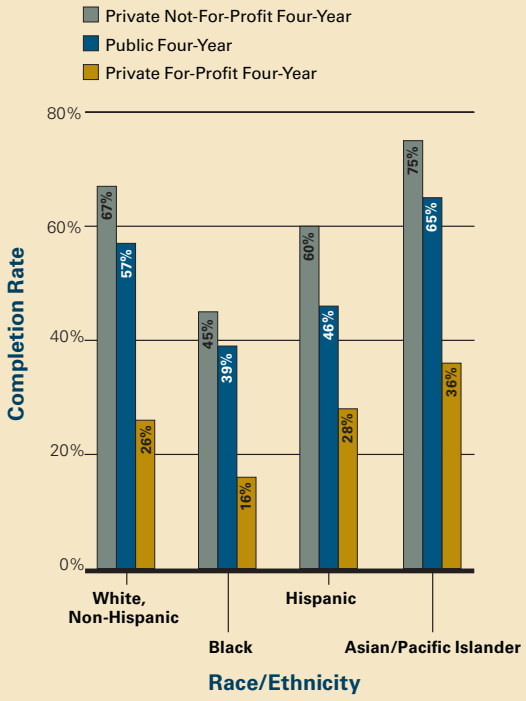
Percentage of First-Time Full-Time Students Beginning Bachelor's Degree Programs in 2002 Who Earned a B.A. at the Original Institution Within Four Years, Five Years, or Six Years, by Sector



Source: National Center for Education Statistics, 2008b.

Figure 2.6b

Percentage of First-Time Full-Time Students Beginning Bachelor's Degree Programs in 2002 Who Earned a B.A. at the Original Institution Within Six Years, by Sector and Race/Ethnicity



Source: National Center for Education Statistics, 2008b.

Educational Attainment over Time

The proportion of adults in the U.S. between the ages of 25 and 34 with a four-year college degree held steady at 24% in the 1980s, but grew at an average rate of about 2.1% per year in the 1990s and about 1.0% per year from 2000 to 2009, from 29% to 32%.

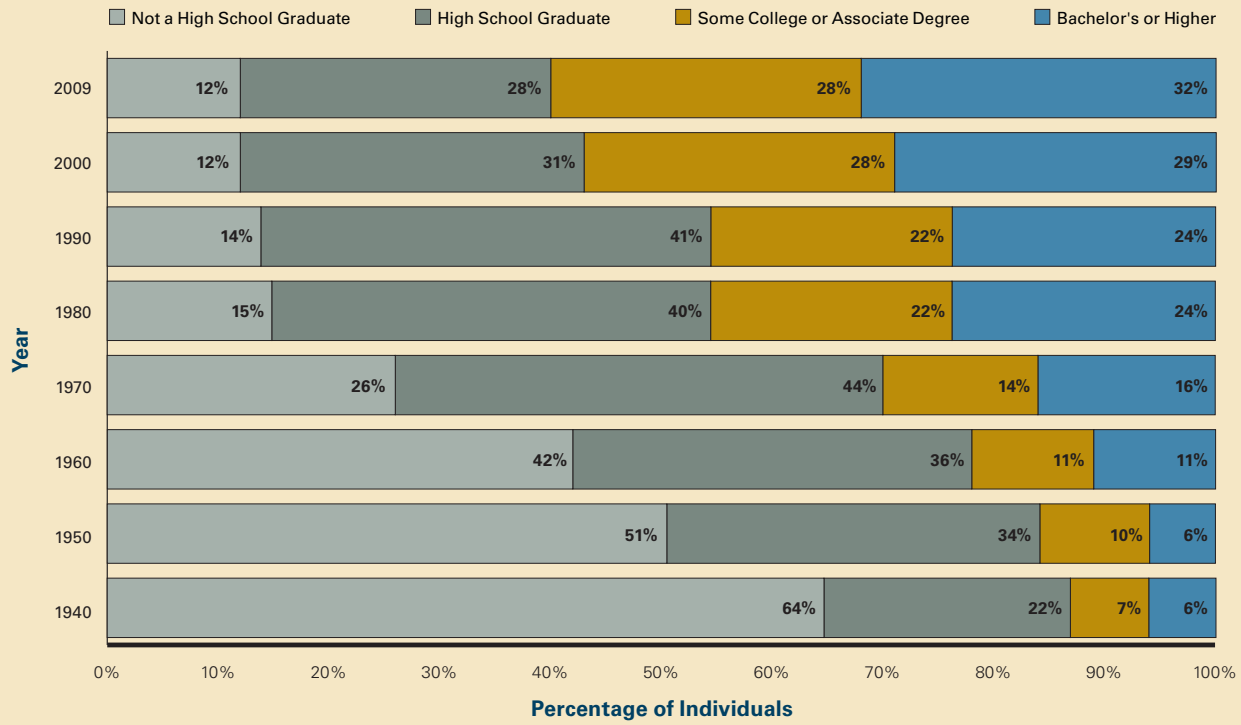
- The proportion of young adults with four-year college degrees declined slightly during the 1940s, the decade of World War II. It grew dramatically in the 1950s, at an average annual rate of about 7.6%.
- The proportion of adults between the ages of 25 and 34 who have some college experience but not a four-year degree grew rapidly in the 1970s and increased from 22% to 28% in the 1990s, but did not change measurably between 2000 and 2009.

Also important:

- The changing age composition of the population contributes to changes in the pattern of educational attainment. The proportion of adults between the ages of 25 and 34 increased from 23% to 28% from 1970 to 1980, but has been declining since 1987 (to 20% of the population in 2008).
- The fact that the earnings differential between high school graduates and college graduates has increased over time despite the increasing prevalence of college degrees indicates that the demand for college-educated workers in the labor market has increased more rapidly than the supply. (See Goldin and Katz, 2008, and Autor, 2010, for discussion of the failure of the supply of college graduates to keep up with the demand.)

Figure 2.7

Education Level of Individuals Ages 25 to 34, 1940–2009



Note: Percentages may not add to 100 due to rounding.

Source: U.S. Census Bureau, 2009b, Table A-1.

Educational Attainment by Race/Ethnicity and Gender

Among blacks, whites, and Hispanics, larger percentages of women than of men between the ages of 25 and 29 had bachelor's degrees in 2009. The gender gap was smallest for blacks, among whom 21% of women and 18% of men in this age group had four-year college degrees.

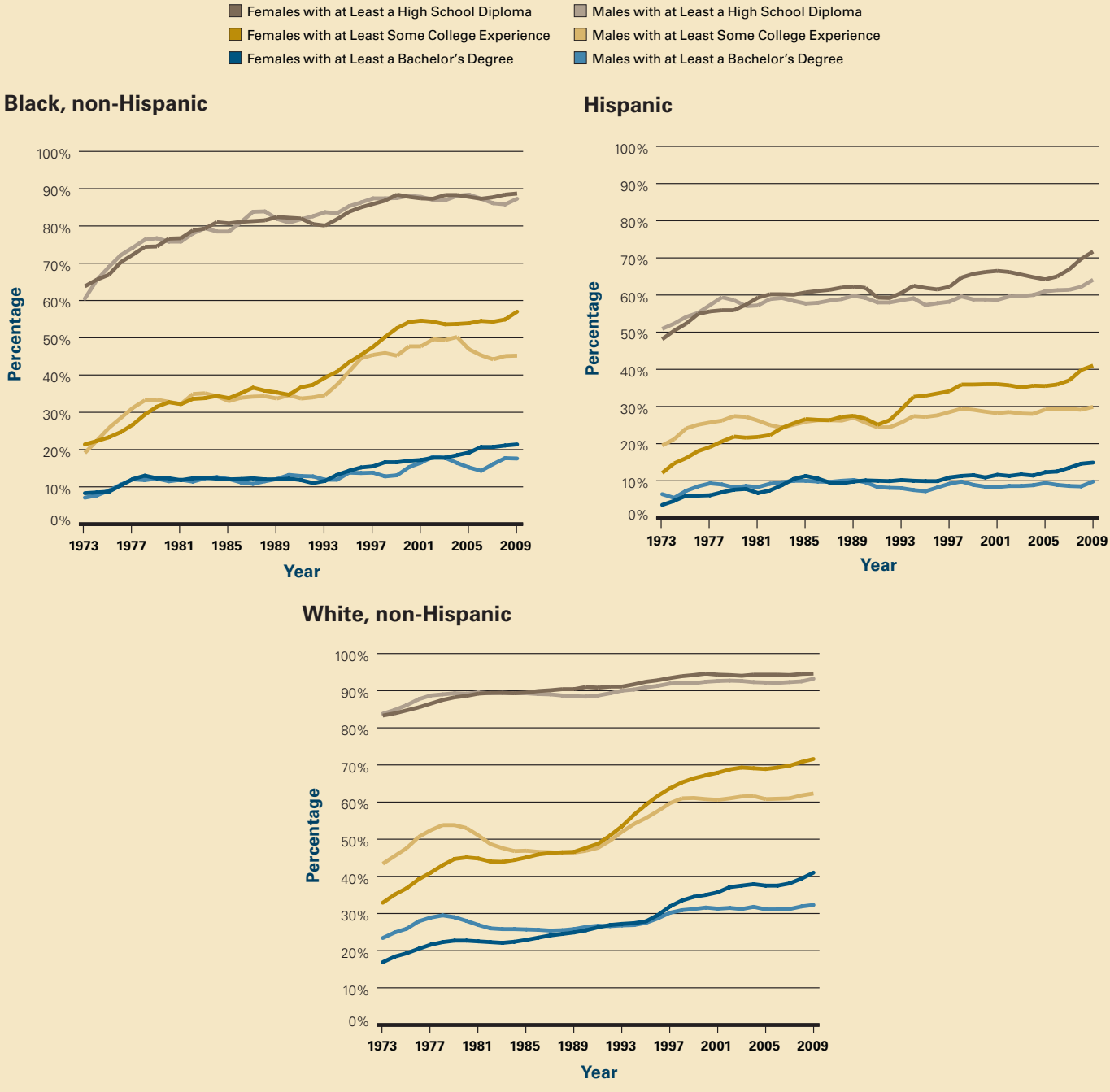
- In 1989, 26% of white men and 25% of white women between the ages of 25 and 29 had bachelor's degrees. Twenty years later, 32% of white men and 41% of white women in this age bracket had bachelor's degrees.
- About 10% of Hispanic men between the ages of 25 and 29 had bachelor's degrees in 2009, the same percentage as in 1989. The percentage with at least some college grew from 27% in 1989 to 30% in 2009.
- Among black men between the ages of 25 and 29, the percentage with bachelor's degrees increased from 12% in 1989 and 13% in 1999 to 18% in 2009. The percentage of black men with at least some college increased from 34% in 1989 to 45% in 1999, but remained at 45% a decade later.
- In 2009, 41% of white women, 21% of black women, and 15% of Hispanic women between the ages of 25 and 29 had bachelor's degrees. The percentages with at least some college were 72%, 57%, and 41%, respectively.

Also important:

- Educational attainment is higher for U.S.-born Hispanics than for Hispanic immigrants. Among adults 25 and older in 2008 and 2009, about 13% of those born outside the U.S. and 30% of those born in the U.S. to immigrant Hispanic mothers had some college experience but less than a bachelor's degree. About 20% of the second generation had at least a bachelor's degree, compared to only 11% of Hispanic immigrants (U.S. Census Bureau, *Current Population Survey,* March Supplement, calculation by Jennifer Bendewald).
- Hispanics include individuals from many different countries, with considerable variation in educational attainment rates. For example, both first- and second-generation Mexican immigrants are much less likely than those from other Latin American countries to have completed college.

Figure 2.8

Percentage of Individuals Ages 25 to 29 Who Have Completed High School, Some College or a Bachelor's Degree, by Race/Ethnicity and Gender, 1973–2009



Note: Attainment rates reflect moving averages, with the rate for each year the average of three years — the specified year and the two preceding years.

Source: National Center for Education Statistics, 2007 and 2010.

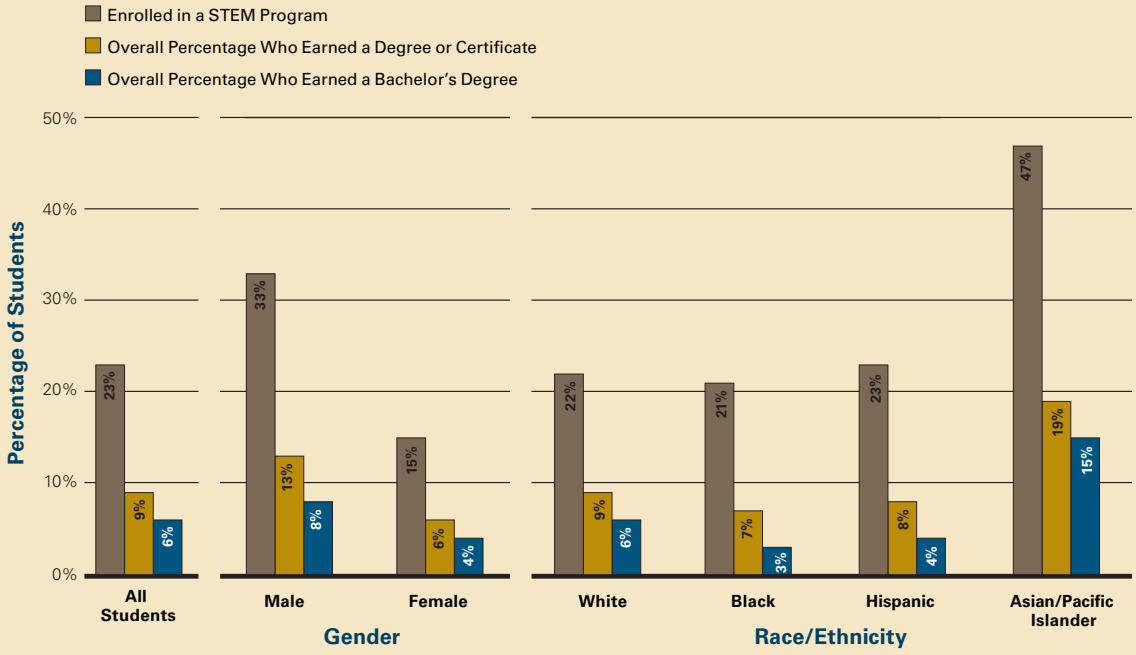
Science, Technology, Engineering, or Mathematics (STEM) Fields

Twenty-three percent of beginning postsecondary students in 1995–96 entered a science, technology, engineering, or mathematics (STEM) field. Forty-one percent of these students — or 9% of all entering students — earned a STEM credential by 2001. Twenty-seven percent of these students — or 6% of all entering students — earned a STEM bachelor's degree by 2001.

- Male students are about twice as likely as female students to enter STEM fields; among both men and women, about 40% of those who enter these fields complete a credential and about a quarter earn a bachelor's degree in a STEM field.
- About twice as many Asian as white, black, or Hispanic students enter STEM fields. Completion rates are lowest for black and Hispanic students, with only 16% of those in each of these groups who enter STEM fields earning bachelor's degrees in these fields, compared to about 30% of the Asian and white students who enter these fields.

Figure 2.9a

Percentage of 1995–96 Beginning Postsecondary Students Who Studied and Earned Degrees in Science, Technology, Engineering, or Mathematics (STEM) Programs, by Gender and Race/Ethnicity



Sources: National Center for Education Statistics, 1996 and 2001; calculations by the authors.

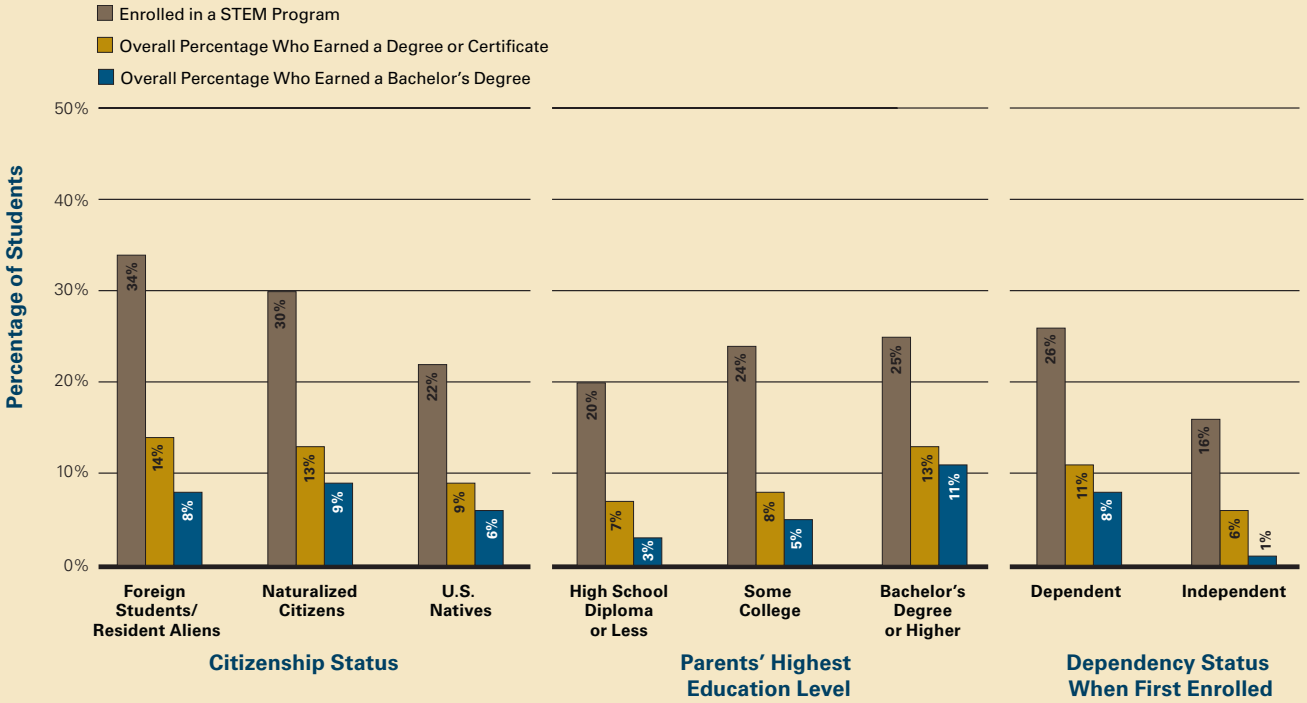
Science, Technology, Engineering, or Mathematics (STEM) Fields

The percentage of students entering STEM fields is similar, regardless of their parents' level of education. However, students whose parents have at least a bachelor's degree are much more likely to complete STEM credentials.

- Between 20% and 25% of entering students in 1995–96 enrolled in STEM fields, regardless of the level of education attained by their parents. However, about half of STEM students whose parents were four-year college graduates completed a STEM credential by 2001, compared to about a third of those whose parents had less education.
- Only 1% of independent students beginning in 1995–96 earned a bachelor's degree in a STEM field, compared to 8% of those who began as dependent students.

Figure 2.9b

Percentage of 1995–96 Beginning Postsecondary Students Who Studied and Earned Degrees in Science, Technology, Engineering, or Mathematics (STEM) Programs, by Citizenship Status, Parents' Education Level, and Dependency Status



Sources: National Center for Education Statistics, 1996 and 2001; calculations by the authors.

College Enrollment Rates by State

In 2005–06, the percentage of high school graduates who enrolled in college immediately after graduating from high school ranged from 45% in Arizona to 75% in New York and Mississippi.

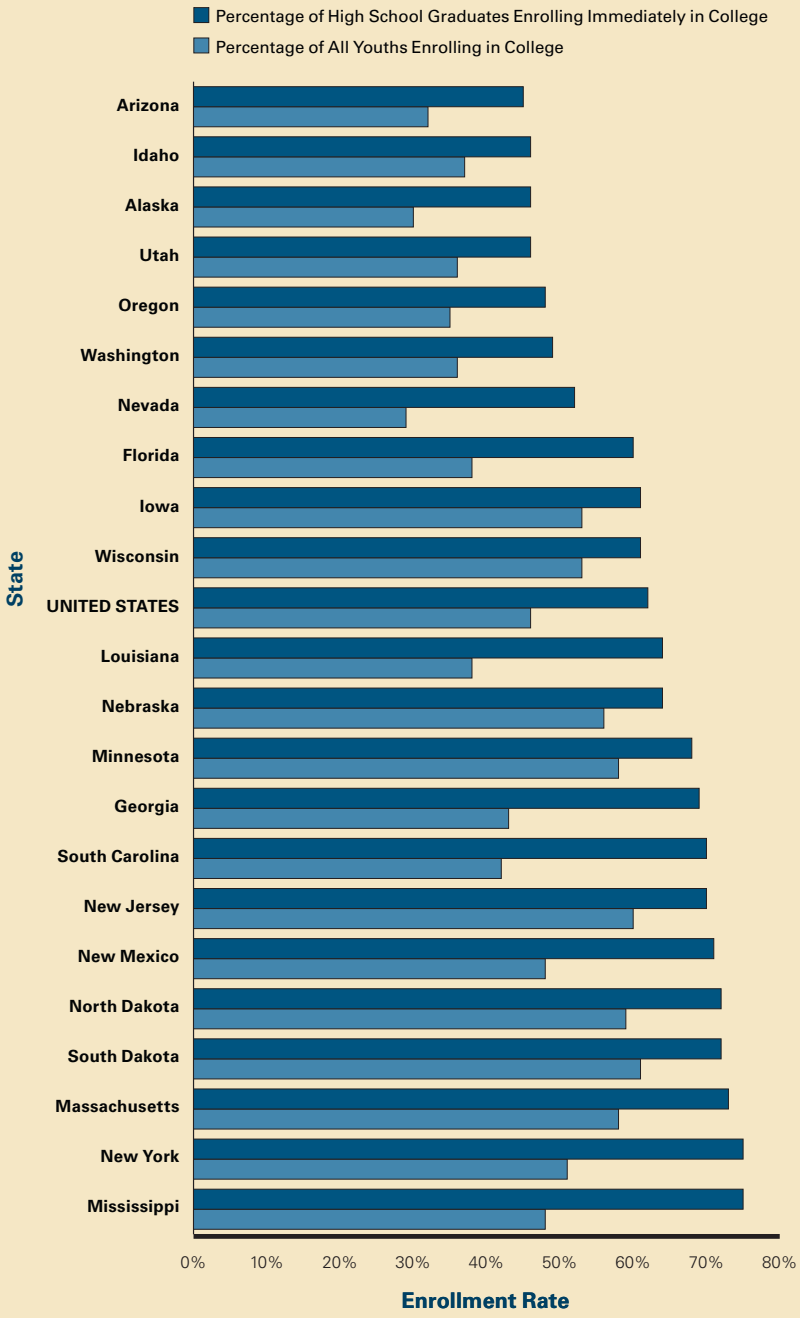
- Some states with high college enrollment rates among high school graduates have low rates of graduation from high school. For example, in 2005–06, only Georgia's 62% high school graduation rate and South Carolina's 61% were lower than Mississippi's 63% rate. New York's 67% high school graduation rate compares to 73% for the nation as a whole.
- The highest overall college enrollment rates, including all students regardless of whether they completed high school, were 60% in New Jersey and 61% in South Dakota.
- The lowest overall college enrollment rates, including all students regardless of whether they completed high school, were 29% in Nevada and 30% in Alaska. These percentages compare to 46% for the nation as a whole.
- In 2005–06, 62% of high school graduates enrolled in college immediately after high school, and 50% attended institutions in their home state (not shown here).
- The percentage of high school graduates attending college in their home state ranged from 15% in the District of Columbia and 24% in Vermont, to 69% in Mississippi and 62% in South Carolina. Arkansas, Ohio, and Minnesota matched the national average of 50%.

Note: States are listed in order of the percentage of high school graduates enrolling in college immediately after high school. Includes the six states with the highest and lowest college enrollment rates among high school graduates, the six states with the highest and lowest college enrollment rates of all youths, and the six states with the highest and lowest high school graduation rates (not shown here).

Source: National Center for Education Statistics, 2009, Tables 105 and 203.

Figure 2.10

Percentage of High School Graduates and of All Youths Enrolling in College Immediately After High School, Selected States, 2005–06

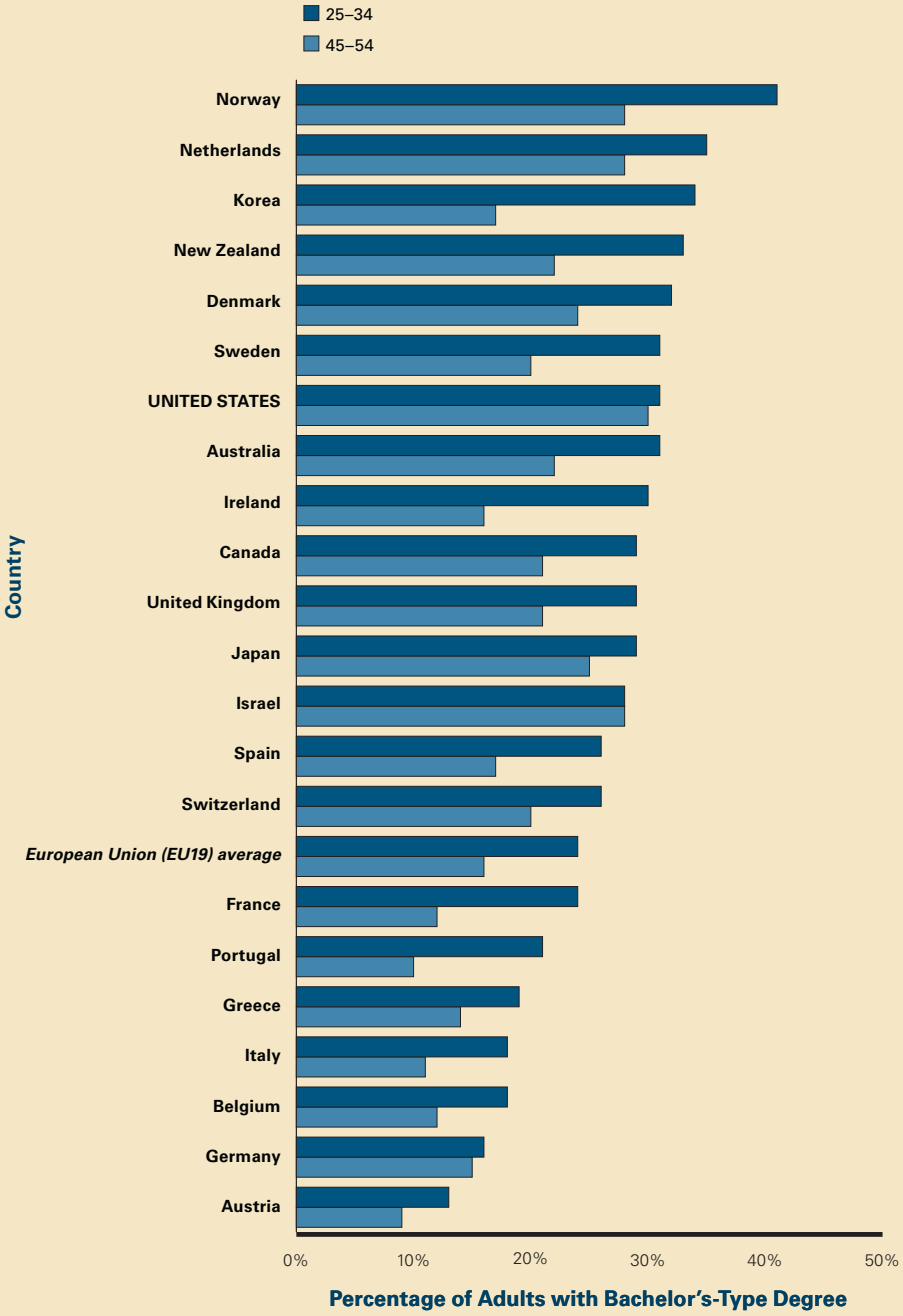


International Comparisons

In 2007, the United States ranked first in the percentage of adults ages 45 to 54 who had completed a bachelor's-type postsecondary degree. Seven countries ranked higher in the percentage of adults ages 25 to 34 who had completed a degree.

Figure 2.11

International Comparison of Percentage of Adults Ages 25–34 and 45–54 with at Least a Bachelor's-Type Postsecondary Degree, Selected Countries, 2007



Source: Organisation for Economic Co-operation and Development 2009, Table A1.3a.

- The graph shows a subset of OECD countries. Finland (not shown) also has a higher attainment rate than the U.S.
- In Korea and Poland (not shown), the percentage of 25- to 34-year-olds with bachelor's-type degrees in 2007 exceeded the percentage of 45- to 54-year-olds with such degrees by 17 percentage points. In these countries, only 17% and 13%, respectively, of the older groups had earned degrees, compared to 30% in the U.S.
- Among 35- to 44-year-olds, not shown here, the 33% bachelor's-type degree attainment rate in the U.S. in 2007 was higher than that of any other country except Norway, whose rate was 34%. Thirty percent of this age group in Korea and 29% in the Netherlands held these degrees.

Also important:

- Each country has distinct types of institutions and offers distinct types of degrees. Comparisons of educational attainment across nations do not take these differences into account.
- Changing demographics and political structures may have a significant impact on educational attainment patterns. For example, East and West Germany were unified in 1989. Immigration patterns also have a measurable impact on educational attainment.
- The $25,109 in total postsecondary expenditures per student in the U.S. in 2006 exceeded expenditures in all other countries. Switzerland's $22,230 ranked second and Sweden's $16,991 ranked third. Expenditures in the U.S. were also highest if only core services are included (OECD, 2009).
- For a critical perspective on OECD comparisons, see Adelman, 2009.
- When short-term postsecondary degrees (not shown here) are taken into account, the 55% to 56% attainment rates among 25- to 34-year-olds in Canada, Korea, and the Russian Federation (not shown) were highest. In the U.S., 40% of this age group had a postsecondary degree in 2007.

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