Trends in Higher Education Series

2007

Education Pays

The Benefits of Higher Education for Individuals and Society

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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 interest 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 progress and the persistent disparities in participation in postsecondary education.

The benefits of higher education for individuals and for society as a whole are both monetary and nonmonetary.

Benefits to Individuals

- There is a positive correlation between higher levels of education and higher earnings for all racial/ethnic groups and for both men and women.
- In addition to earning higher wages, college graduates are more likely than others to enjoy employer-provided health insurance and pension benefits.
- The income gap between high school graduates and college graduates has increased significantly over time. The earnings benefit is large enough for the average college graduate to recoup both earnings forgone during the college years and the cost of full tuition and fees in a relatively short period of time.
- The considerable nonmonetary rewards of a college education include better health and greater opportunities for the next generation.
- Any college experience produces a measurable return when compared with none, but the benefits of completing a bachelor's degree or higher are particularly large.

Societal Benefits

- Higher levels of education correspond to lower unemployment and poverty rates. So, in addition to contributing more to tax revenues than others do, adults with higher levels of education are less likely to depend on social safety-net programs, generating decreased demand on public budgets.
- The earnings of workers with lower education levels are positively affected by the presence of college graduates in the workforce.
- College graduates have lower smoking rates, more positive perceptions of personal health, and healthier lifestyles than individuals who did not graduate from college.
- Higher levels of education are correlated with higher levels of civic participation, including volunteer work, voting, and blood donation, as well as with greater levels of openness to the opinions of others.

Given the extent of higher education's benefits to society, gaps in access to college are matters of great significance to the country as a whole. This report shows that despite the progress we have made in improving educational opportunities, participation in higher education differs significantly by family income, parent education level, and other demographic characteristics.

Patterns of Postsecondary Participation

- Among students with top test scores, virtually all students from the top quarter of families in terms of income and parental education enroll in postsecondary education, but about 25 percent of those in the lowest socioeconomic quartile do not continue their education after high school.
- Differences in family background generate smaller differences in postsecondary participation among students with high test scores than among those with lower levels of measured academic achievement.
- Gaps in postsecondary enrollment rates by income and race/ethnicity are persistent. Moreover, black and Hispanic students, as well as low-income students, are less likely than others to complete degrees if they do enroll. Students from rural areas and male students also have relatively lower levels of participation in higher education.
- Gaps between individuals who participate and succeed in higher education and those who don't have a major impact on the next generation. The young children of college graduates display higher levels of school readiness indicators than children of parents who did not graduate from college. For high school graduates from families with similar incomes, students whose parents went to college are significantly more likely to go to college themselves than those whose parents did not go to college.
- International comparisons indicate that the United States ranks higher in overall degree attainment than in degree attainment in science and engineering.

The story told by the indicators in this report is that higher education does pay. It yields a high rate of return for students from all racial/ethnic groups, for men and for women, and for those from all family backgrounds. It also delivers a high rate of return for society. The specific evidence of these benefits included in this report provides the basis for more informed decisions about public and private investments in higher education opportunities.

Foreword

The College Board is pleased to release this new edition of *Education Pays: The Benefits of Higher Education for Individuals and Society*. This edition updates many of the indicators included in our original 2004 publication, as well as in the 2005 and 2006 supplements. We have also added new information about the benefits generated by higher education and differences in educational attainment among various groups within American society. The data in this report are gathered from a variety of sources and presented in a style designed to enhance general understanding of the ways in which increased participation and success in higher education improve the lives of students and the society to which they belong.

The College Board's mission is to connect students to college success and opportunity. Our commitment to excellence and equity in education includes providing reliable and relevant information and policy analysis to the public and to the education community. In the current climate of rising college prices and budget constraints at all levels of government, it is particularly important that the benefits of higher education receive as much attention as the costs. The pages that follow illustrate the role of higher education in creating opportunities for students and in strengthening our country as a whole. They also highlight the gaps between those who are fortunate enough to be full participants in our excellent and diverse system of higher education and those who are not.

This report is an important supplement to our annual publications, *Trends in Student Aid* and *Trends in College Pricing*. We hope that the information provided here will receive as much attention as the information we supply about the price of college and the assistance available to students to pay for their education. Both students themselves and society as a whole make significant investments in higher education. *Education Pays* increases our understanding of the value of that education and our successes and failures in providing access to it.

This report was written by Sandy Baum, senior policy analyst at the College Board and professor of economics at Skidmore College, and Jennifer Ma, consultant to the College Board. Patricia Steele provided invaluable assistance.

Sincerely,

Gaston Caperton
President

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Introduction

This edition of *Education Pays: The Benefits of Higher Education for Individuals and Society* updates and adds to our 2004 publication. In 2004, we designed this report as a companion to our annual releases, *Trends in Student Aid* and *Trends in College Pricing*. Our goal was to expand the conversation about paying for college to include more concrete information about why the major investment in higher education is so important, both for individual students and for the society to which they belong. We also wanted to sharpen the focus on who participates and succeeds in higher education and who is excluded from this opportunity. In 2005 and 2006, we published brief supplements to *Education Pays*. This year, we have updated much of the information that we included in past years and have added some new indicators of both the value of higher education and how that value is distributed. We are releasing this report separately from the *Trends* reports, with the hope that the evidence provided here will help to generate conversations, policy proposals, and further research into the contribution of higher education to the well-being of our society.

People generally think of college education in personal terms. Public opinion polls reveal a widespread understanding of the role of education in opening the door to a middle-class lifestyle. Students invest considerable time and energy, in addition to dollars, into building their futures through education. The prospect of wider opportunities and a higher standard of living leads families to save in advance, sacrifice current consumption opportunities, and go into debt in order to enable their children to continue their education after high school. Yet in recent years, questions about whether the investment is worthwhile have become more common. As the price of a college education continues to rise more rapidly than the prices of other goods and services, more students and families are facing difficult choices about the sacrifices involved.

It is true that after adjusting for inflation, the earnings of male college graduates are no higher than they were in the early 1970s, and the earnings of female college graduates have increased only moderately. However, as this report documents clearly, the earnings gap between high school and college graduates has grown dramatically. The gap between the earnings of high school graduates and the earnings of four-year college graduates has for many years been larger for women than for men. Over time, this gap has continued to grow for men, almost catching up to the gap for women, which has remained close to its current high level for the past decade.

The nonmonetary benefits enjoyed by individuals who participate and succeed in higher education are much more difficult to quantify and document. Although it is not possible for us to focus on all of them in this publication, it is certainly not our intention to diminish these critical outcomes, which include many aspects of personal and intellectual growth and fulfillment.

The broader societal benefits of investment in higher education also are fundamental to the well-being of our nation. State and local governments appropriate billions of dollars each year for public colleges and universities and the federal government provides grants, loans, and work assistance, as well as tax credits and deductions, to help students finance postsecondary education. The specific information contained in this report can increase our understanding of the importance of higher education for both the equity and the efficiency of our society.

In the pages that follow, we describe a variety of differences in the earnings, choices, and behavior patterns that correspond to differences in education levels. Some of the benefits of higher education documented in this report are widely cited; others are less well-known. We have attempted to bring generally 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.

It is frequently difficult to determine precisely how much of the variation observed in the patterns reported here is directly attributable to education and how much is actually the result of other factors. Individual characteristics that influence the probability of enrolling in and graduating from postsecondary institutions may have a direct and systematic influence on other outcomes. For example, it is likely that the skills and motivation required for college success would increase earnings even for those with little formal education. Under these circumstances, if many of the people who now go to college were to stop enrolling, they might earn more than the average high school graduate.

Sophisticated statistical analysis can help to clarify the difference between correlation and causation. We cite this type of evidence when it is available. However, many of the graphs in this report simply compare the patterns evidenced by people with different education levels. In general, while simple descriptions of correlations provide useful clues about causal effects, they do not reliably indicate the size of the effects, and instead are best interpreted as providing broad-gauged evidence of the powerful role that higher education plays in the lives of individuals and in society.

Another caveat necessary to the accurate interpretation of the information provided here is that, as mentioned above, not all of the benefits of higher education can be quantified. The

personal satisfaction and enhanced life experiences generated by higher education are virtually impossible to measure. Moreover, the actual benefits of many of the outcomes we describe here, such as increased civic participation, cannot realistically be translated into terms that allow them to be compared to the costs of the investment. Our intent is not to minimize the importance of the less tangible or quantifiable outcomes of education. Rather, we hope that a more thorough and coherent view of the benefits on which we focus will highlight the significance of our society's investment in higher education and provide some grounding for public policy deliberations.

As was the case in 2004, the story told by the indicators in this report is that education does pay. It has a high rate of return for students from all racial/ethnic groups, for men and for women, and for those from all family backgrounds. It also has a high rate of return for society. We all benefit from the higher tax revenues, the greater productivity, the lower demands on social support programs, and the greater levels of civic participation of college-educated adults.

Once these individual and societal benefits of higher education are clear, it becomes critical to increase our understanding of the gaps we still face in patterns of participation in postsecondary education. College enrollment rates have increased significantly over the past three to four decades, both overall and for all demographic groups. However, this good news is dampened by the persistent gaps in participation in postsecondary education among people from different backgrounds. People from low-income families and those whose parents did not attend college, as well as blacks and Hispanics, are much less likely than more affluent people, those whose parents have college degrees, and whites and Asians to enroll in college and to earn degrees. Enrollment rates of recent high school graduates were higher in 2005 than they had been a decade earlier at all income levels except the most affluent 20 percent of the population, and the growth has been most rapid for students from the lowest income families. But the progress has not been consistent, and over the second half of the decade, increased participation has been almost exclusively in the upper half of the income distribution.

Many factors contribute to the variation in postsecondary participation rates. Financial constraints, wide disparities in elementary and secondary educational opportunities, academic preparation, aspirations, and expectations all play a role in the differentials documented here. There is no attempt in the discussion that follows to sort out the relative weights of these different factors. The evidence does, however, clearly indicate that financial constraints create barriers. There are significant differences by family income level in college enrollment rates among high school graduates with very high test scores, and among those whose parents have similar education levels. A strong academic background is not always sufficient to allow students to overcome financial barriers. It does, however, significantly improve postsecondary opportunities. Within income groups, students with high achievement levels are significantly more likely to go to college than others, as are those whose parents have high levels of education.

Our intent is not to analyze the causes or to propose solutions for the gaps in postsecondary participation we document, but to highlight the missed opportunities for individuals and for society. If all demographic groups attained education levels similar to those who are most successful by this measure, more individuals would enjoy the benefits described in this report. Moreover, society would function more efficiently, and enjoy a variety of shared benefits.

The significant costs of the public and private investments in higher education are very visible. It is important that both the successes and the shortfalls of these investments be equally visible.

Part 1

Individual and Societal Benefits of Higher Education

Individual students and their families reap much of the benefit of higher education. For members of all demographic groups, average earnings increase measurably with higher levels of education. During their working lives, typical college graduates earn over 60 percent 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; college graduates are more likely than other employees to enjoy employer-provided health and pension benefits. More-educated people are less likely to be unemployed and less likely to live in poverty. These economic returns make financing a college education a good investment. Although incurring debt should always be approached with caution, even students who borrow a sizable share of the funds required to pay for college are likely to be financially better off relatively soon after graduation than they would be if they began their full-time work lives immediately after high school.

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. Consistent productive employment reduces dependence on public income-transfer programs and all workers, regardless of education level, earn more when there are more college graduates in the labor force.

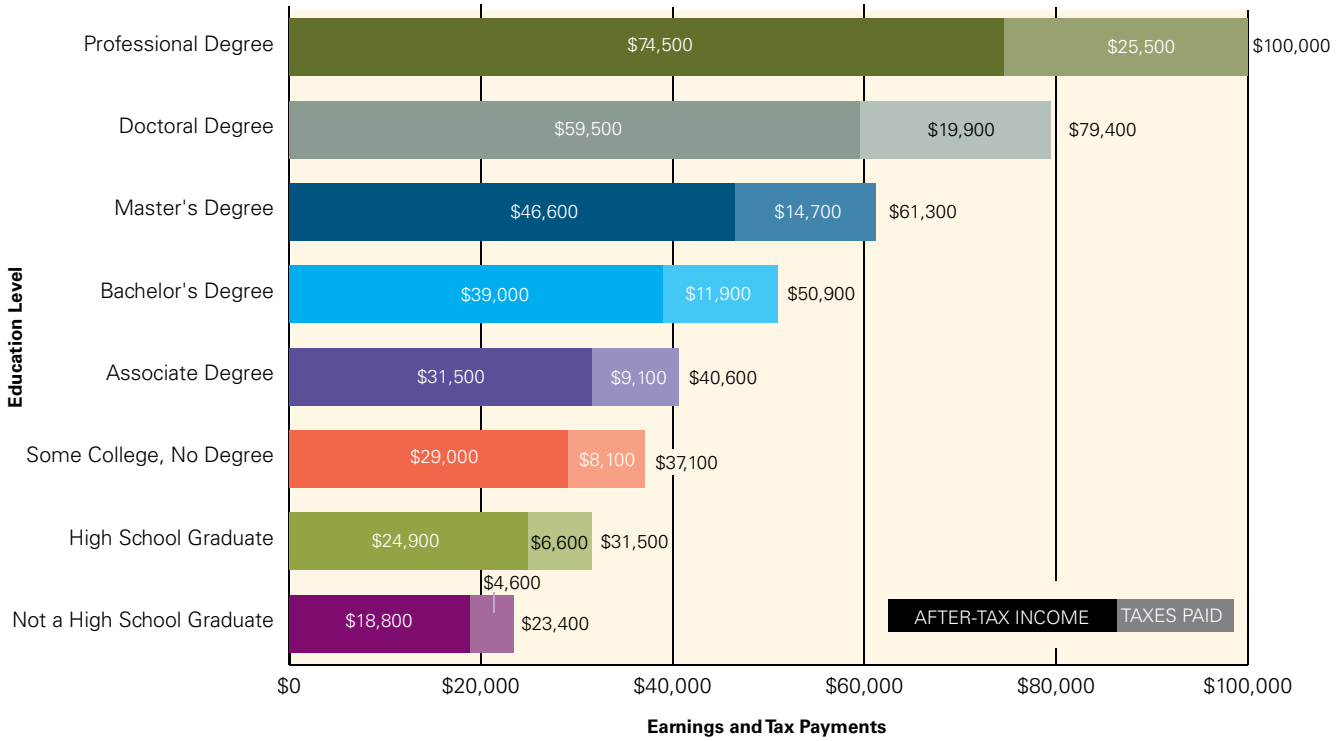
Because the individual outcomes affect the well-being of others, it is not possible to neatly separate the benefits to individuals from those shared by society as a whole. For example, just as all workers benefit from the increased productivity of their coworkers, unemployment can result in a loss to the entire economy.

Beyond the economic return to individuals and to society as a whole, higher education improves quality of life in a variety of other ways, only some of which can be easily quantified. The economic advantages already mentioned have broader implications. For example, reduced poverty increases material standards of living and improves the overall well-being of the population; the psychological implications of unemployment are also significant. In addition to their nonmonetary benefits, poverty and unemployment affect spending on public assistance programs. Moreover, adults with higher levels of education are more likely to engage in organized volunteer work, to vote, and to donate blood; they are also more likely to live healthy lifestyles. College-educated adults are more likely than others to be open to differing views of others, and the young children of adults with higher levels of education have higher cognitive skills and engage in more extracurricular, cultural, athletic, and religious 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

Figure 1.1: Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2005



Note: Taxes paid include federal income, Social Security, and Medicare taxes, and state and local income, sales, and property taxes.
Sources: U.S. Census Bureau, 2006, PINC-03; Internal Revenue Service, 2006; McIntyre et al., 2003; calculations by the authors.

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

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

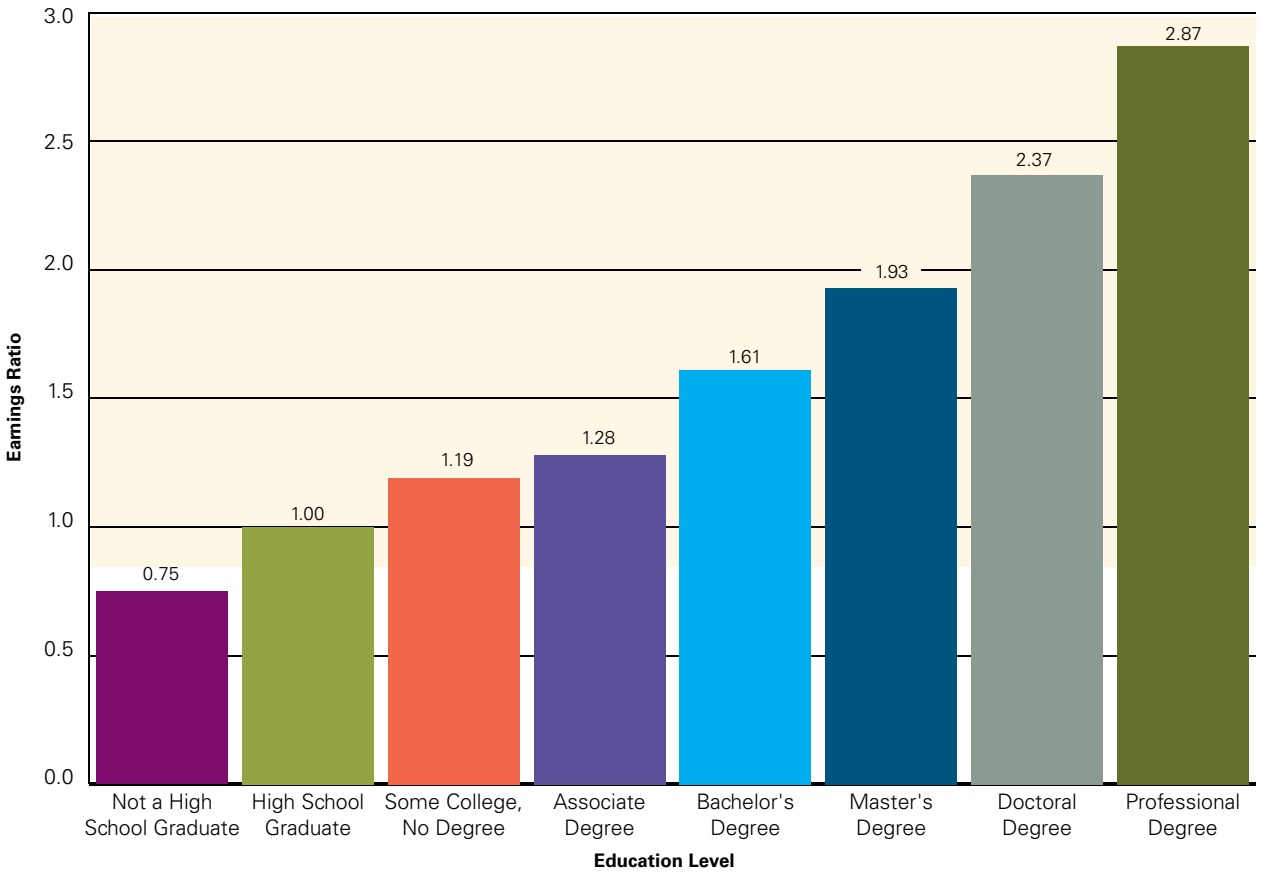
- In 2005, the typical full-time year-round worker in the United States with a four-year college degree earned $50,900, 62 percent more than the $31,500 earned by the typical full-time year-round worker with only a high school diploma.
- Those with master's degrees earned almost twice as much, and those with professional degrees earned over three times as much per year as high school graduates.
- Median earnings for those with some college but no degree were 18 percent higher than those for high school graduates, and adults with associate degrees earned 29 percent more than high school graduates.
- The typical college graduate working full-time year-round paid 134 percent more in federal income taxes and almost 80 percent more in total federal, state, and local taxes than the typical high school graduate.
- Those who hold professional degrees paid almost $19,000 more in total taxes in 2005 than high school graduates.

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).

Lifetime Earnings

Figure 1.2: Expected Lifetime Earnings Relative to High School Graduates, by Education Level



Notes: Based on the sum of median 2005 earnings from ages 25 to 64 for each education level. Future earnings are discounted using a 3 percent annual rate to account for the reality that, because of foregone interest, dollars received in the future are not worth as much as those received today.
Sources: U.S. Census Bureau, 2006, PINC-03; calculations by the authors.

The typical bachelor's degree recipient can expect to earn about 61 percent more over a 40-year working life than the typical high school graduate earns over the same period.

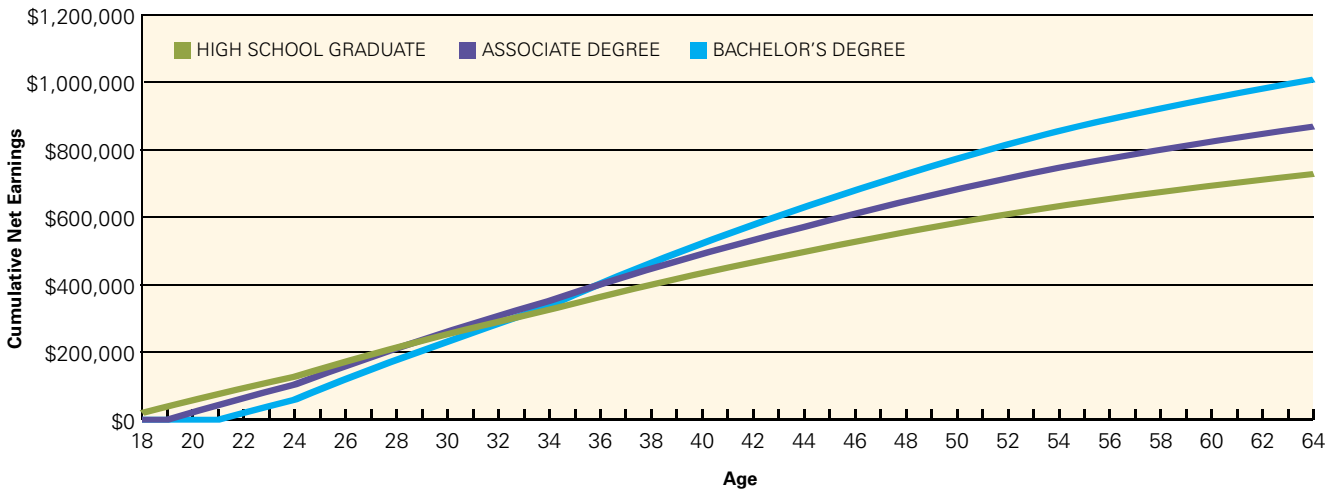
- Median lifetime earnings for individuals with some college but no degree are 19 percent higher than median lifetime earnings for high school graduates with no college experience.
- Median lifetime earnings for individuals with associate degrees are 28 percent higher than median lifetime earnings for high school graduates.
- Median lifetime earnings for doctoral degree recipients are between two and two and a half times as high as median lifetime earnings for high school graduates, and median lifetime earnings for professional degree recipients are even higher.

Also important:

- The typical expected earnings over the working lives of four-year college graduates add up to $800,000 more than the expected earnings of high school graduates. If college graduates who also earn higher degrees are included, the lifetime earnings premium is over $1,000,000.
- Accounting for the fact that some of the higher earnings are many years in the future, the increased earning power of a college education is worth about $450,000 in today's dollars. If college graduates who also earn higher degrees are included, the lifetime earnings premium is over $570,000.

Earnings Premium Relative to Price of Education

Figure 1.3: Estimated Cumulative Earnings Net of Loan Repayment for Tuition and Fees, by Education Level



Notes: Based on median 2005 earnings for each education level at each age and discounted using a 3 percent annual rate. Earnings for bachelor's degree recipients include only those with no advanced degree. Assumes tuition and fees are financed with borrowing, and loan payments are made for 10 years after graduation.

Sources: U.S. Census Bureau, 2006, PINC-03, PINC-04; The College Board, 2005; calculations by the authors.

The green line shows the cumulative earnings at each age for the typical high school graduate who enters the workforce full-time at age 18.

The blue line shows the cumulative earnings at each age for the typical college graduate who enters the workforce at age 22, after spending four years out of the labor force and having borrowed to pay the full tuition and fees at the average public four-year college or university. Loan payments on this debt are subtracted from earnings for the first 10 years after graduation, covering both the principal and 6.8 percent interest charges incurred both during and after college.

The purple line shows the same calculation for a student who borrows to cover average tuition and fees at a public two-year college and enters the workforce at age 20.

In all cases, dollar amounts beyond age 18 are discounted by an annual rate of 3 percent to account for the reality that dollars received in the future are not worth as much as those received today, which can begin immediately to earn interest.

By age 33, the typical college graduate who enrolled at age 18 has earned enough to compensate for borrowing to pay the full tuition and fees at the average public four-year institution, including interest on student loans to cover those charges, and earnings forgone during the college years.

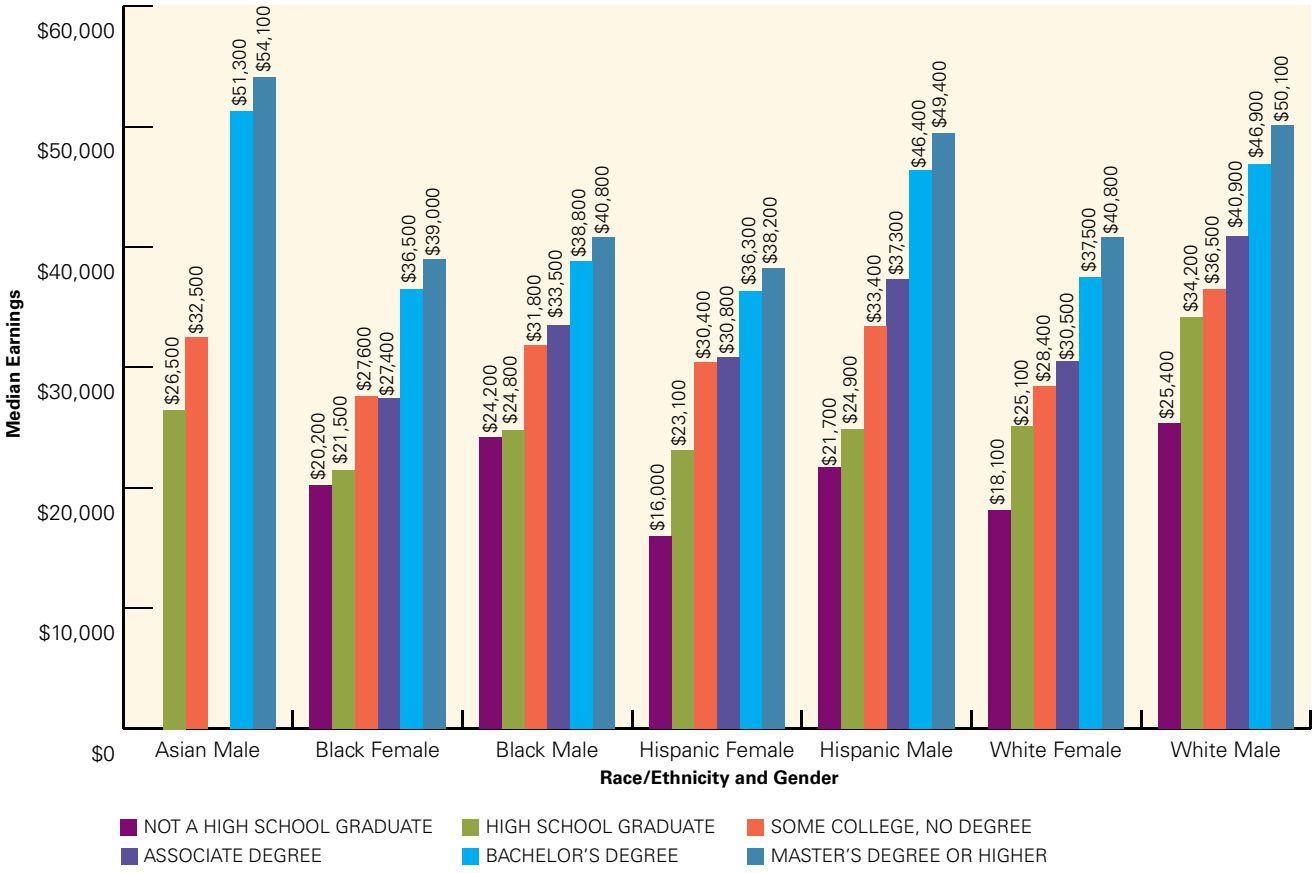
- For the typical student who borrows to cover tuition and fees and earns an associate degree two years after high school graduation, total earnings net of educational expenditures exceed the total earnings of high school graduates by age 29, after nine years of full-time work.
- The earnings of typical four-year college graduates exceed those of typical two-year college graduates, causing the investment in the extra two years of education to be recouped by age 36, after 14 years of earnings.
- The longer college graduates remain in the workforce, the greater the payoff to their investment in higher education.

Also important:

- If the calculation of the value of cumulative net earnings is based on average tuition and fees at a private four-year college, the earnings of college graduates without advanced degrees exceed the median earnings of high school graduates at age 40.
- If the calculation of the value of cumulative earnings is based on a simple sum of median annual earnings without taking into account the lesser value of earnings in the future, the net total earnings of the public two-year college graduate surpass those of the high school graduate at age 28 instead of 29, and the net total earnings of the public four-year college graduate surpass those of the high school graduate at age 31 instead of 33.
- According to the U.S. Census data, the average 2005 earnings for four-year college graduates between ages 25 and 34 with no advanced degree were $19,200 higher than the average earnings of high school graduates in the same age group. This earnings difference is three and a half times the annual tuition and fees at public four-year colleges in 2005-06.

Earnings by Education Level, Race/Ethnicity, and Gender

Figure 1.4: Median Earnings of Full-Time Year-Round Workers Ages 25–34, by Race/Ethnicity, Gender, and Education Level, 2005



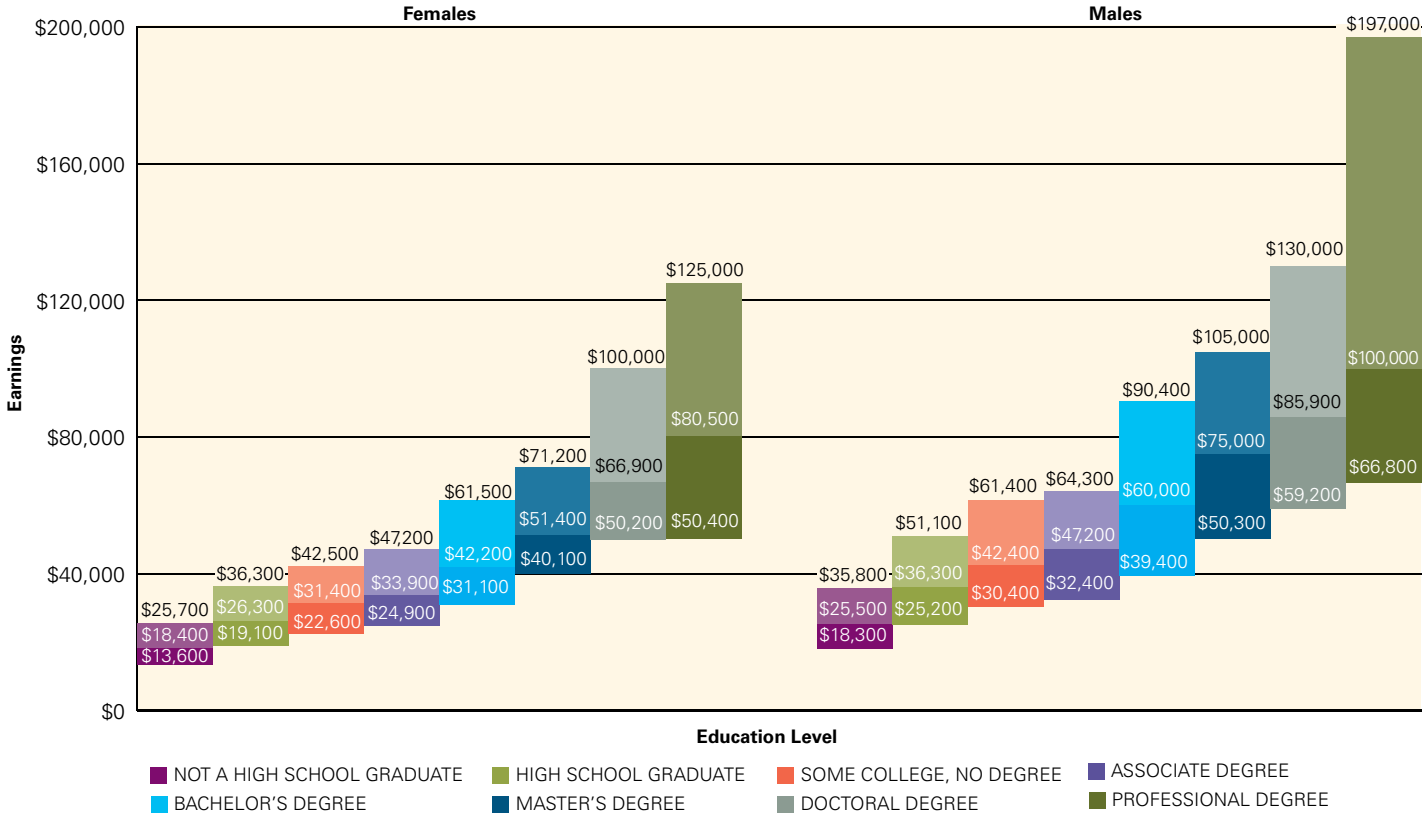
Note: Sample sizes for Asian females as well as Asian males with less than a high school diploma and associate degrees are too small to allow reliable reporting.
Source: U.S. Census Bureau, 2006, PINC-03.

Among 25- to 34-year-olds, the earnings premium for four-year college graduates is highest for Asian and Hispanic males. The premium is higher for black women than for women of other racial/ethnic groups.

- In 2005, median earnings for Hispanic male bachelor's degree recipients between ages 25 and 34 were 86 percent higher than median earnings for Hispanic male high school graduates. For Asian men, the premium was 94 percent. It was 56 percent for black men and 37 percent for white men.
- Median earnings for black female bachelor's degree recipients between ages 25 and 34 were 70 percent higher than median earnings for black female high school graduates. For Hispanic women, the earnings premium was 57 percent, and for white women it was 49 percent.
- The earnings premium for four-year college degree recipients was higher for white and black women than for men, but among Hispanics, the earnings premium was larger for males.
- Within racial/ethnic groups between ages 25 and 34, the largest gaps between median earnings for full-time male workers and full-time female workers were for whites who had not completed a four-year degree.
- The smallest gender-based earnings gap was for black college graduates, with male bachelor's degree recipients earning only 6 percent more than female bachelor's degree recipients.

Earnings by Education Level and Gender

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, 2005



Sources: U.S. Census Bureau, 2006, PINC-03; calculations by the authors.

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 percent of the people in the group earn less than this amount. The line across the bar shows median earnings for the group. The top of the bar shows the 75th percentile; 25 percent of the people in the group earn more than this amount.

For both men and women, higher levels of education correspond to higher incomes, but men earn significantly more than women with similar education levels, and among both men and women, there is a wide range of earnings among individuals with similar degrees.

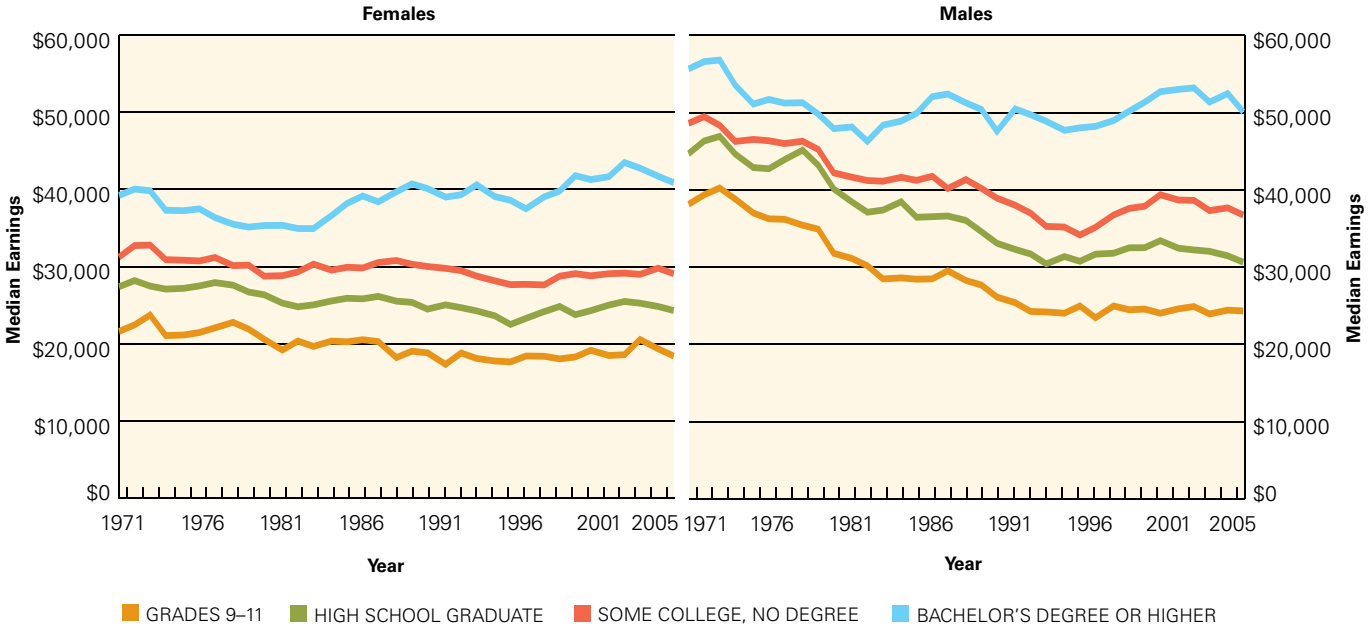
- Among male high school graduates, a quarter earned less than $25,200 and a quarter earned more than $51,100 in 2005. For male four-year college graduates, the range of earnings for the middle 50 percent was from $39,400 to $90,400.
- Among female high school graduates, a quarter earned less than $19,100 and a quarter earned more than $36,300 in 2005. The range of earnings for the middle 50 percent of female college graduates was from $31,100 to $61,500. These ranges were smaller, both proportionately and in dollars, than the ranges for male earnings.
- Median earnings for male bachelor's degree recipients were 65 percent higher than the median for high school graduates. For women, there was a 60 percent premium for a four-year college degree.
- Median earnings for female bachelor's degree recipients were slightly lower than median earnings for males with some college but no degree.

Also important:

The differences in earnings between men and women are explained by a variety of factors, including occupational differences and differences in the age distribution of those with higher degrees, in addition to labor market discrimination.

Earnings Over Time by Education Level and Gender

Figure 1.6: Median Earnings of Full-Time Year-Round Workers Ages 25–34, by Gender and Education Level, 1971–2005 (in Constant 2005 Dollars)



Sources: National Center for Education Statistics (NCES), 2007, Indicator 20 (based on U.S. Census Bureau, *Current Population Survey*); calculations by the authors.

Earnings differentials by level of education have increased significantly over the past 35 years. Over the past decade, the earnings premium for a college education has increased for men and has remained relatively steady for women.

- Female college graduates are the only group between ages 25 and 34 for whom median earnings have kept up with inflation between 1971 and 2005. Between 1995 and 2005, all groups except men with no more than a high school education have seen earnings increase beyond inflation.
- In 2005, median earnings for both men and women ages 25–34 with some college but no four-year degree were 20 percent higher than median earnings for high school graduates. For men, this earnings premium was at its highest level since 1971, but had been steady since 2002. For women, the earnings premium has fluctuated around this level since the early 1980s.
- Median earnings for men ages 25–34 with a bachelor's degree or higher were 64 percent higher in 2005 than median earnings for male high school graduates. The earnings premium has risen from 19 percent in 1975, 37 percent in 1985, and 56 percent in 1995.
- Median earnings for women ages 25–34 with a bachelor's degree or higher were 68 percent higher in 2005 than median earnings for female high school graduates. The earnings premium rose from 37 percent in 1975 to 47 percent in 1985, and to 71 percent in 1995.

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 families in the lowest 20 percent of the income distribution fell from 5.5 percent in 1971 to 4.6 percent in 1990 and to 4.0 percent in 2004; the share of total income received by families in the highest 20 percent of the income distribution rose from 41.1 percent in 1971 to 44.3 percent in 1990 and to 47.9 percent in 2004 (U.S. Census Bureau, 2007, Table 678).

Pension Plans

Figure 1.7a: Percentage of Full-Time Year-Round Workers Ages 25 and Older Who Were Offered Employer-Provided Pension Plans, by Education Level, 2005

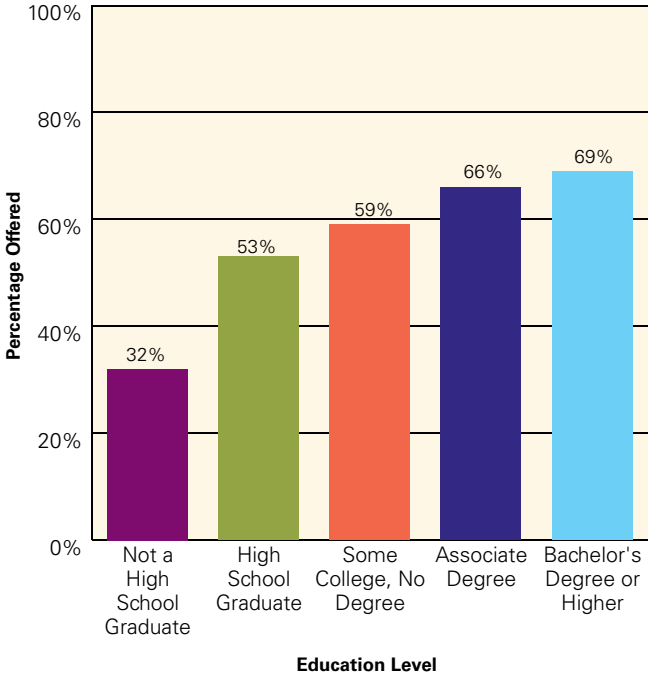
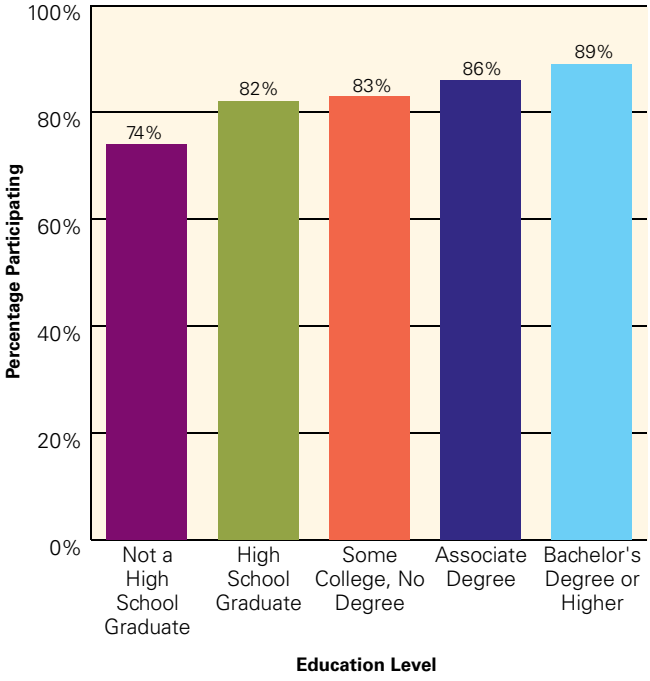


Figure 1.7b: Percentage of Eligible Full-Time Year-Round Workers Ages 25 and Older Who Participated in Employer-Provided Pension Plans, by Education Level, 2005



Sources: U.S. Census Bureau, *Current Population Survey, 2006 Annual Social and Economic Supplement*; calculations by the authors.

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.

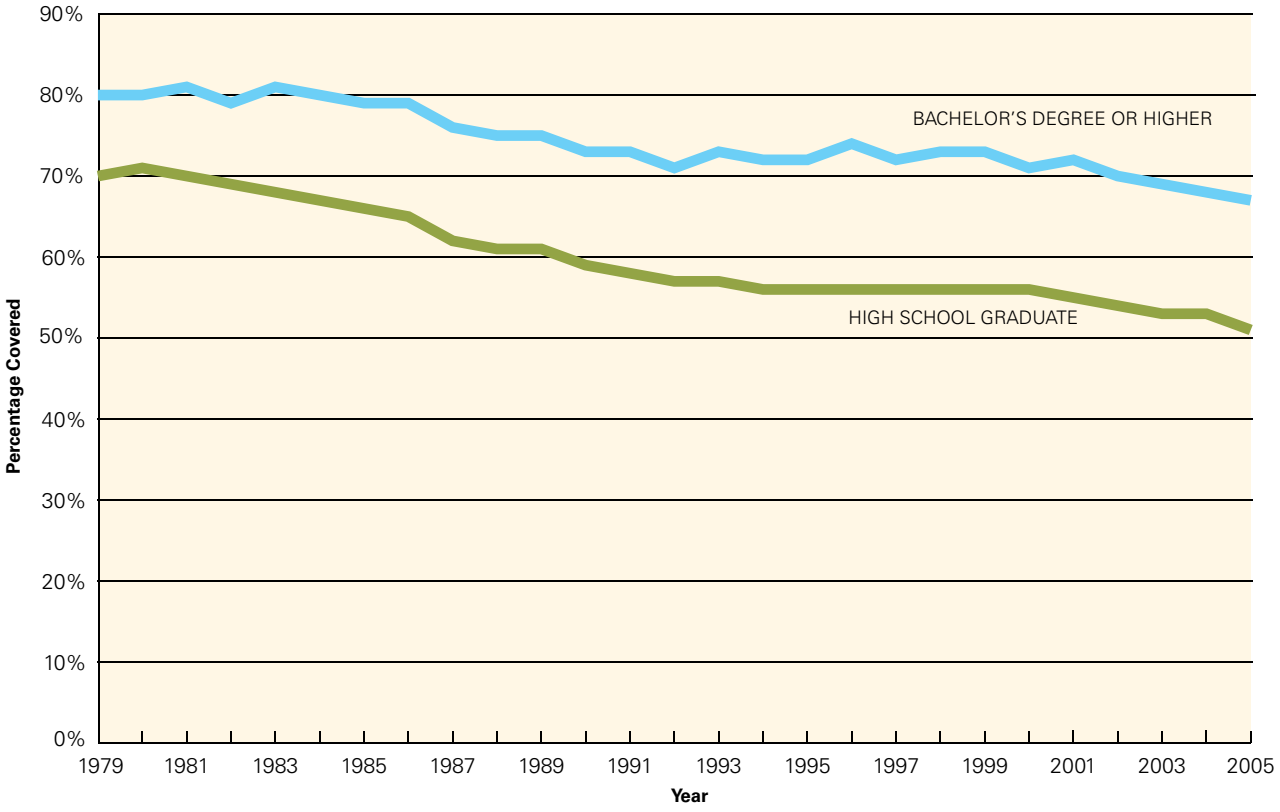
- Among full-time year-round workers ages 25 and older, 69 percent of four-year college graduates were offered pension plans by their employers in 2005. Employer-provided pension plans were available to 66 percent of associate degree recipients, 59 percent of workers with some college but no degree, 53 percent of high school graduates, and only 32 percent of those who did not complete high school.
- Among full-time workers whose employers offered them pension plans, 89 percent of four-year college graduates chose to participate. Participation rates were 86 percent for associate degree recipients, 83 percent for workers with some college but no degree, 82 percent for high school graduates, and 74 percent for those who did not complete high school.

Also important:

- In recent years, many defined-benefit pension plans, which provide a predetermined income level each year after retirement, have been replaced by defined-contribution plans, in which the payout depends on the amount accumulated in a personal account. The proportion of pension plan participants in defined-contribution plans increased from 50 to 61 percent between 1990 and 2001 (U.S. Census Bureau, 2007, Table 538).
- The proportion of private-sector workers working at least half-time who were covered by employer pension plans declined from 50 percent in 1980 to 43 percent in 1987. After rising to 51 percent in 1998, coverage had declined to 46 percent by 2004 (Mishel et al., 2007, Table 3.15).
- 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.

Health Insurance

Figure 1.8: Percentage of Private-Sector Workers Ages 18–64 Working at Least Half-Time Covered by Employer-Provided Health Insurance, by Education Level, 1979–2005



Source: Mishel et al., 2007, Table 3.12.

The proportion of workers whose employers provide health insurance and pay at least part of the premium has declined more rapidly for high school graduates than for four-year college graduates.

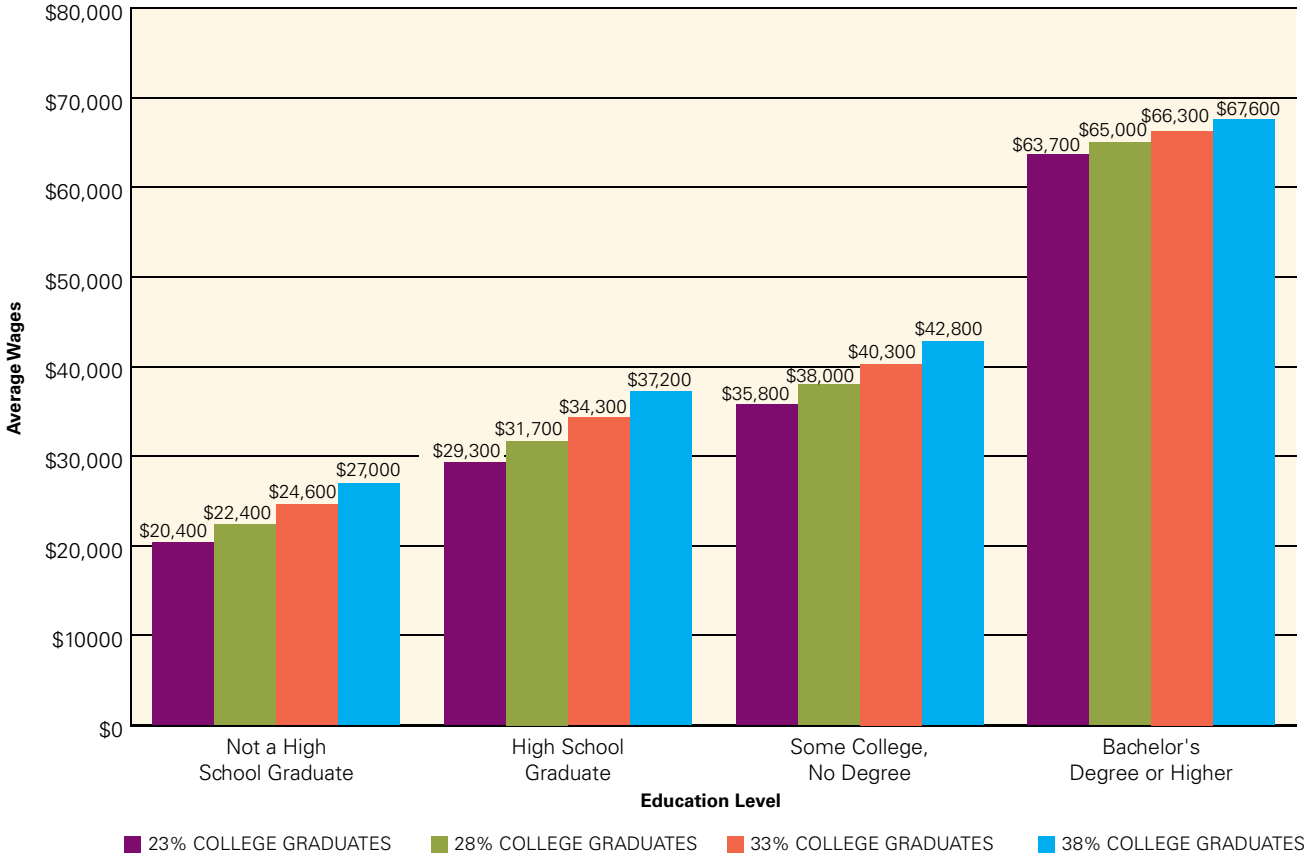
- In 1980, 71 percent of high school graduates working in the private sector at least 20 hours a week and 26 weeks per year were covered by employer-provided health insurance. Receipt of this benefit declined to 59 percent in 1990, to 56 percent in 2000, and to 51 percent in 2005.
- In 1980, 80 percent of four-year college graduates working in the private sector at least 20 hours a week and 26 weeks per year were covered by employer-provided health insurance. Receipt of this benefit declined to 73 percent in 1990, to 71 percent in 2000, and to 67 percent in 2005.
- The proportion of college graduates receiving health insurance was 9 percentage points higher than the percentage of high school graduates receiving these benefits in 1980. By 2005, that gap had widened to 16 percentage points.
- The proportion of college graduates receiving health insurance from their employers in 2005 was lower than the proportion of high school graduates receiving this benefit in 1980.

Also important:

- Federal, state, and local governments spent about $35 billion on payments for health care for the uninsured in 2004 (Hadley and Holahan, 2004).
- According to estimates from Families USA, premiums for families who have health insurance through their private employers are more than $900 per year more expensive because of unreimbursed costs for the uninsured (Families USA, 2005).
- Full-time workers are more likely than part-time workers to receive health and pension benefits.

Economic Benefits to Others

Figure 1.9: The Impact of Increases in the Proportion of College Graduates in the Workforce on Wages of All Workers, by Education Level



Sources: Moretti, 2004; calculations by the authors.

The green bars represent the actual circumstances in 2005 when 28 percent of the adult population held bachelor's degrees. Bars for 23 percent, 33 percent, and 38 percent college graduates illustrate hypothetical average wages that would prevail with those proportions of college graduates if wages in the United States changed in the pattern estimated by Moretti (2004) for metropolitan areas.

Workers with lower education levels earn more if others in the same metropolitan area are more educated.

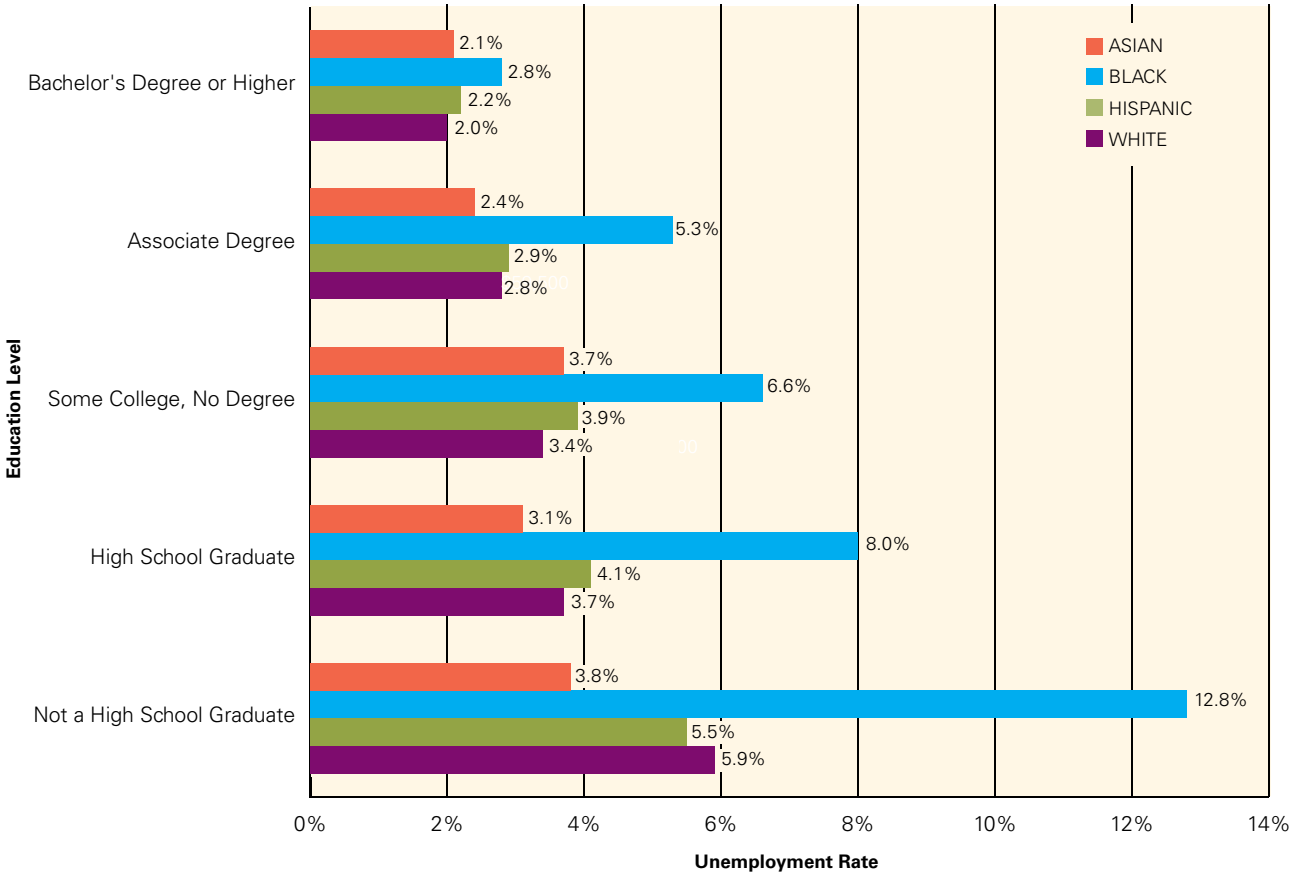
- Estimates suggest that controlling for other factors, a 1 percentage point increase in the proportion of the population holding a four-year college degree leads to a 1.9 percent increase in the wages of workers without a high school diploma and a 1.6 percent increase in the wages of high school graduates.
- A 1 percentage point increase in the proportion of the population holding a four-year college degree leads to an increase of about 1.2 percent in the wages of workers with some college and an increase of 0.6 percent in the wages of college graduates.

Also important:

The findings reported on this page are from economist Enrico Moretti's study of the spillover effects of college education. Controlling for the relevant characteristics of both individuals and cities, he estimates the increase in wages resulting from increased educational attainment in the workforce.

Unemployment

Figure 1.10: Unemployment Rates of Individuals Ages 25 and Older, by Race/Ethnicity and Education Level, 2006



Source: Bureau of Labor Statistics, 2007, Table 7 (based on U.S. Census Bureau, *Current Population Survey*).

Among all racial/ethnic groups, unemployment rates are much lower for college graduates than for high school graduates. The differences are significantly larger for blacks than for other groups.

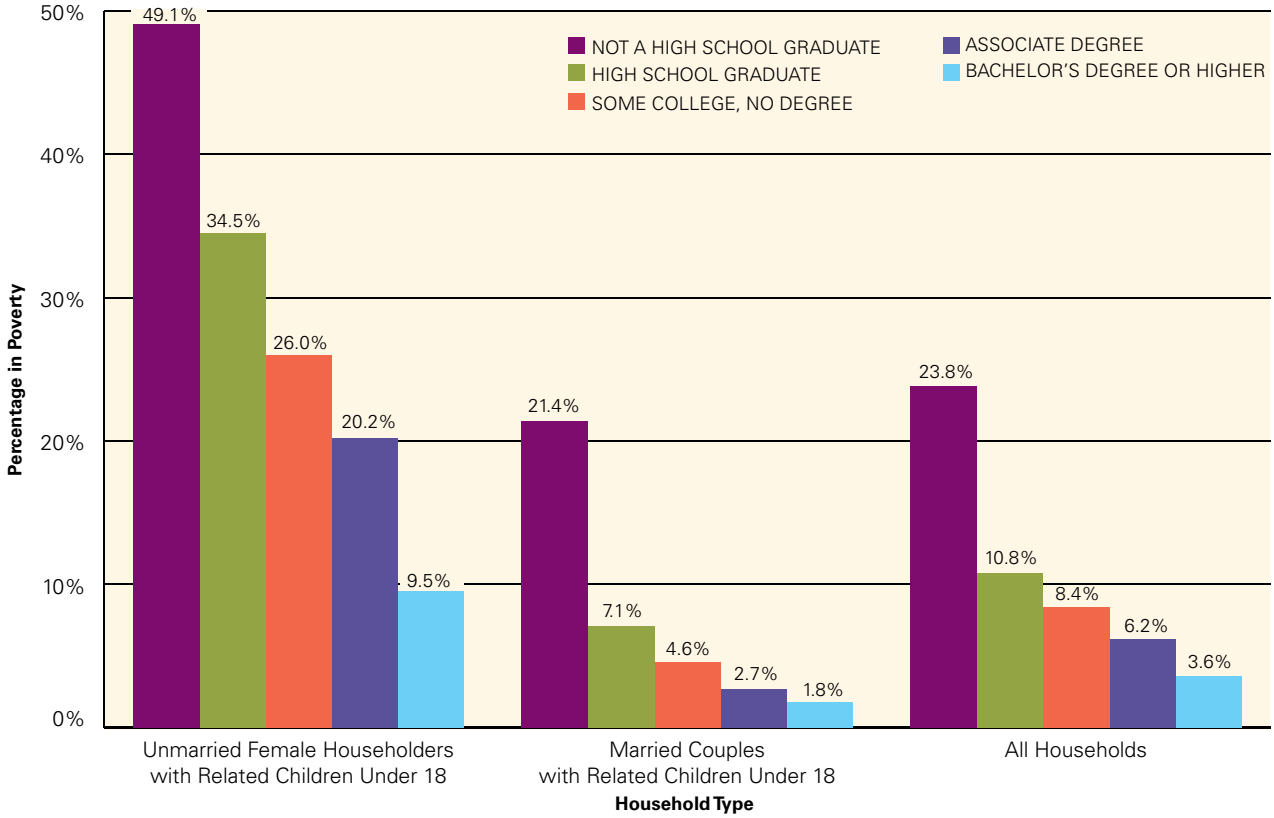
- In 2006, the 2.8 percent unemployment rate for black four-year college graduates was about one-third of the 8.0 percent unemployment rate for black high school graduates.
- The weakest relationship between education level and unemployment rate was for Asians, among whom the 2.1 percent unemployment rate for individuals with a bachelor's degree or higher was two-thirds of the 3.1 percent unemployment rate for high school graduates.
- The gap between unemployment rates for blacks and whites is considerably smaller for college graduates than for other groups. The 2006 unemployment rate for black high school graduates was 2.2 times as high as that for white high school graduates. The unemployment rate for blacks with some college or an associate degree was 1.9 times as high as that for whites with similar levels of education, and the unemployment rate for black four-year college graduates was only 1.4 times as high as that for white four-year college graduates.
- The unemployment rate for blacks with a four-year college degree was higher than that for Asians with an associate degree, and as high as that for whites with an associate degree. The unemployment rate for blacks with some college but no degree was higher than the unemployment rates for Asians, Hispanics, and whites who did not complete high school.

Also important:

In addition to the obvious problems for the individuals and families directly affected, unemployment carries significant costs for society as a whole. Fewer goods and services are produced, tax revenues decline, access to health care is diminished, children enjoy fewer opportunities, and more people are in need of taxpayer support.

Poverty

Figure 1.11: Percentage of Individuals Ages 25 and Older Living in Households in Poverty, by Household Type and Education Level, 2005



Sources: U.S. Census Bureau, *Current Population Survey, 2006 Annual Social and Economic Supplement*; calculations by the authors.

The 3.6 percent poverty rate in 2005 for bachelor's degree recipients was about one-third of the 10.8 percent poverty rate for high school graduates.

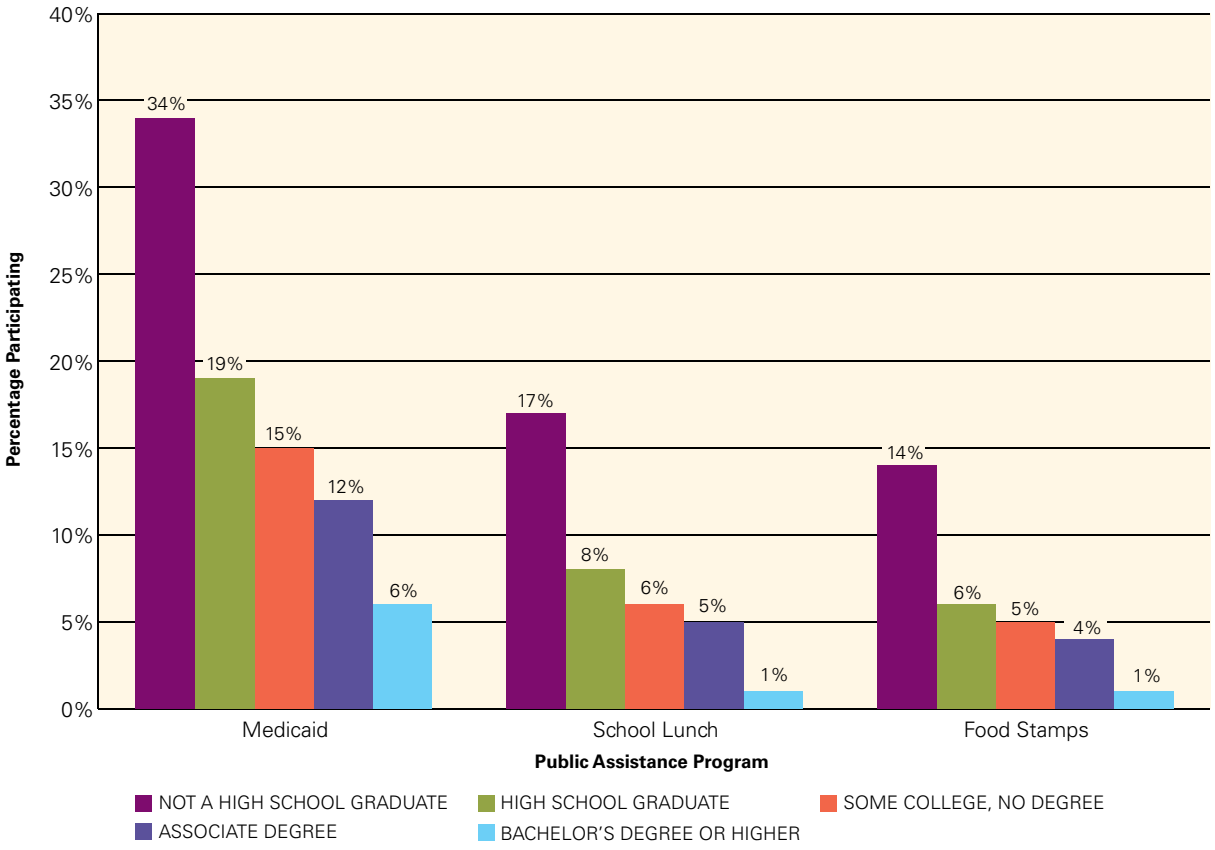
- Individuals living in households headed by unmarried females with children under age 18 have particularly high poverty rates. The 9.5 percent poverty rate for bachelor's degree recipients living in families headed by unmarried females in 2005 was about a quarter of the 34.5 percent poverty rate for high school graduates living in similar families.
- In 2005, the difference between the poverty rates of high school graduates and those with some college experience or associate degrees was largest for married couples with children under age 18. Among this group, 7.1 percent of high school graduates, 4.6 percent of those with some college experience but no degree, 2.7 percent of those with associate degrees, and 1.8 percent of bachelor's degree recipients lived in families below the poverty line.

Also important:

- The official poverty threshold in 2005 was $19,806 for a family of four with two children under age 18, and $15,735 for a family of three with two children under age 18 (U.S. Census Bureau, 2005).
- In 2005, households headed by unmarried females constituted 24 percent of U.S. families with children under age 18 and 60 percent of families living below the poverty line (U.S. Census Bureau, 2006, POV 07).
- In 2005, married couple households constituted 69 percent of U.S. families with children under age 18 and 31 percent of families living below the poverty line (U.S. Census Bureau, 2006, POV 07).

Public Assistance Programs

Figure 1.12: Percentage of Individuals Ages 25 and Older Living in Households That Participated in Public Assistance Programs, by Education Level, 2005



Sources: U.S. Census Bureau, *Current Population Survey, 2006 Annual Social and Economic Supplement*; calculations by the authors.

Individuals with higher levels of education are less likely than others to live in households that participate in social support programs.

- In 2005, 19 percent of high school graduates, 15 percent of those with some college but no degree, 12 percent of those with an associate degree, and 6 percent of bachelor's degree recipients lived in households that participated in Medicaid.
- Eight percent of high school graduates, 6 percent of those with some college but no degree, 5 percent of those with an associate degree, and only 1 percent of bachelor's degree recipients lived in households that participated in the National School Lunch Program (a federally assisted meal program that provides free or reduced-price lunches to eligible school children).
- Six percent of high school graduates, 5 percent of those with some college but no degree, 4 percent of those with an associate degree, and only 1 percent of bachelor's degree recipients lived in households that received food stamps.

Also important:

In 2005, the average annual food stamp benefits were $1,112 per recipient and the nonadministrative cost of the school lunch program was $238 per student (U.S. Census Bureau, 2007, Table 556). Medicaid expenditures per recipient averaged $4,487 in 2003 (U.S. Census Bureau, 2007, Table 138).

Perceptions of Health

Figure 1.13a: Percentage of Individuals Ages 25 and Older Reporting Excellent or Very Good Health, by Income and Education Level, 2005

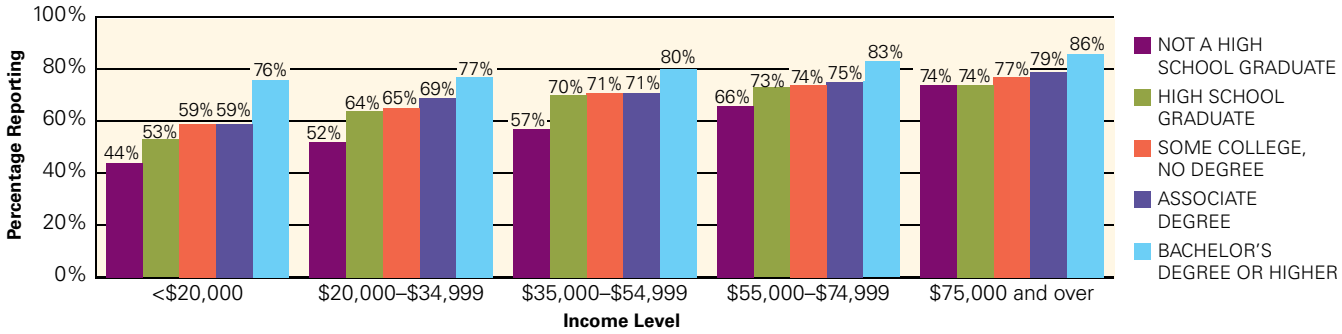
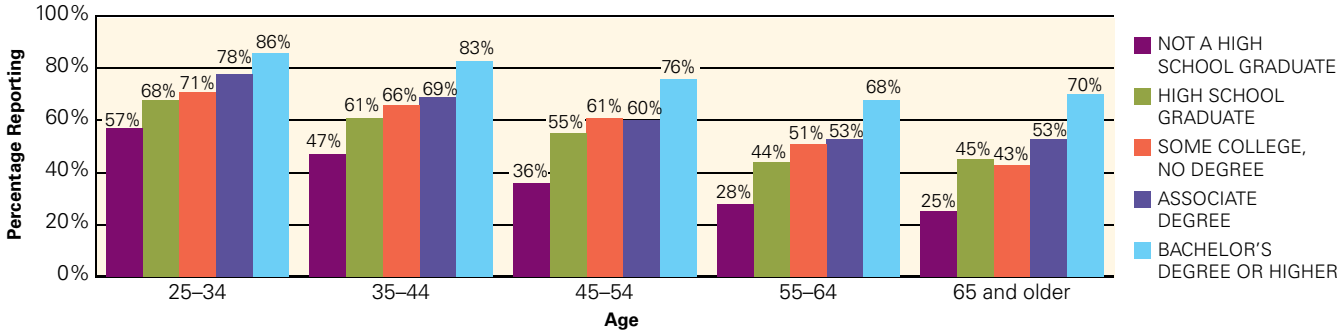


Figure 1.13b: Percentage of Individuals Ages 25 and Older Reporting Excellent or Very Good Health, by Age and Education Level, 2005



Sources: National Center for Health Statistics (NCHS), *2005 National Health Interview Survey*; calculations by the authors.

At every age and income level, higher levels of education are correlated with better health.

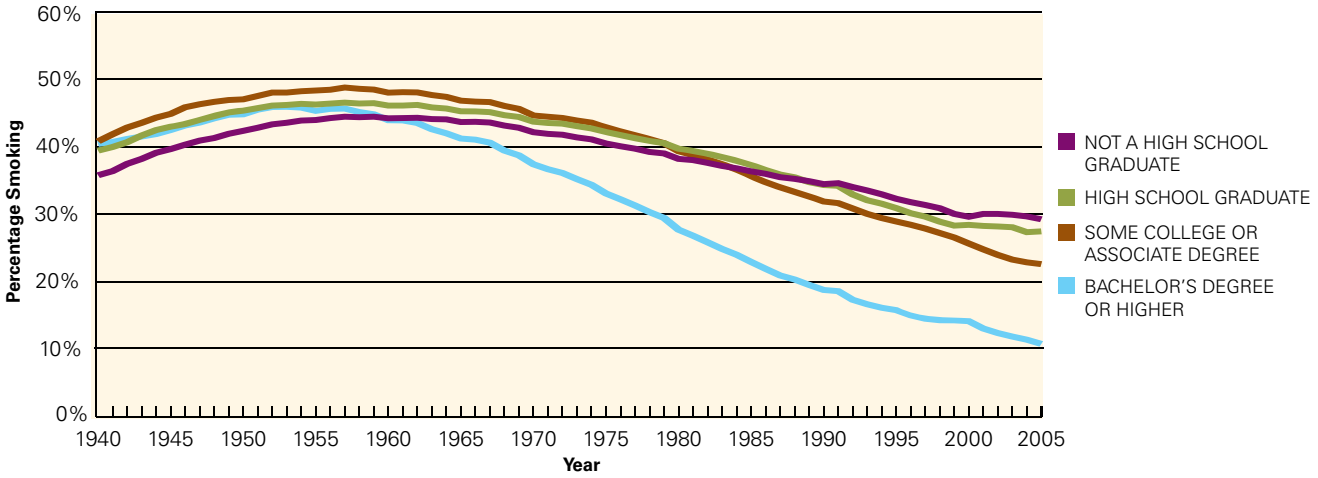
- Within every income group, the percentage of adults perceiving themselves as very healthy increases with higher levels of education. For example, 83 percent of four-year college graduates with incomes between $55,000 and $74,999 in 2005 reported being in excellent or very good health, compared to 75 percent of associate degree recipients, 74 percent of those with some college but no degree, 73 percent of high school graduates, and 66 percent of those who did not complete high school.
- Differences in perceived health status by education level are largest among individuals with the lowest incomes.
- Within every age group, the percentage of adults perceiving themselves as very healthy increases with higher levels of education. For example, 68 percent of four-year college graduates between ages 55 and 64 reported being in excellent or very good health in 2005, compared to 53 percent of associate degree recipients, 51 percent of those with some college but no degree, 44 percent of high school graduates, and 28 percent of those who did not complete high school.
- Low-income bachelor's degree recipients were more likely than high school graduates at any income level to report excellent or very good health.
- Differences in perceived health status by education level were smallest among younger adults.
- Bachelor's degree recipients ages 65 and older were more likely than high school graduates at any age to report excellent or very good health.

Also important:

Some of the better health of college graduates within income groups may be related to the fact that they tend to reach higher incomes at a younger age than high school graduates, and some of the better health of college graduates within age groups may be related to the fact that they tend to have higher incomes than high school graduates of the same age.

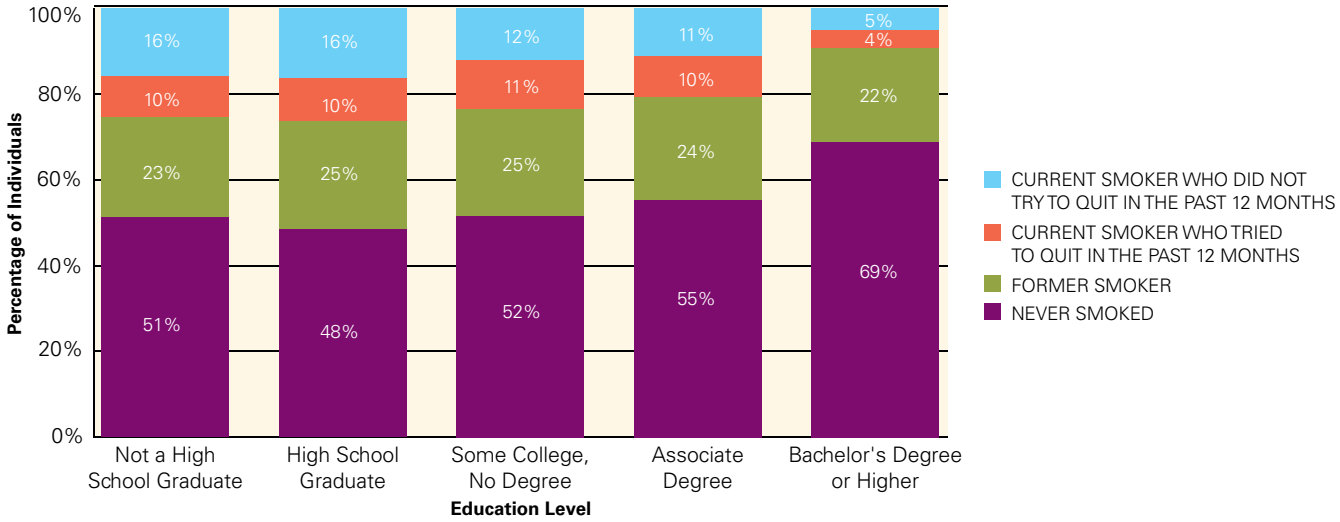
Smoking

Figure 1.14a: Smoking Rates of Individuals Ages 25 and Older, by Education Level, 1940–2005



Note: Data for 2001-05 are three-year moving averages (i.e., the average of the current year and the two previous years).
Sources: De Walque, 2004; NCHS, *National Health Interview Survey*, various years.

Figure 1.14b: Distribution of Smoking Histories Among Individuals Ages 25 and Older, by Education Level, 2005



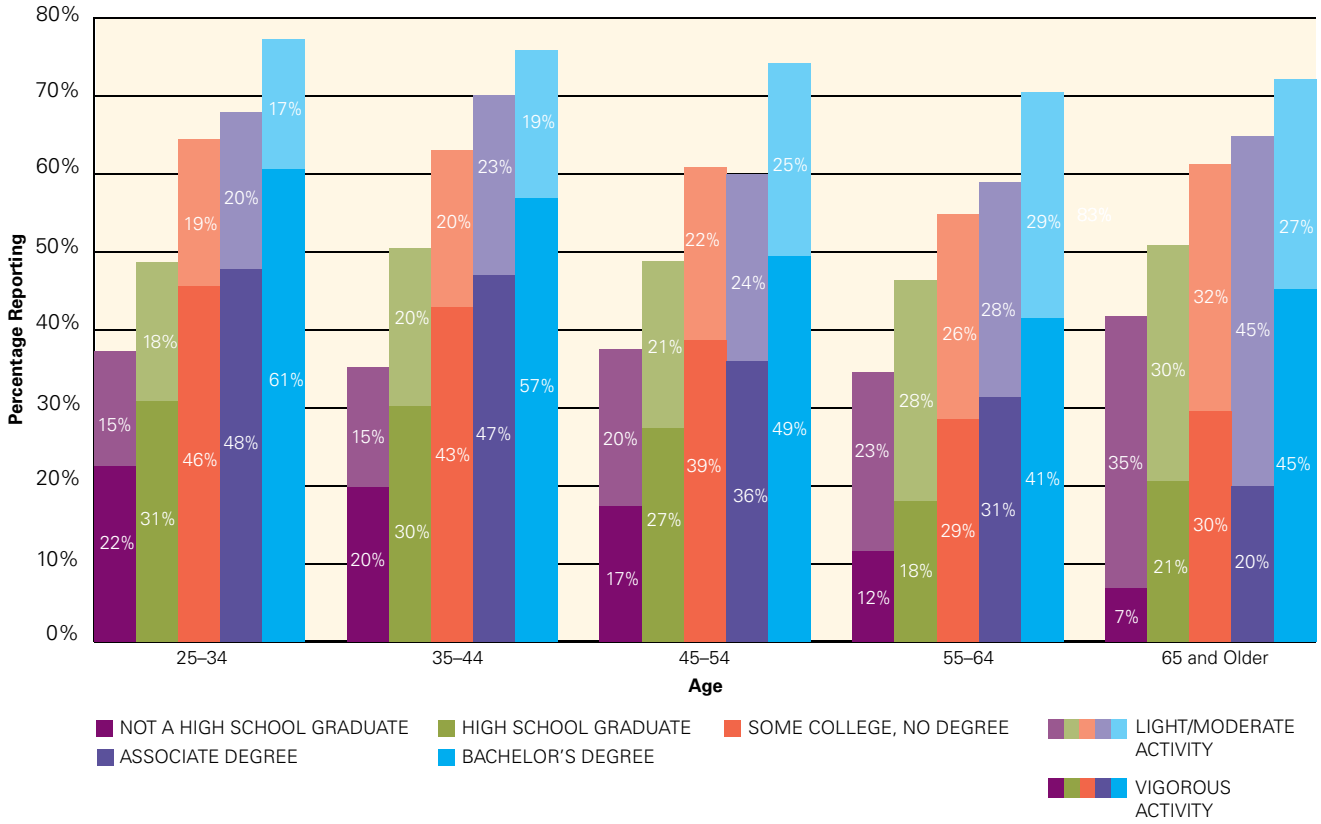
Note: Percentages may not add up to 100 due to rounding.
Sources: NCHS, *2005 National Health Interview Survey*; calculations by the authors.

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 percent 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 mandatory, the smoking rate among college graduates had declined to 37 percent, while 44 percent of high school graduates smoked.
- By 2005, only about 20 percent of adults smoked. Among four-year college graduates, only 9 percent smoked and over half of those had made an effort to stop smoking in the past year (Figure 1.14b).

Exercise

Figure 1.15: Percentage of Individuals Ages 25 and Older Reporting Vigorous or Light/Moderate Activity, by Education Level, 2005



Sources: NCHS, *2005 National Health Interview Survey*; calculations by the authors.

The bars in this graph show percentages of individuals who exercised at least once a week in 2005 at each education level. The lighter segments represent light/moderate activity and the darker segments represent vigorous activity.

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

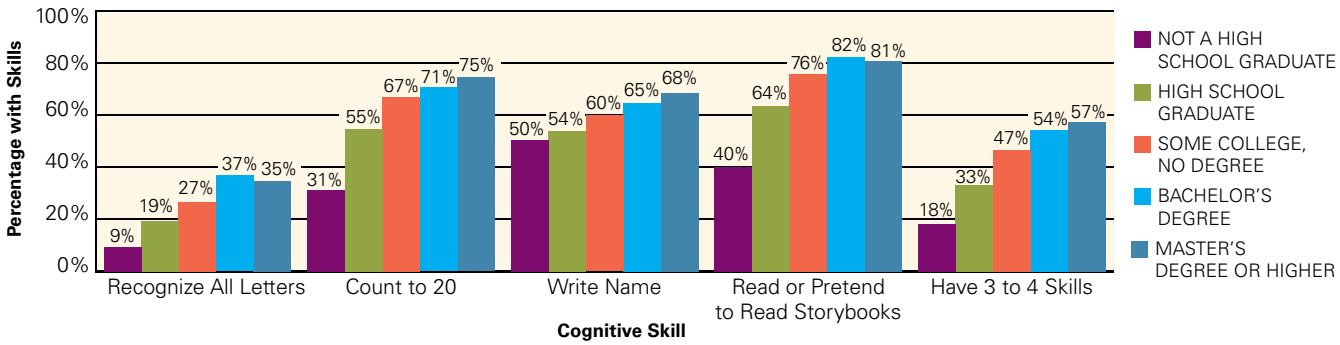
- In 2005, 61 percent of four-year college graduates ages 25–34 exercised vigorously at least once a week. Only 31 percent of high school graduates did so.
- Among individuals ages 65 and older, 45 percent of four-year college graduates and 21 percent of high school graduates exercised vigorously at least once a week.
- Differences in exercise patterns between college graduates and high school graduates were greatest for younger people. The proportion of four-year college graduates ages 25–34 who exercised at least moderately once a week was 78 percent, 29 percentage points higher than for high school graduates. The gap in exercise patterns between college and high school graduates for individuals ages 65 and older was 21 percentage points.

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).
- Despite the independent role of education in improving measures of health, both income and racial/ethnic differences are associated with significant differences in behavior among those with similar levels of education.

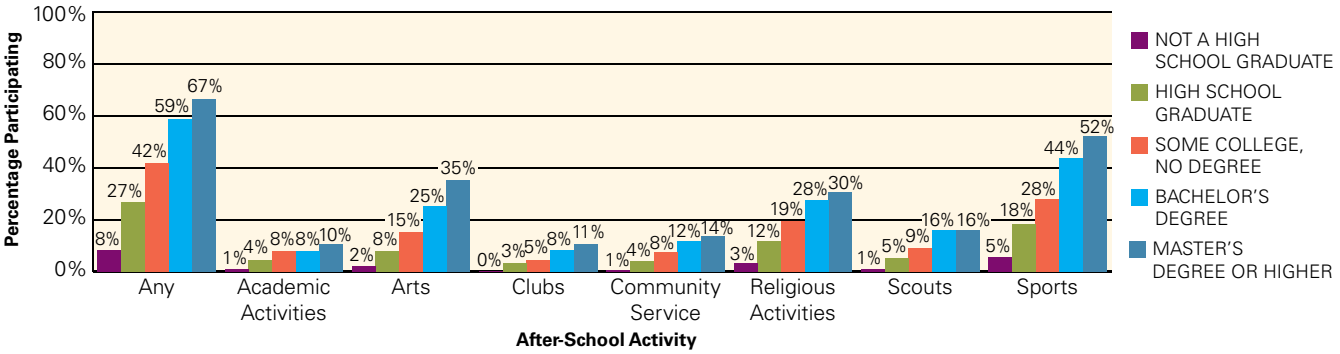
Parents and Children

Figure 1.16a: Cognitive Skills of Preschool Children Ages 3–5, by Mother's Education Level, 2005



Source: U.S. Census Bureau, 2007, Table 224 (based on *2005 National Household Education Survey*).

Figure 1.16b: Percentage of Students in Kindergarten Through Eighth Grade Who Participated in After-School Activities, by Parents' Highest Education Level, 2005



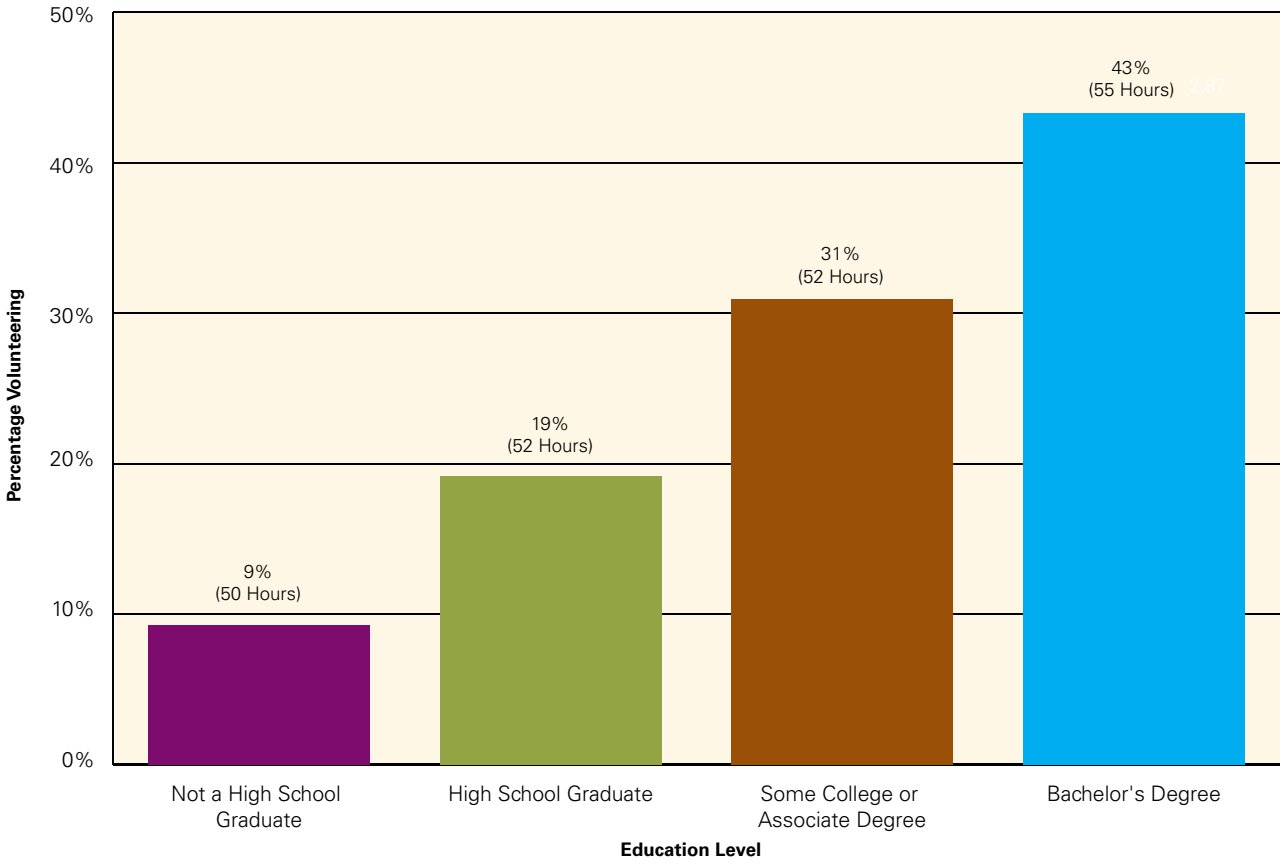
Source: NCES, *After-School Programs and Activities Survey* of the *2005 National Household Education Survey.*

Children of parents with higher levels of educational attainment are better prepared for school and are more involved in all types of extracurricular activities than other children.

- The cognitive skills of children between ages 3 and 5 were highly correlated with the education level of their mothers. In 2005, 37 percent of children in this age group whose mothers had a bachelor's degree (and 35 percent of those whose mothers had an advanced degree) could recognize all letters, compared to 19 percent of the children of high school graduates and 27 percent of those whose mothers had some college experience.
- More than half of the children whose mothers had four-year college degrees and almost half of those whose mothers attended some college had at least three of the following skills that made them ready to succeed in school: recognizing all letters, being able to count to 20, reading or pretending to read books, or writing their name. A third of the children of high school graduates and less than 20 percent of the children of mothers who did not complete high school had these skills.
- Among elementary and middle school children, 67 percent of those with at least one parent with an advanced degree participated in after-school activities, as did 59 percent of those with at least one parent with a bachelor's degree. Participation rates in any after-school activity were 42 percent for the children of parents with some college, 27 percent for the children of high school graduates, and 8 percent for children whose parents did not graduate from high school.
- The children of college graduates were more than three times as likely as the children of high school graduates to participate in scouting and in arts-related after-school activities.
- Twenty-eight percent of the children of college graduates participated in after-school religious activities, compared to 12 percent of the children of high school graduates. Forty-four percent of the children of college graduates participated in after-school sports activities, compared to 18 percent of the children of high school graduates.

Volunteerism

Figure 1.17: Percentage of Individuals Ages 25 and Older Who Volunteered and the Median Number of Hours Volunteered, by Education Level, 2006



Source: Bureau of Labor Statistics, 2007, Table 1.

Higher levels of education are associated with higher levels of participation in volunteer activities.

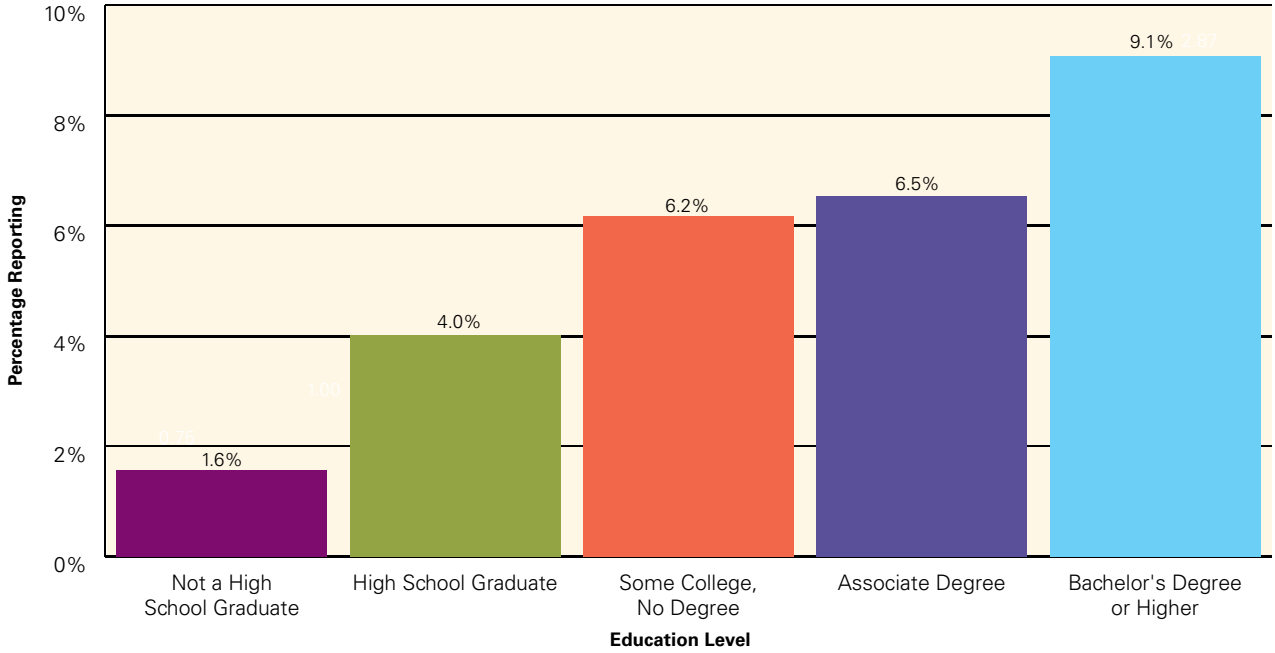
- In 2006, about 27 percent of adults (including 30 percent of women and 23 percent of men) volunteered through an organization. Among college graduates, the volunteer rate was 43 percent, over twice the 19 percent rate for high school graduates.
- Among those who volunteered, the median number of volunteer hours increased with educational attainment (55 hours for college graduates, 52 hours for those with some college or a high school diploma, and 50 hours for those with less than a high school diploma).

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 is estimated to increase the likelihood of volunteering by 16 percent, controlling for other demographic characteristics (Dee, 2004).
- Part-time workers are more likely to volunteer than full-time workers (36 percent versus 27 percent in 2006), but only 24 percent of unemployed adults and 23 percent of those not in the labor force volunteered (Bureau of Labor Statistics, 2007, Table 1).

Blood Donation

Figure 1.18: Percentage of Individuals Ages 25 and Older Who Donated Blood in the Past 12 Months, by Education Level, 2005



Sources: NCHS, *2005 National Health Interview Survey*, calculations by the authors.

College graduates are more likely than others to donate blood.

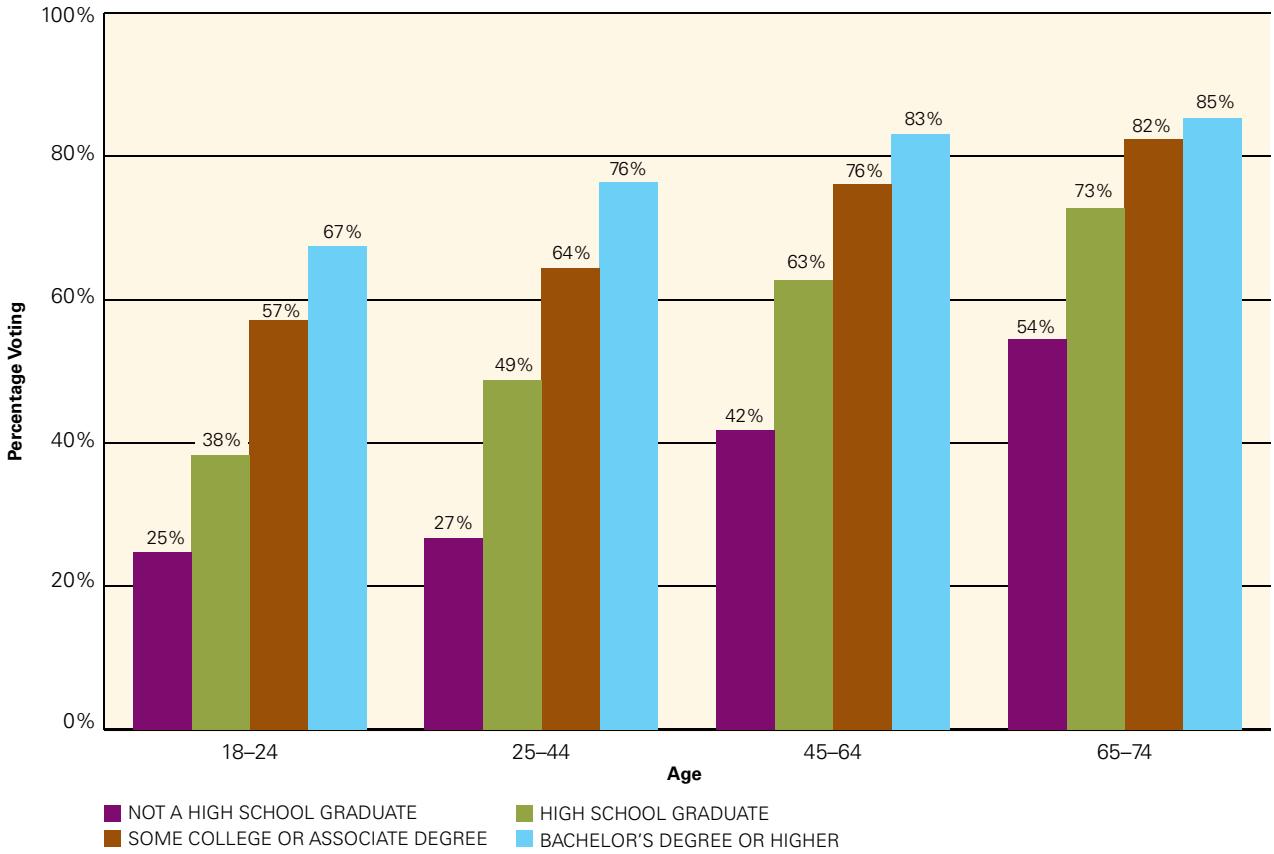
- In 2005, about 9 percent of college graduates reported having given blood in the past year, compared to about 6 percent of those with some college or an associate degree, 4 percent of high school graduates, and less than 2 percent of adults who did not complete high school.

Also important:

The association between education level and blood donation cannot necessarily be interpreted as causation. However, statistical analysis reveals that after controlling for age, race/ethnicity, and income, those with some college are about 2 percentage points more likely than high school graduates to donate blood, and college graduates are 5 percentage points more likely to donate regularly (DDB Worldwide, 2003; calculations by the authors).

Voting

Figure 1.19: Percentage of U.S. Citizens Ages 25 and Older Who Voted, by Age and Education Level, 2004



Source: U.S. Census Bureau, 2004, Table 5.

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

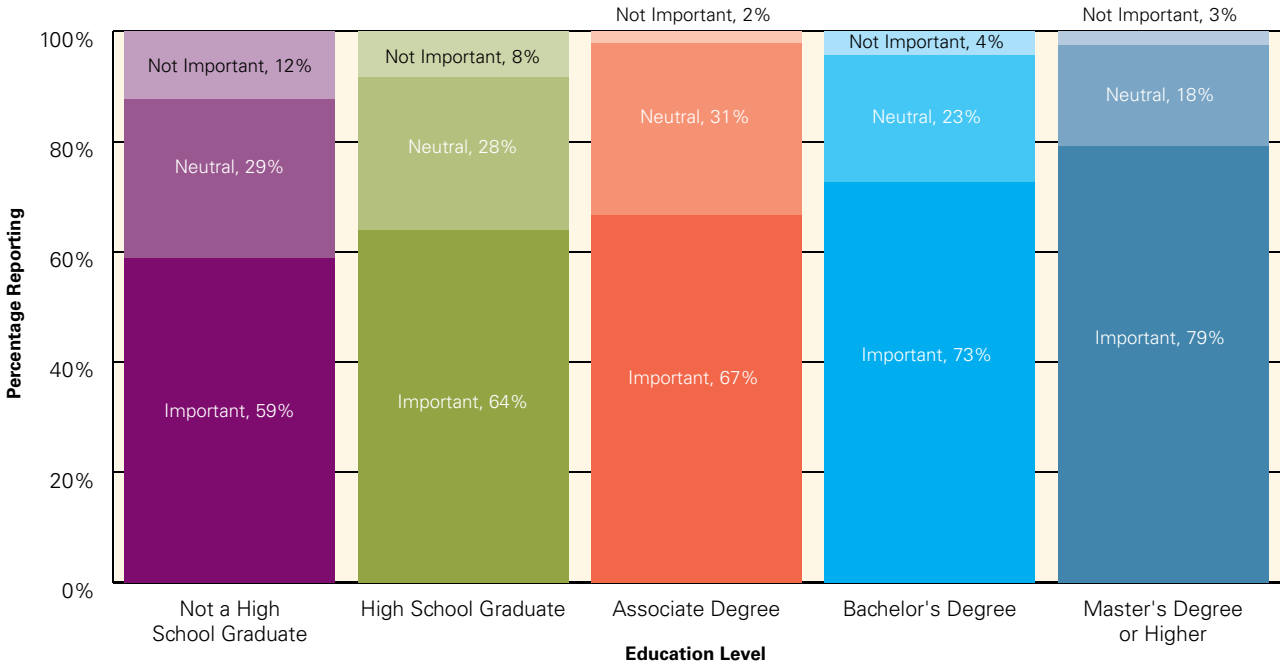
- In the 2004 presidential election, 76 percent of U.S. citizens who were college graduates between ages 25 and 44 reported voting, compared to 49 percent of high school graduates. Among citizens between ages 45 and 64, 83 percent of college graduates and 63 percent of high school graduates reported voting.
- Voting rates differ more by education level among young people than among older people. In 2004, the 67 percent participation rate among college graduates ages 18–24 was 29 percentage points higher than the 38 percent participation rate for high school graduates in that age group. The 85 percent participation rate among college graduates ages 65–74 was 12 percentage points higher than the 73 percent participation rate for high school graduates in that age group.

Also important:

- The 64 percent voting rate in the 2004 election was near the top of the 58–65 percent range of participation rates in presidential elections since 1972.
- Voting rates are lower in congressional elections than in presidential elections. For example, among U.S. citizens between ages 25 and 44, only 55 percent of college graduates and 29 percent of high school graduates reported voting in the 2002 congressional election (U.S. Census Bureau, 2002, Table 6).

Attitudes

Figure 1.20: Importance Placed by Individuals Ages 25 and Older on Trying to Understand Opinions of Others, by Education Level, 2004



Sources: National Opinion Research Center, *General Social Survey*, 2004 Citizenship Module; calculations by the authors.

Adults with higher levels of education are more likely than others to be open to differing opinions.

- In 2004, 79 percent of adults with advanced degrees and 73 percent of those with bachelor's degrees believed it was very important (6 or 7 on a scale ranging from 1 to 7) to try to understand the reasoning behind the opinions of others. Sixty-seven percent of associate degree holders, 64 percent of high school graduates, and 59 percent of adults who did not complete high school gave this response.
- No more than 4 percent of those with any type of college degree considered it unimportant to try to understand the opinions of others. This compares to 8 percent of high school graduates and 12 percent of adults who did not complete high school.

Also important:

Attitudes are developed through educational experiences, but preexisting attitudes also affect an individual's educational attainment.

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. White and Asian high school graduates enroll in postsecondary education at significantly higher rates than black and Hispanic high school graduates, and the gaps are not closing. Women have been more likely than men to enroll since the late 1980s.

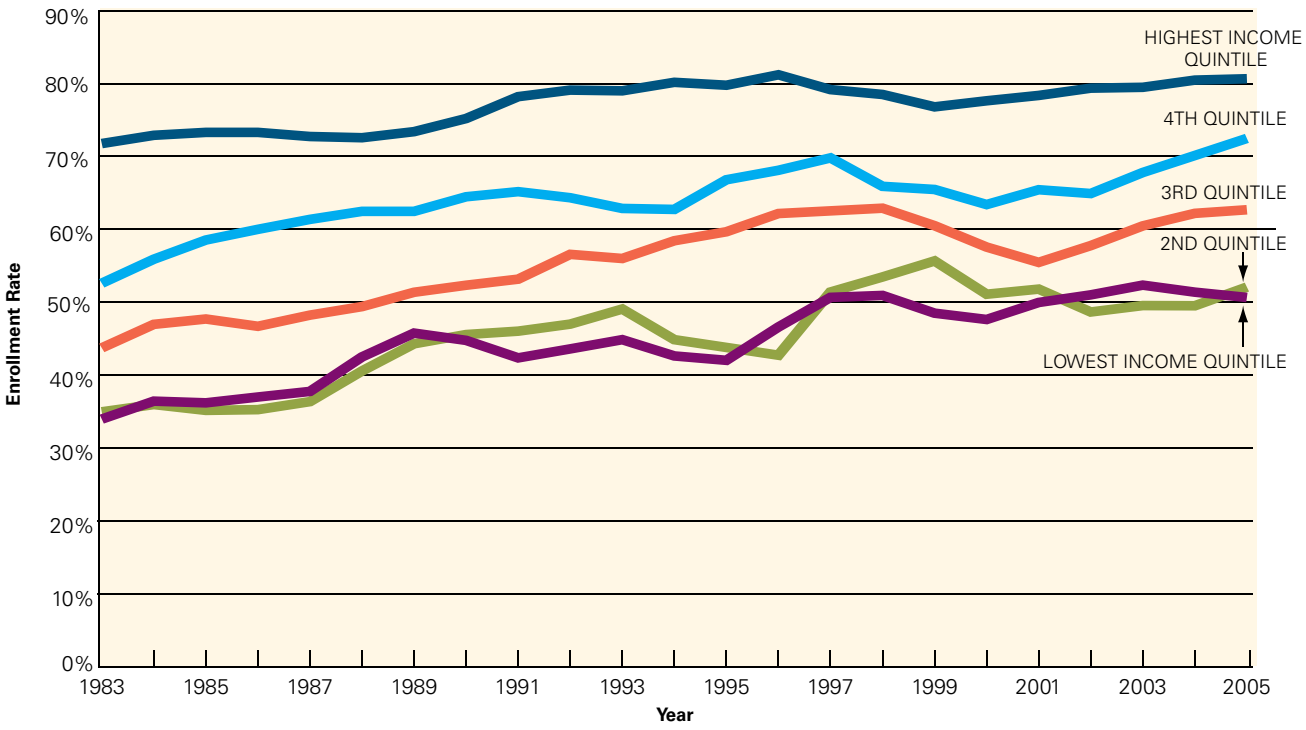
High school graduates from affluent families are much more likely than those from lower-income backgrounds to enroll in college. Even among those with similar levels of academic achievement, students from families with lower incomes and lower levels of education are much less likely than more privileged students to continue their education after high school. Both income and parent education level have independent effects on the probability of students enrolling in college. Moreover, among those who do enroll, low-income students are overrepresented in two-year public colleges, while affluent students are more likely than others to attend private four-year colleges and universities.

Although the discussion about participation in higher education is frequently couched in terms of access, persistence to degree is an increasingly important focus. Even among those who enroll in postsecondary institutions, degree completion is correlated with demographic characteristics. White and Asian students are more likely to earn degrees than black and Hispanic students, and higher-income students are more likely than others to graduate. The differences in enrollment and degree completion rates are reflected in significant differences in educational attainment patterns among the adult population.

After documenting these demographic disparities, this section provides information on differences in educational attainment between rural and urban residents, and comparisons of levels of academic achievement and degree attainment in the United States to those in other countries.

College Enrollment by Income

Figure 2.1: Postsecondary Enrollment Rates of Recent High School Graduates by Family Income, 1983–2005



Notes: Based on enrollment in college within 12 months of high school graduation. Income quintiles are defined in terms of all households. In 2005, the upper income limits of the quintiles were: lowest, $16,799; 2nd, $31,998; 3rd, $50,380; and 4th, $80,662. High school graduates are not evenly distributed among income quintiles. In 2005, 13 percent of high school graduates were in the lowest income quintile, 15 percent were in the 2nd, 16 percent were in the 3rd, 24 percent were in the 4th, and 31 percent were in the highest income quintile.
Source: NCES, unpublished tabulation using data from the *Current Population Survey*.

Increases in college enrollment rates have been most rapid at the lower end of the income distribution and slowest at the upper end, both over the past 25 years and over the past decade. Still, about 30 percentage points more high school graduates from the highest income quintile than from the lowest income quintile enroll in college immediately after high school. The gap in enrollment rates between the highest and the middle-income groups is almost 20 percentage points.

- The immediate enrollment rate of high school graduates in the highest income quintile was 35 to 40 percentage points higher than the enrollment rate of high school graduates in the lowest income quintile during the early and mid-1980s. The gap narrowed somewhat during the mid- to late 1990s, and has fluctuated between 25 and 30 percentage points since 1997.
- The gap in enrollment rates between upper- and middle-income high school graduates declined during the 1980s and 1990s, and has been relatively stable since the late 1990s.
- Between the mid-1990s and 2005, the immediate college enrollment rate increased by about 12 percentage points for high school graduates from families in the lowest income quintile and 10 percentage points for the second-lowest income group. These increases narrowed gaps among income groups, as enrollment increased by about 3 percentage points for the 3rd quintile, 7 percentage points for the 4th quintile, and between 1 and 2 percentage points for the most affluent students.

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 to continue their education, a pattern more common among lower-income than higher-income students.

College Enrollment by Race/Ethnicity

Figure 2.2a: Postsecondary Enrollment Rates of Recent High School Graduates by Race/Ethnicity, 1973–2005

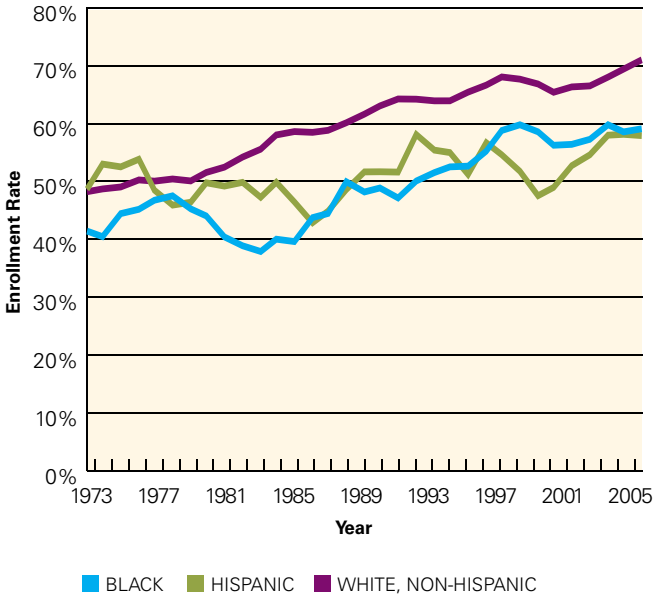
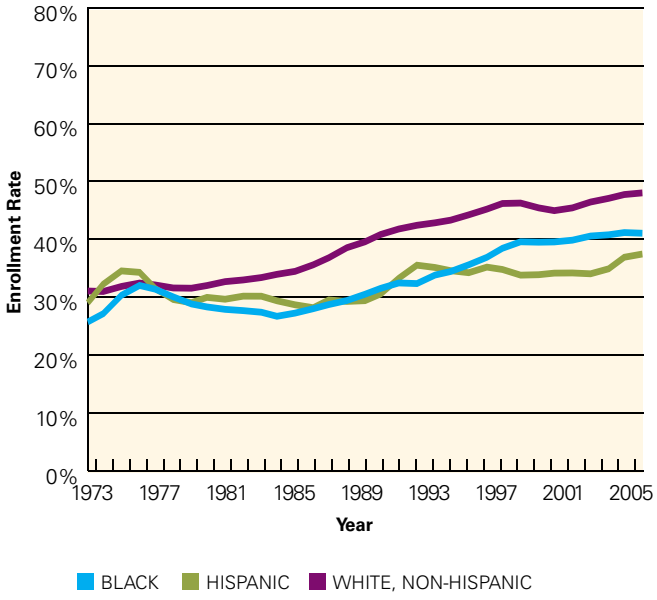


Figure 2.2b: Postsecondary Enrollment Rates of High School Graduates Ages 18–24 by Race/Ethnicity, 1973–2005



Note: Postsecondary enrollment includes both undergraduate and graduate students.
Sources: Snyder et al., 2006, Table 181 and Table 184; U.S. Census Bureau, 2005, Table 1; calculations by the authors.

The figure on the left shows the proportions of high school graduates enrolled in college within 12 months of high school graduation by race/ethnicity. The figure on the right shows the proportions of all high school graduates ages 18–24 enrolled in college by race/ethnicity.

College participation rates among whites are higher than those among blacks and particularly Hispanics. Gaps in college enrollment rates have fluctuated over the past three decades and are now relatively large by historical standards.

- In 2005, 71 percent of white recent high school graduates (those who had graduated within the past 12 months) were enrolled in college. In contrast, 59 percent of black high school graduates and 58 percent of Hispanic high school graduates went directly to college.
- The gap between the immediate college enrollment rates of white and black high school graduates has risen from about 8 percentage points in the late 1990s to 12 percentage points in 2005.
- The gap between the immediate college enrollment rates of white and Hispanic high school graduates was 6 to 9 percentage points in the early 1990s. Enrollment rates have increased markedly for both groups, but the gap was about 10 to 13 percentage points in 2005.
- In 2005, 49 percent of all white high school graduates ages 18–24 were enrolled in postsecondary institutions, compared to about 41 percent of black high school graduates and 38 percent of Hispanic high school graduates in this age range.

Also important:

- Immediate enrollment rates of high school graduates do not capture students who wait more than a year to continue their education.
- Enrollment rates of the 18- to 24-year-old population include students each year that they are in school, whereas immediate enrollment rates are not affected by the number of years students are enrolled in postsecondary education.
- The gaps in enrollment by race/ethnicity for all 18- to 24-year-olds are significantly larger than the gaps for 18- to 24-year-old high school graduates because high school graduation rates are lower for blacks and Hispanics than for whites.

College Enrollment by Gender

Figure 2.3a: Postsecondary Enrollment Rates of Recent High School Graduates by Gender, 1967–2005

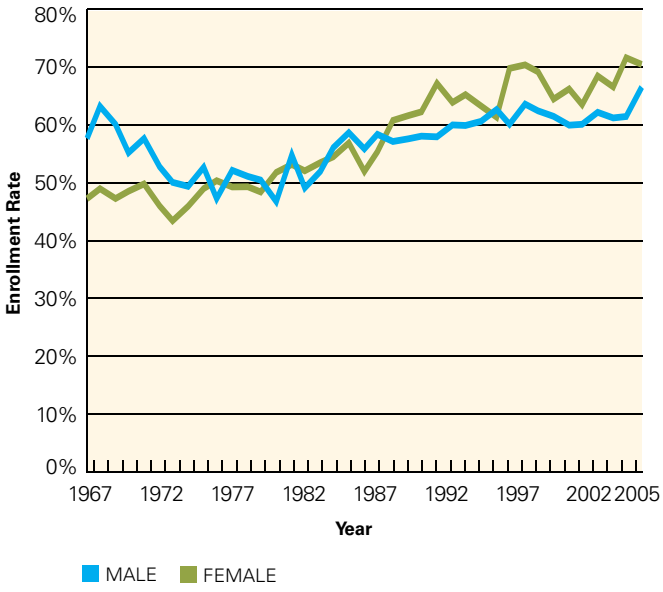
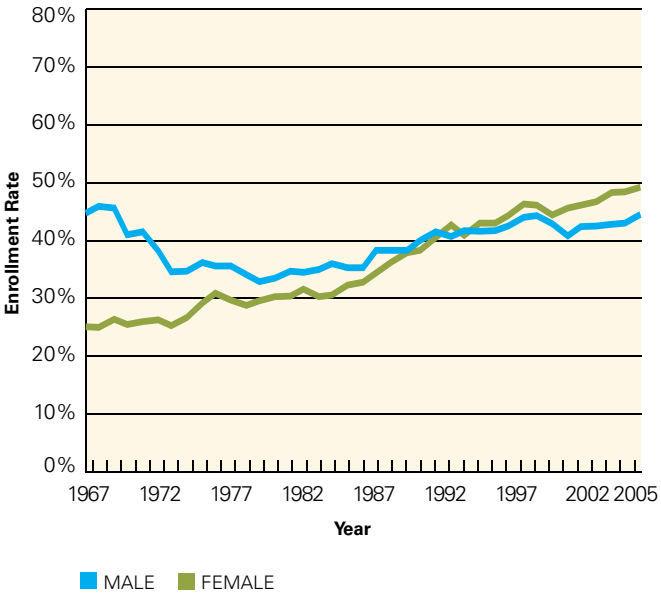


Figure 2.3b: Postsecondary Enrollment Rates of High School Graduates Ages 18–24 by Gender, 1967–2005



Note: Postsecondary enrollment includes both undergraduate and graduate students.
Sources: Snyder et al., 2006, Table 182 and Table 184; U.S. Census Bureau, 2005, Table 1; calculations by the authors.

Since 1988, the proportion of female high school graduates enrolling in a postsecondary institution immediately after graduation has exceeded that of male high school graduates.

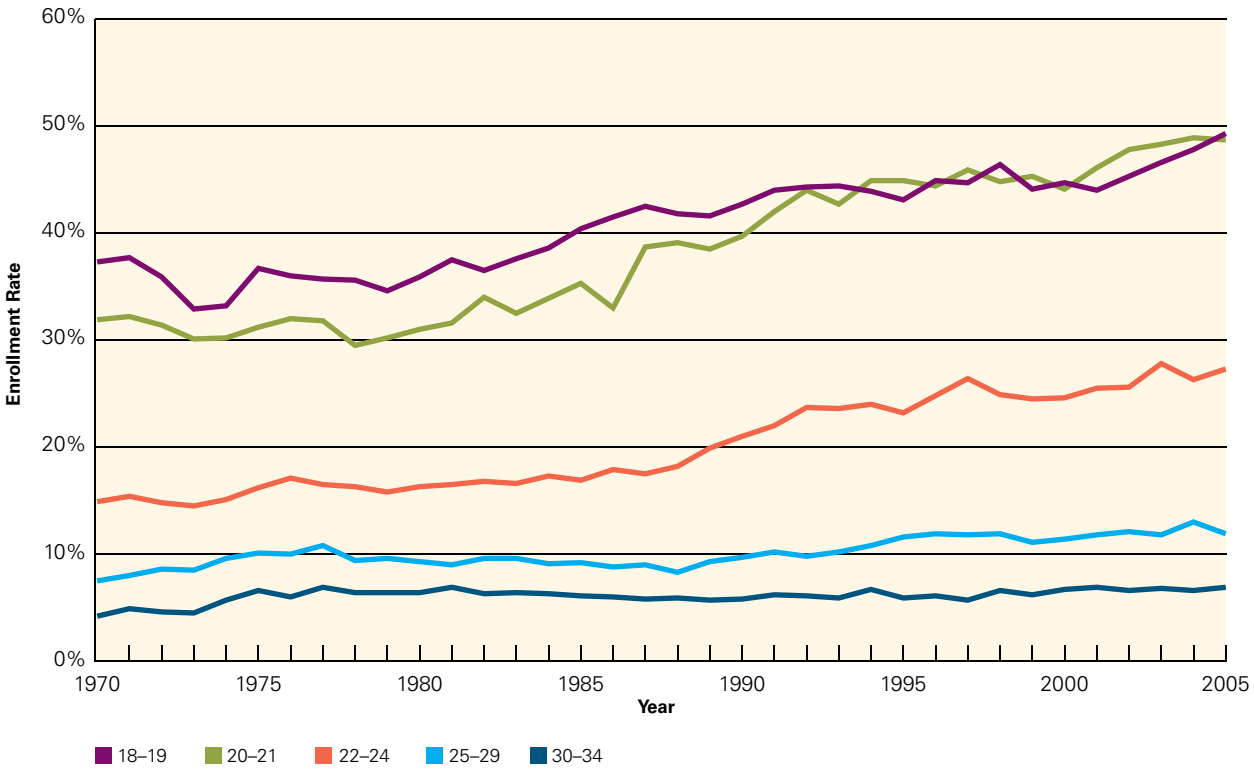
- In 2005, 67 percent of male high school graduates and 70 percent of female high school graduates enrolled immediately in postsecondary education. In 1967, the enrollment rates were 58 percent for males and 47 percent for females.
- The gap between female and male enrollment rates has fluctuated over the past 20 years, rather than increasing steadily.
- Among 18- to 24-year-old high school graduates, 49 percent of females and 45 percent of males were enrolled in postsecondary institutions in 2005.

Also important:

- Immediate enrollment rates of high school graduates do not capture students who wait more than a year to continue their education.
- Enrollment rates of the 18- to 24-year-old population include students each year that they are in school, whereas immediate enrollment rates are not affected by the number of years students are enrolled in postsecondary education.
- The gaps in enrollment by gender for all 18- to 24-year-olds are significantly larger than the gaps for 18- to 24-year-old high school graduates because high school graduation rates are lower for males than for females.

College Enrollment by Age

Figure 2.4: Postsecondary Enrollment Rates of Individuals Ages 18–34 by Age, 1970–2005



Note: Includes part-time and full-time enrollment in postsecondary institutions with programs of at least two years.
Source: NCES, 2007, Indicator 1.

The proportion of adults ages 25–34 enrolled in postsecondary institutions increased rapidly between 1970 and 1975, but has been relatively stable since, while enrollment among traditional-age college students has increased.

- In 1970, the proportion of 18- and 19-year-olds enrolled in postsecondary education was five times as high as the proportion of 25- to 29-year-olds. That ratio had declined to 3.3 by 1977, but returned to 5.0 by 1988. Over the past decade it has fluctuated between 3.7 and 4.1.
- The enrollment rate of 30- to 34-year-olds rose from 4.2 percent in 1970 to 6.9 percent in 1977 and has fluctuated between 5.7 percent and 6.9 percent since.
- Since the year 2000, the enrollment rates of all groups of individuals under age 30 have been higher than at any time in the past.

Stratification Within Higher Education

Figure 2.5a: Family Income Distribution of Dependent Students Within Postsecondary Sectors, 2003-04

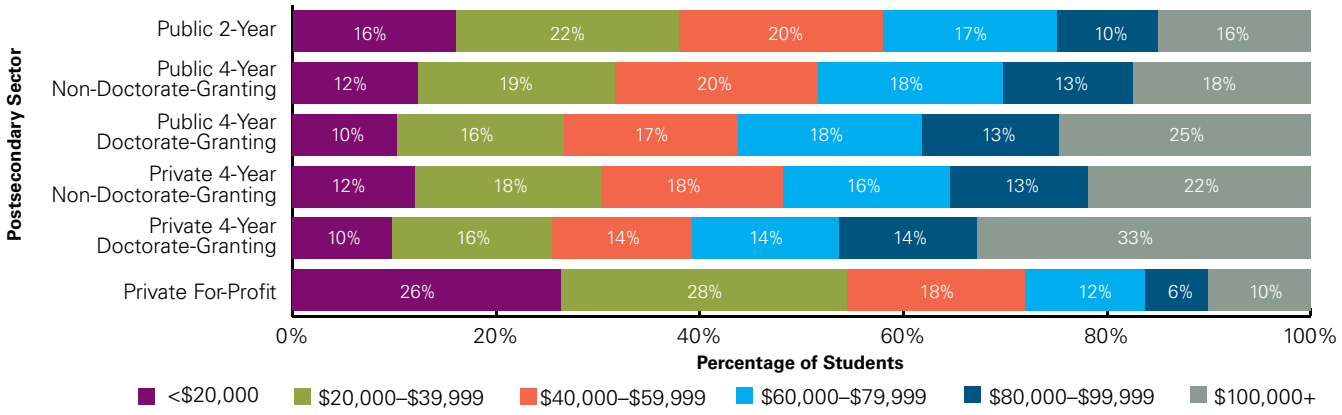
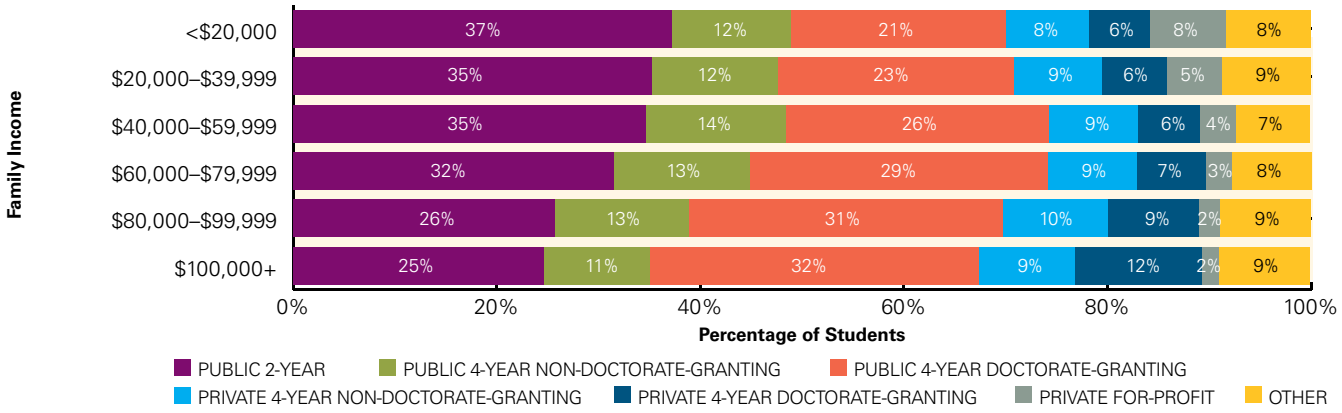


Figure 2.5b: Dependent Students' Choice of Postsecondary Sector by Family Income, 2003-04



Notes: The "Other" category in Figure 2.5b includes students who were enrolled in public less-than-two-year institutions, private not-for-profit less-than-four-year institutions, and those who were enrolled in more than one institution. Percentages may not add up to 100 due to rounding.
Source: Horn et al., 2006, Table 1.3 and Table 3.5A.

The lowest income students are overrepresented in for-profit colleges and, to a lesser extent, in two-year public colleges. Low-income students are underrepresented in public and private doctorate-granting institutions.

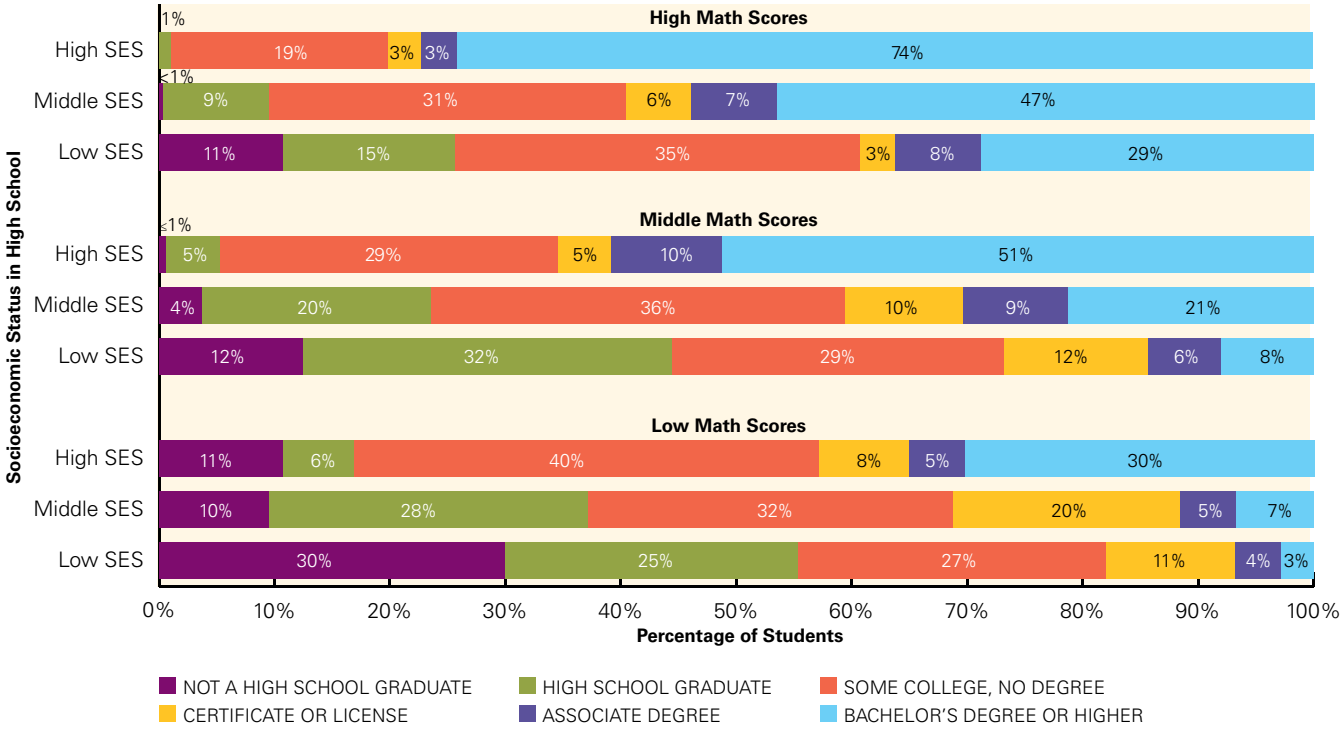
- Private non-doctorate-granting colleges and universities enroll a higher proportion of low-income students and a lower proportion of high-income students than do public doctorate-granting universities.
- Just under 60 percent of the dependent college students from families with incomes below $60,000 who were enrolled in four-year institutions in 2003-04 attended doctorate-granting institutions—the most selective of these institutions. The proportion enrolled in this subset of institutions increases with income, and 69 percent of those from families with incomes exceeding $100,000 were enrolled in this type of institution.
- In 2003-04, the proportion of students from families with incomes below $20,000 ranged from 26 percent in the private for-profit sector to 10 percent in private and public doctorate-granting institutions.
- The proportion of students from families with incomes of $100,000 or higher ranged from 33 percent in private doctorate-granting institutions to 10 percent in private for-profit institutions.

Also important:

Students who were independent of their parents are not included here. They constituted 76 percent of the students at private for-profit institutions, 61 percent of the students at two-year public colleges, 47 percent at private, and 43 percent at public non-doctorate-granting institutions. Independent students are less likely to enroll at doctorate-granting institutions, where they composed 30 percent of the student body in the public sector and 23 percent in the private sector in 2003-04.

Socioeconomic Status, Math Test Scores, and Educational Attainment

Figure 2.6: Education Level in 2000, by Math Test Scores and Socioeconomic Status in High School, High School Class of 1992



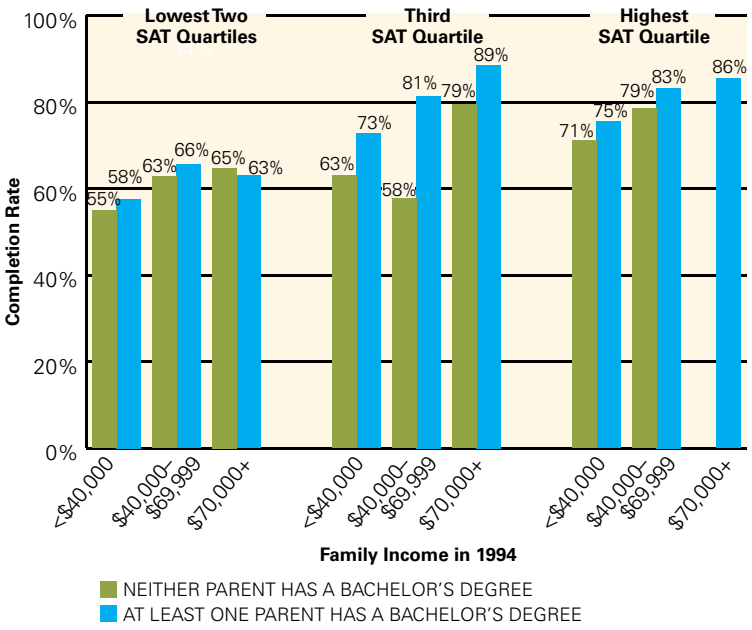
Notes: Socioeconomic status (SES) was measured by a composite score based on parental education, occupations, and family income. Middle SES and middle math scores include middle two quartiles. Percentages may not add up to 100 due to rounding.
Source: Fox, et al., 2005, Table 21.

Even among students with very high test scores, college enrollment and degree completion rates are significantly lower for those from lower socioeconomic backgrounds.

- Eight years after their scheduled high school graduation date, 74 percent of the eighth-graders in 1988 who were high math achievers from the lowest socioeconomic background had enrolled in college, but only 29 percent had earned bachelor's degrees.
- Among students from the highest socioeconomic quartile with similar high levels of achievement in mathematics in eighth grade, 99 percent had enrolled in college and 74 percent had earned bachelor's degrees by the year 2000.
- Among students from the middle socioeconomic quartiles with similar high levels of achievement in mathematics in eighth grade, 91 percent had enrolled in college and 47 percent had earned bachelor's degrees by the year 2000.
- Differences in educational attainment for students with different levels of academic achievement are greater for those from lower socioeconomic backgrounds.
- Differences in educational attainment for students from different socioeconomic backgrounds are smallest for those with high test scores. Among those in the high school class of 1992 with low test scores, students from high SES backgrounds were almost twice as likely as those from low SES backgrounds to enroll and 10 times as likely to earn a bachelor's degree. Among those with high test scores, students from high SES backgrounds were about 32 percent more likely than those from low SES backgrounds to enroll and 2.6 times as likely to earn a bachelor's degree.
- The proportion of students from high SES backgrounds who completed bachelor's degrees was the same as the proportion from low SES backgrounds who enrolled.

Completion of Bachelor's Degree by Family Background and Test Scores

Figure 2.7: Percentage of Full-Time First-Year Dependent Students at Four-Year Institutions in 1995 Who Had Completed Bachelor's Degrees by 2001, by Family Income, Parent Education Level, and Test Scores



	Completion Rate
Student SAT Quartile	
Lowest Two Quartiles (SAT score: 400–950)	60%
Third Quartile (SAT score: 951–1100)	76%
Highest Quartile (SAT Score: >1100)	80%
Parent Education Level	
Neither Parent Has a Bachelor's Degree	62%
At Least One Parent Has a Bachelor's Degree	76%
Family Income in 1994	
<$40,000	62%
$40,000–$69,999	71%
$70,000 and over	78%

Notes: Includes first-year dependent students who were enrolled full-time at a public four-year or private not-for-profit four-year institution during the first term of the 1995-96 school year. Sample size for highest SAT quartile students with family income of $70,000 and over, neither of whose parents has a bachelor's degree is too small to allow reliable reporting. The SAT score is a combined score derived as either the sum of SAT verbal and math scores or the ACT composite score converted to an estimated SAT score.
Sources: NCES, *Beginning Postsecondary Students Longitudinal Study: 1996/2001*; calculations by the authors.

Higher family income levels, higher parent education levels, and higher test scores are all associated with higher degree completion rates for students enrolled in four-year colleges and universities.

- Among low-income first-generation students beginning at four-year colleges in 1995, 71 percent of those who scored above 1100 on the SAT completed a bachelor's degree by 2001. Sixty-three percent of those students who scored between 950 and 1100, and 55 percent of those with lower scores completed a bachelor's degree by 2001.
- Among students beginning at four-year colleges who scored in the highest quartile on the SAT and who were not first-generation college students, 86 percent of those from families with incomes of $70,000 or higher completed a bachelor's degree by 2001, compared to 83 percent from middle-income and 75 percent from low-income families.
- Middle-income first-generation students with the highest SAT scores were more likely than low-income students with a college-educated parent to complete a bachelor's degree.
- Having a parent with a bachelor's degree is associated with larger differences in degree completion among students with mid-range SAT scores than among students with either high or low scores.

Also important:

- Some of the differences in degree completion rates reported here may be attributable to differences in the types of institutions in which students from different backgrounds enroll. The Andrew W. Mellon Foundation has collected data on students who enrolled in a relatively homogeneous group of 21 selective public universities in 1999. A preliminary, unpublished analysis of these data by researchers associated with the foundation shows that, although these students have higher completion rates than the broader national population, those rates display similar associations between family income, education levels, and test scores, with six-year graduation or transfer rates ranging from 75 percent for low-income, first-generation students to 90 percent for high-income students with at least one parent with a bachelor's degree (Andrew W. Mellon Foundation, 2007).
- Annual family income levels represent long-term economic and social opportunities, not just current budgetary constraints.

Completion of Bachelor's Degree by Family Background and Race/Ethnicity

Figure 2.8a: Percentage of Full-Time First-Year Dependent Students at Four-Year Institutions in 1995 Who Had Completed Bachelor's Degrees by 2001, by Race/Ethnicity and Family Income

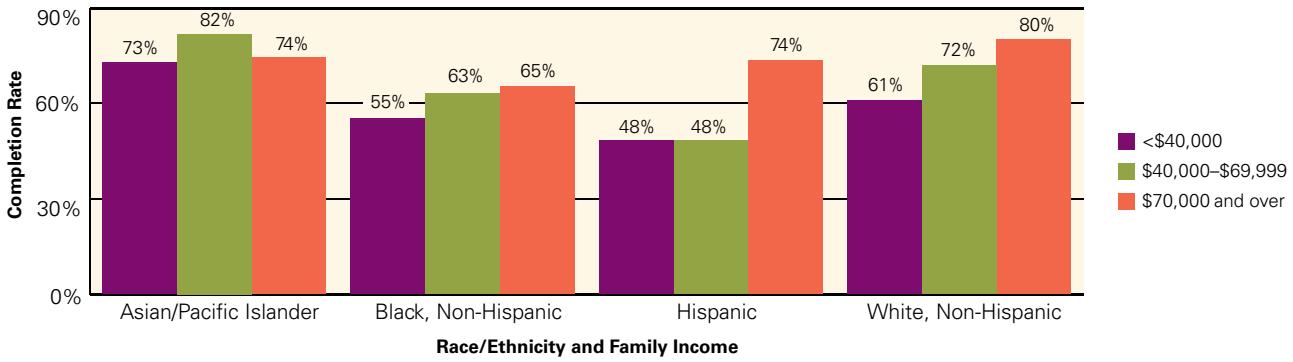
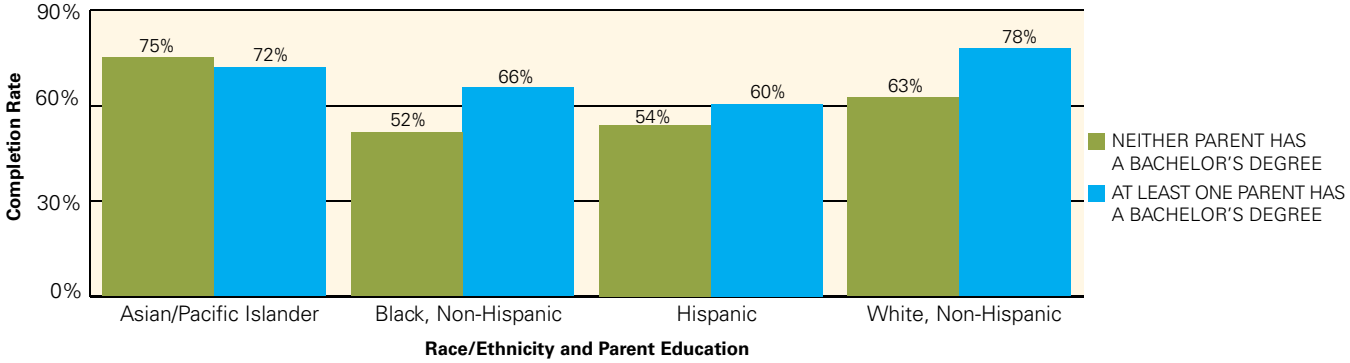


Figure 2.8b: Percentage of Full-Time First-Year Dependent Students in Four-Year Institutions in 1995 Who Had Completed Bachelor's Degrees by 2001, by Race/Ethnicity and Parent Education Level



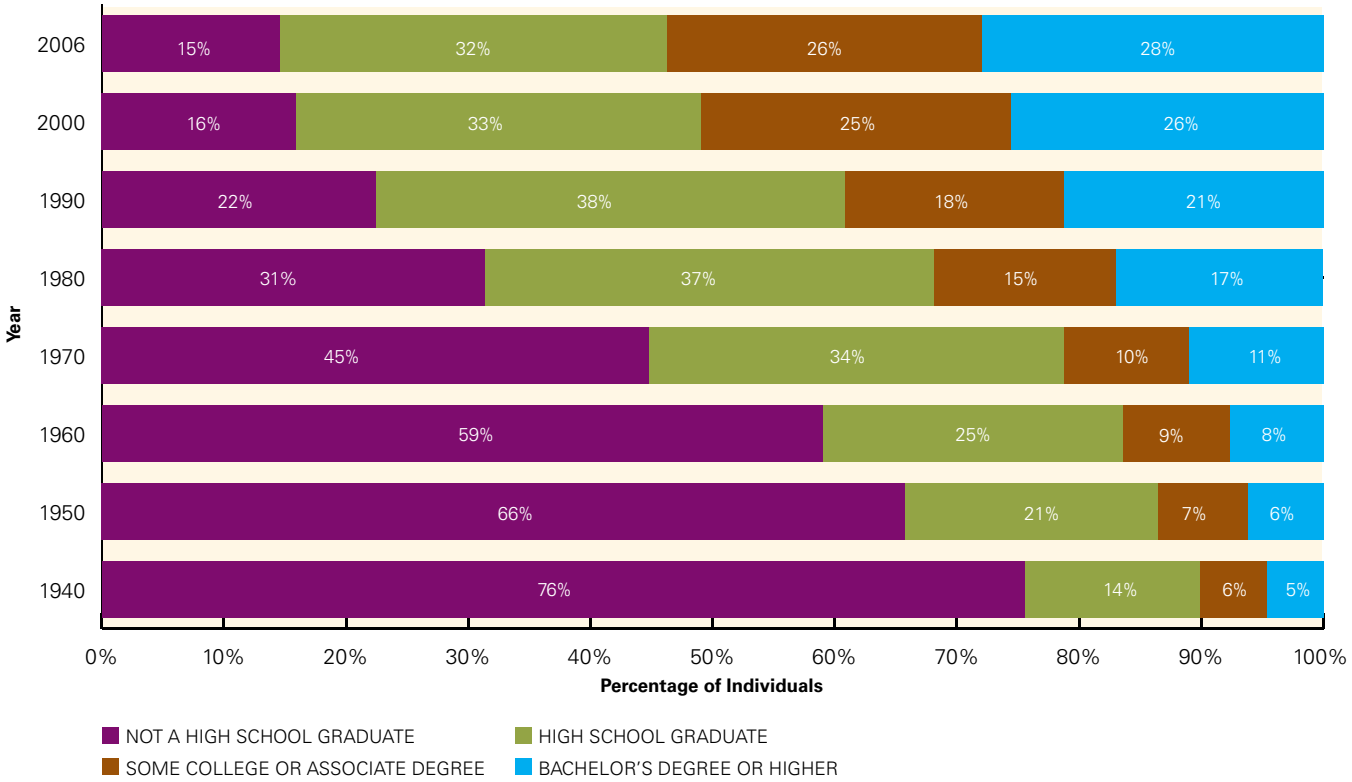
Notes: Includes first-year dependent students who were enrolled full-time at a public four-year or private not-for-profit four-year institution during the first term of the 1995-96 school year. The SAT score is a combined score derived as either the sum of SAT verbal and math scores or the ACT composite score converted to an estimated SAT score.
Sources: NCES, *Beginning Postsecondary Students Longitudinal Study: 1996/2001*; calculations by the authors.

Among white, black, and Hispanic students enrolled full-time in four-year institutions, higher family incomes and higher parent education levels are associated with higher degree completion rates.

- Whether or not a student has at least one parent who has completed a bachelor's degree was particularly important among blacks, whose degree completion rates were 52 percent for first-generation students and 66 percent for others, and whites, for whom completion rates were 63 percent for first-generation students and 78 percent for others. Among Asian/Pacific Islander students, however, 75 percent of first-generation students had completed a bachelor's degree within six years, compared to 72 percent of others.
- Differences in degree completion rates by income were largest for Hispanic students, among whom 74 percent of those from families with incomes of at least $70,000 completed a bachelor's degree, compared to 48 percent of those from families with lower incomes.
- For black students, completion rates were similar for those with incomes between $40,000 and $69,999 and those with incomes of $70,000 or higher, but lower for those from low-income families.
- For Asian/Pacific Islander students, completion rates were highest for those from middle-income families.

Educational Attainment Over Time

Figure 2.9: Education Level of Individuals Ages 25 and Older, 1940–2006



Note: Percentages may not add up to 100 due to rounding.
Source: U.S. Census Bureau, 2006a, Table A-1.

The proportion of adults in the United States who have completed a four-year college degree has doubled over the past 30 years and is almost six times higher than it was in 1940.

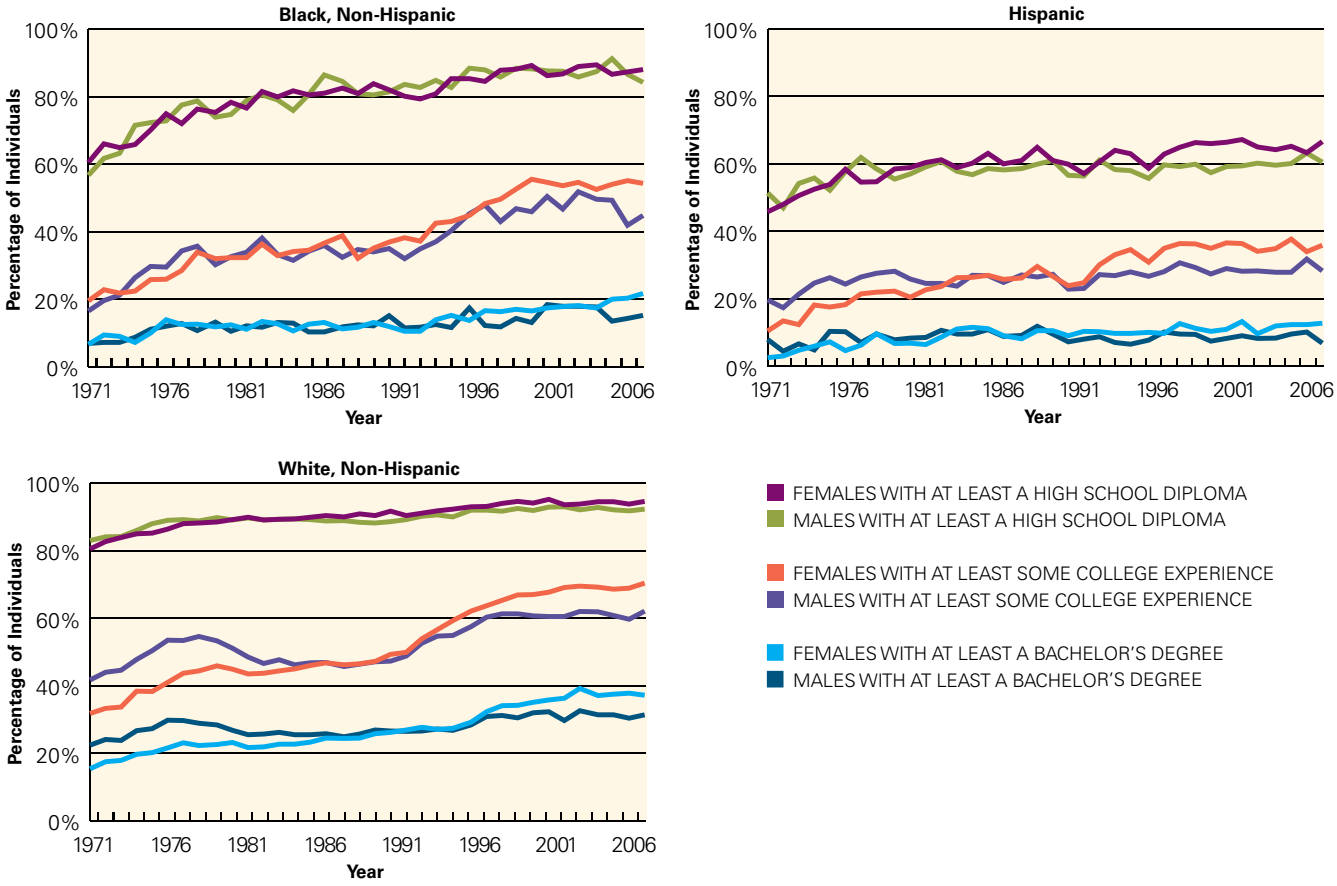
- The proportion of adults with less than a high school education declined to 15 percent in 2006 from 76 percent in 1940, 59 percent in 1960, 31 percent in 1980, and 16 percent in 2000.
- The proportion of adults who have earned bachelor's degrees doubled from 14 percent in 1975 (not shown) to 28 percent in 2006.
- The proportion of adults who have attended at least some college doubled from 27 percent in 1975 (not shown) to 54 percent in 2006.
- In 1940, the number of adults in the United States who had at least some college experience was 12 percent of the number who had no college experience. That proportion increased to 27 percent by 1970 and 104 percent by 2000. It reached 115 percent by 2006.

Also important:

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.

Educational Attainment by Race/Ethnicity and Gender

Figure 2.10: Percentage of Individuals Ages 25–29 Who Have Completed High School, Some College, and College, by Race/Ethnicity and Gender, 1971–2006



Source: NCES, 2007, Indicator 27.

Educational attainment increased significantly from 1971 to 2006 for all groups except Hispanic males. Differences across racial/ethnic groups in the proportion of young adults holding a bachelor's degree are much larger than differences in the proportion having any college experience.

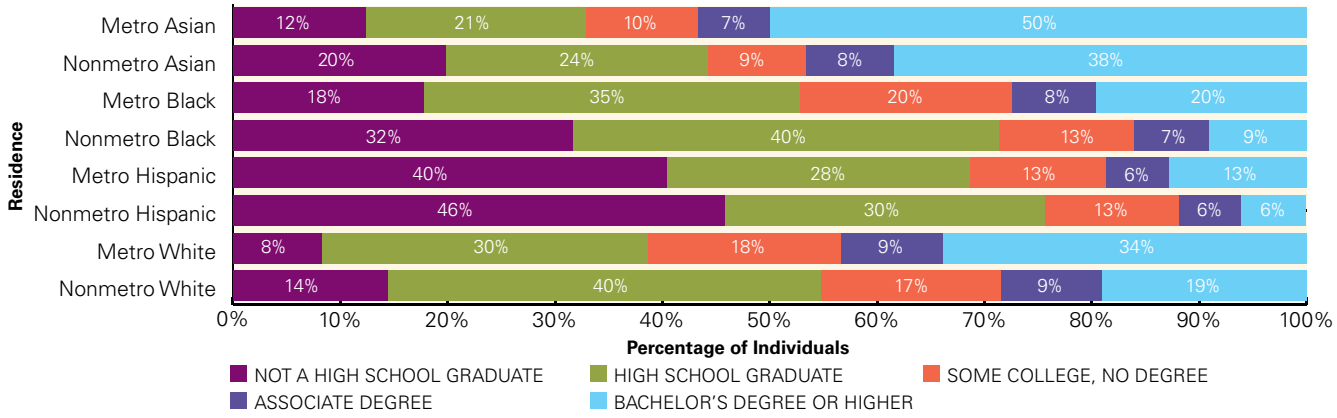
- The proportion of white males ages 25–29 who have completed a bachelor's degree increased from 22 percent in 1971 to 30 percent in 1976, but has not increased measurably since.
- The proportion of black males ages 25–29 who have completed a bachelor's degree increased from 7 percent in 1971 to 18 percent in 2000, and was 15 percent in 2006.
- The proportion of Hispanic males ages 25–29 who have completed a bachelor's degree was 8 percent in 1971 and 10 percent in 1996, but decreased to 7 percent in 2006.
- The proportion of young adult females holding a bachelor's degree has increased over the entire 1971–2006 time period for whites, blacks, and Hispanics.
- In 2006, white males were 39 percent more likely than black males to have entered college, and 107 percent more likely to have earned a bachelor's degree. White females were 30 percent more likely than black females to have entered college, and 71 percent more likely to have earned a bachelor's degree.

Also important:

Educational attainment is lower for Hispanic immigrants than for second-generation Hispanic Americans.

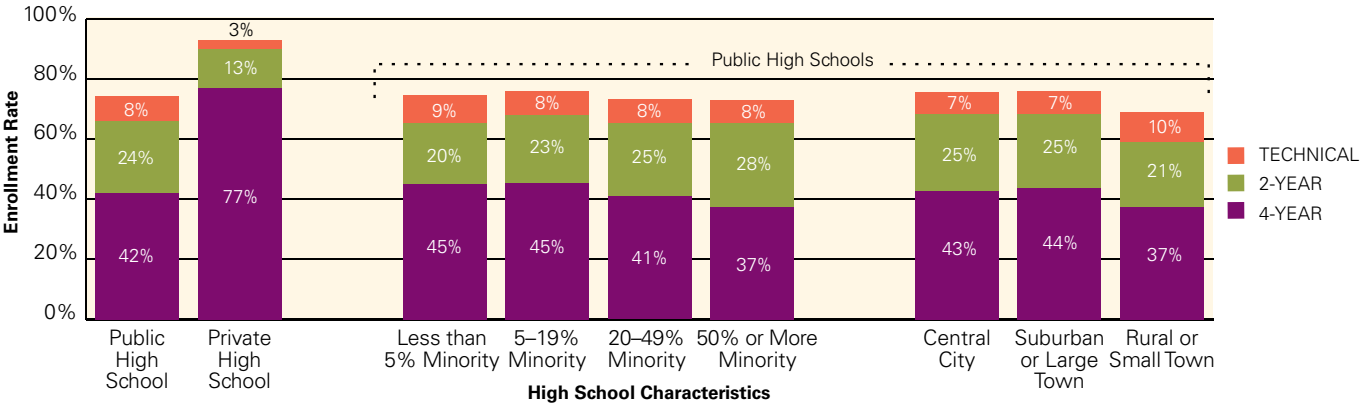
Community and High School Characteristics

Figure 2.11a: Education Level of Individuals Ages 25 and Older, by Metropolitan/Nonmetropolitan Residence and Race/Ethnicity, 2006



Notes: The term "metropolitan" refers to all counties in Metropolitan Statistical Areas (MSAs) and the term "nonmetropolitan" refers to all counties outside MSAs. The underlying concept of an MSA is that of a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. Percentages may not add up to 100 due to rounding.
Source: U.S. Census Bureau, 2006a, Table 11.

Figure 2.11b: Postsecondary Enrollment Rates of Recent High School Graduates by Type of Postsecondary Institution and Selected High School Characteristics, 1999–2000



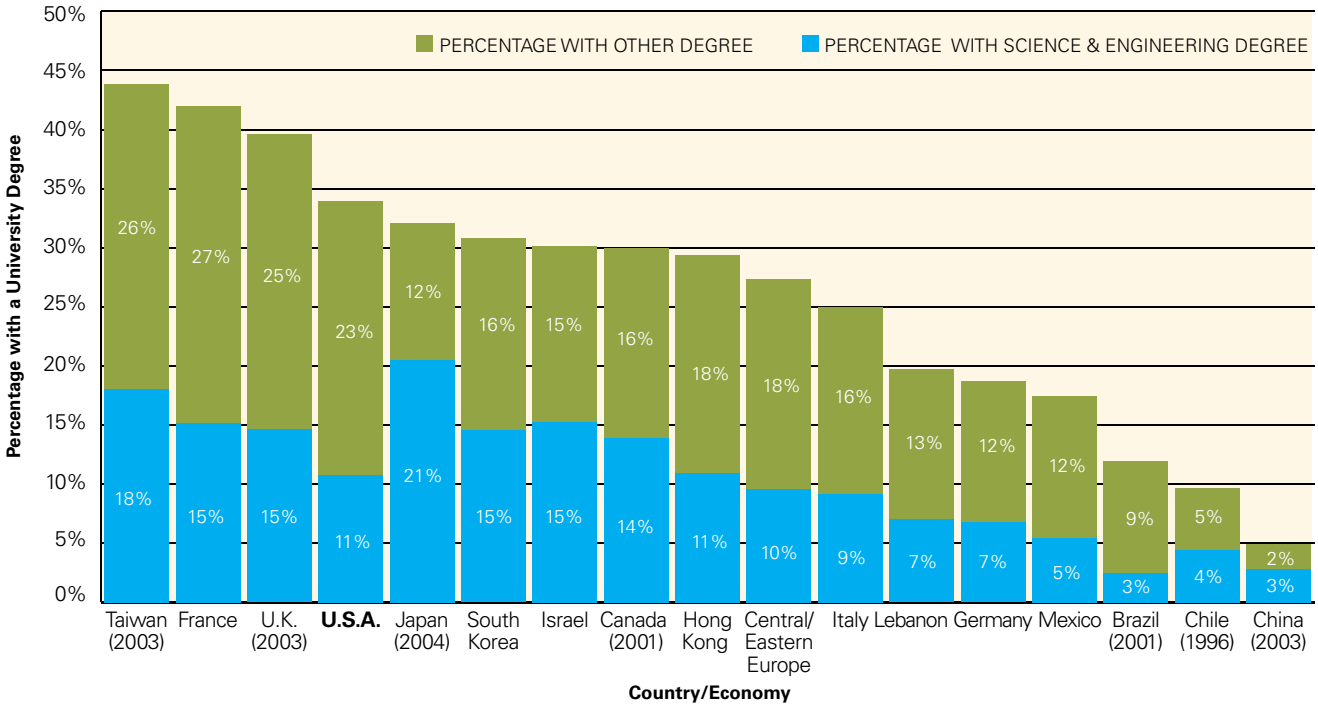
Note: Enrollment rates are the percentages of 1999 high school graduates who were enrolled in a postsecondary institution in the 1999–2000 school year.
Source: Snyder et al., 2006, Table 183.

Adults in nonmetropolitan areas have lower educational attainment than those in urban areas. Young people who graduate from rural high schools are less likely than others to enroll in college, and if they do enroll, they are more likely to attend technical colleges and less likely to attend two-year and particularly four-year colleges.

- White adults in metropolitan areas are more likely to be high school graduates than blacks and Hispanics in metropolitan areas, but blacks in metropolitan areas are as likely as whites in nonmetropolitan areas to be college graduates.
- Within racial/ethnic groups, people in nonmetropolitan areas are less likely to have graduated from high school, less likely to have attended college, and less likely to have graduated from college than their urban counterparts.
- From 1999 to 2000, 77 percent of private high school graduates enrolled in four-year colleges, compared to 42 percent of public high school graduates.
- As the proportion of minority students in a public high school increases, enrollment rates in four-year colleges decrease, but overall college enrollment rates do not differ significantly.

International Comparisons: Science and Engineering Degrees

Figure 2.12: Percentage of Individuals Age 24 with First University Degrees in Science and Engineering and Other Fields, by Selected Region and Country/Economy, 2002 or Most Recent Year



Source: National Science Foundation (NSF), 2006, Appendix Table 2-37.

Relative to other countries, the United States ranks much higher in terms of the percentage of 24-year-olds who have earned university degrees than in terms of the percentage of those degrees that are in science and engineering fields.

- Thirty-four percent of 24-year-olds in the United States have university degrees, compared to 44 percent in Taiwan, 42 percent in France, and 40 percent in the United Kingdom. The numbers for the United States are similar to those for Japan, South Korea, Israel, and Canada.
- Eleven percent of 24-year-olds in the United States have university degrees in science or engineering, compared to 21 percent in Japan, 18 percent in Taiwan, and 14 to 15 percent in France, the United Kingdom, South Korea, Israel, and Canada. In China, Mexico, Brazil, and Chile, no more than 5 percent of 24-year-olds hold degrees in science or engineering.
- Thirty-two percent of the university degrees held by 24-year-olds in the United States are in science and engineering fields, compared to 64 percent in Japan, 57 percent in China, and 51 percent in Israel. Brazil and Mexico have lower proportions of degrees in these fields.

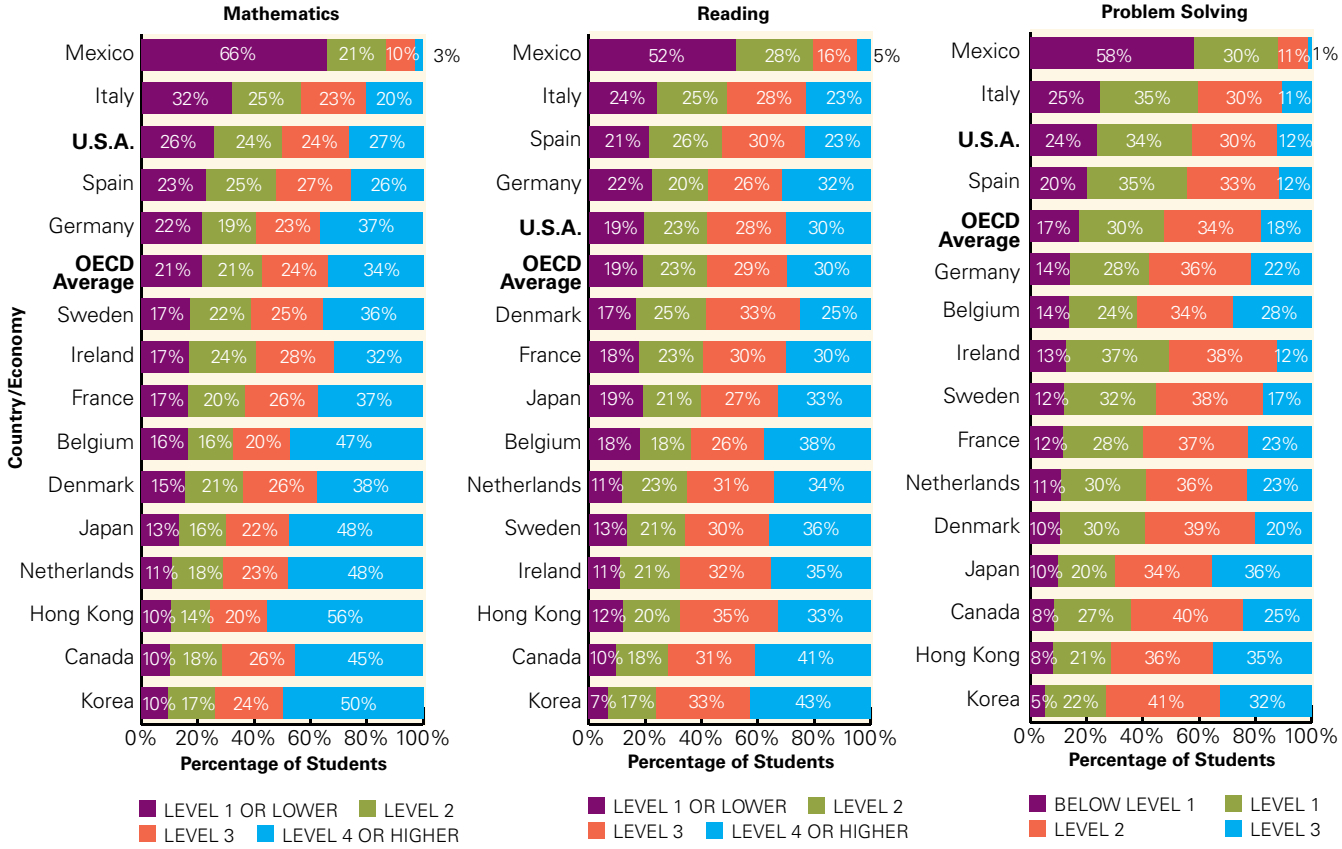
Percentage of First University Degrees Awarded in Science and Engineering

Japan (2004)	64%	Taiwan (2003)	41%	Lebanon	36%
China (2003)	57%	Hong Kong	37%	Central/Eastern Europe	35%
Israel	51%	United Kingdom (2003)	37%	**United States**	**32%**
South Korea	47%	Italy	37%	Mexico	31%
Canada (2001)	46%	France	36%	Brazil (2001)	21%
Chile (1996)	46%	Germany	36%		

Source: NSF, 2006, Appendix Table 2-37.

International Comparisons: Achievement Levels of 15-Year-Olds

Figure 2.13: Academic Achievement Levels of Students Age 15, by Selected Country/Economy, 2003



Notes: Hong Kong is not an Organisation for Economic Co-operation and Development (OECD) country/region. Percentages may not add up to 100 due to rounding.
Source: OECD, 2003.

International comparisons of achievement levels of high school students reveal that U.S. students are close to the average of other developed nations in reading, but are significantly below average in mathematics and problem solving.

- Twenty-six percent of U.S. students scored in the lowest category in math in 2003, compared to 21 percent in OECD countries overall. Scores were lower in Italy and Mexico, but in Korea, Canada, and Hong Kong, only 10 percent of 15-year-olds scored so low.
- Twenty-seven percent of U.S. students scored in the highest category in math, compared to 34 percent in OECD countries overall. There were fewer high scores in Spain, Italy, and Mexico, but in Korea and Hong Kong, half of the students performed this well.
- Twenty-four percent of U.S. students scored in the lowest category in problem solving in 2003, compared to 17 percent in OECD countries overall. In Korea, Hong Kong, Canada, and Japan, less than 10 percent of 15-year-olds scored in the lowest category. In Korea, Hong Kong, and Japan, over 30 percent scored in the highest category.
- U.S. reading scores were similar to the OECD average, with 19 percent scoring in the lowest category and 30 percent in the highest category in 2003. However, in Canada, only 10 percent of 15-year-olds scored in the lowest category and 41 percent scored in the highest category.

Also important:

The United States has a more diverse population than most other countries. In both mathematics and problem solving, white and Asian U.S. students scored as well as or better than the OECD average, while black and Hispanic students scored lower.

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Appendix A
Data Tables for Select Figures

Figure 1.1: Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2005

	Total Money Earnings	Estimated Federal Income Tax	Estimated Social Security and Medicare Taxes	Estimated State and Local Taxes	Total Estimated Taxes	Total Estimated After-Tax Income
Professional Degree	$100,000	$10,560	$7,030	$7,930	$25,500	$74,500
Doctoral Degree	79,400	7,421	6,074	6,357	19,900	59,500
Master's Degree	61,300	5,099	4,689	4,946	14,700	46,600
Bachelor's Degree	50,900	3,871	3,894	4,131	11,900	39,000
Associate Degree	40,600	2,673	3,106	3,314	9,100	31,500
Some College, No Degree	37,100	2,276	2,838	3,034	8,100	29,000
High School Graduate	31,500	1,651	2,410	2,588	6,600	24,900
Not a High School Graduate	23,400	885	1,790	1,953	4,600	18,800

Note: Total money earnings, total estimated taxes, and total estimated after-tax income are rounded to the nearest $100.
Sources: U.S. Census Bureau, 2006, PINC-03; Internal Revenue Service, 2006; McIntyre et al., 2003; calculations by the authors.

Figure 1.2: Expected Lifetime Earnings Relative to High School Graduates, by Education Level

	Total Lifetime Earnings	Total Earnings Relative to High School Graduates	Present Value of Total Lifetime Earnings (3% Discount Rate)	Present Value Earnings Relative to HS Graduates (3% Discount Rate)
Not a High School Graduate	$941,370	0.74	$551,462	0.75
High School Graduate	1,266,730	1.00	738,609	1.00
Some College, No Degree	1,518,300	1.20	878,259	1.19
Associate Degree	1,620,730	1.28	943,181	1.28
Bachelor's Degree	2,054,380	1.62	1,189,836	1.61
Master's Degree	2,401,565	1.90	1,427,392	1.93
Doctoral Degree	3,073,240	2.43	1,748,716	2.37
Professional Degree	3,706,910	2.93	2,123,309	2.87
Bachelor's Degree or Higher	2,284,110	1.80	1,312,316	1.78

Sources: U.S. Census Bureau, 2006, PINC-03; calculations by the authors.

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, 2005

	Females			Males		
	25th Percentile	Median	75th Percentile	25th Percentile	Median	75th Percentile
Not a High School Graduate	$13,600	$18,400	$25,700	$18,300	$25,500	$35,800
High School Graduate	19,100	26,300	36,300	25,200	36,300	51,100
Some College, No Degree	22,600	31,400	42,500	30,400	42,400	61,400
Associate Degree	24,900	33,900	47,200	32,400	47,200	64,200
Bachelor's Degree	31,100	42,200	61,500	39,400	60,000	90,400
Master's Degree	40,100	51,400	71,200	50,300	75,000	105,000
Doctoral Degree	50,200	66,900	100,000	59,200	85,900	130,000
Professional Degree	50,400	80,500	125,000	66,800	100,000	197,000

Sources: U.S. Census Bureau, 2006, PINC-03; calculations by the authors.

Figure 1.3: Estimated Cumulative Earnings Net of Loan Repayment for Tuition and Fees, by Education Level

	High School Diploma			Associate Degree			Bachelor's Degree		
Age	Median Annual Earnings	Present Value[1] (PV) of Annual Earnings	PV[1] of Cumulative Earnings	Median Annual Earnings[2]	PV[1] of Annual Earnings[3]	PV[1] of Cumulative Earnings	Median Annual Earnings[4]	PV[1] of Annual Earnings[5]	PV[1] of Cumulative Earnings
18	$19,882	$19,882	$19,882	$(2,182)	$0	$0	$(5,492)	$0	$0
19	19,882	19,303	39,185	(2,291)	0	0	(5,767)	0	0
20	19,882	18,741	57,925	24,080	22,096	22,096	(6,055)	0	0
21	19,882	18,195	76,120	24,080	21,453	43,549	(6,358)	0	0
22	19,882	17,665	93,785	24,080	20,828	64,377	26,547	20,385	20,385
23	19,882	17,150	110,935	24,080	20,221	84,599	26,547	19,791	40,177
24	19,882	16,651	127,586	24,080	19,632	104,231	26,547	19,215	59,391
25	27,713	22,533	150,119	35,054	27,983	132,214	41,593	30,889	90,281
26	27,713	21,877	171,996	35,054	27,168	159,383	41,593	29,989	120,270
27	27,713	21,240	193,235	35,054	26,377	185,759	41,593	29,116	149,386
28	27,713	20,621	213,857	35,054	25,609	211,368	41,593	28,268	177,654
29	27,713	20,020	233,877	35,054	24,863	236,231	41,593	27,445	205,099
30	27,713	19,437	253,314	35,054	24,586	260,817	41,593	26,645	231,744
31	27,713	18,871	272,186	35,054	23,870	284,687	41,593	25,869	257,613
32	27,713	18,322	290,507	35,054	23,175	307,862	41,593	27,498	285,111
33	27,713	17,788	308,295	35,054	22,500	330,362	41,593	26,697	311,808
34	27,713	17,270	325,565	35,054	21,844	352,206	41,593	25,919	337,727
35	32,220	19,494	345,059	41,188	24,919	377,125	54,803	33,157	370,884
36	32,220	18,926	363,984	41,188	24,194	401,319	54,803	32,191	403,075
37	32,220	18,375	382,359	41,188	23,489	424,808	54,803	31,253	434,328
38	32,220	17,839	400,198	41,188	22,805	447,613	54,803	30,343	464,672
39	32,220	17,320	417,518	41,188	22,141	469,753	54,803	29,459	494,131
40	32,220	16,815	434,334	41,188	21,496	491,249	54,803	28,601	522,732
41	32,220	16,326	450,659	41,188	20,870	512,119	54,803	27,768	550,500
42	32,220	15,850	466,509	41,188	20,262	532,380	54,803	26,959	577,460
43	32,220	15,388	481,898	41,188	19,672	552,052	54,803	26,174	603,634
44	32,220	14,940	496,838	41,188	19,099	571,151	54,803	25,412	629,046
45	34,455	15,511	512,349	44,366	19,973	591,124	57,358	25,822	654,868
46	34,455	15,059	527,409	44,366	19,391	610,515	57,358	25,070	679,938
47	34,455	14,621	542,030	44,366	18,827	629,342	57,358	24,340	704,277
48	34,455	14,195	556,225	44,366	18,278	647,620	57,358	23,631	727,908
49	34,455	13,782	570,006	44,366	17,746	665,366	57,358	22,942	750,851
50	34,455	13,380	583,386	44,366	17,229	682,595	57,358	22,274	773,125
51	34,455	12,990	596,377	44,366	16,727	699,322	57,358	21,625	794,750
52	34,455	12,612	608,989	44,366	16,240	715,562	57,358	20,996	815,746
53	34,455	12,245	621,234	44,366	15,767	731,329	57,358	20,384	836,130
54	34,455	11,888	633,122	44,366	15,308	746,636	57,358	19,790	855,920
55	32,285	10,815	643,937	41,465	13,890	760,527	51,684	17,313	873,234
56	32,285	10,500	654,437	41,465	13,486	774,012	51,684	16,809	890,043
57	32,285	10,194	664,631	41,465	13,093	787,105	51,684	16,319	906,362
58	32,285	9,897	674,528	41,465	12,711	799,816	51,684	15,844	922,206
59	32,285	9,609	684,137	41,465	12,341	812,157	51,684	15,383	937,589
60	32,285	9,329	693,466	41,465	11,982	824,139	51,684	14,935	952,523
61	32,285	9,057	702,523	41,465	11,633	835,772	51,684	14,500	967,023
62	32,285	8,794	711,317	41,465	11,294	847,066	51,684	14,077	981,100
63	32,285	8,537	719,854	41,465	10,965	858,031	51,684	13,667	994,767
64	32,285	8,289	728,143	41,465	10,646	868,676	51,684	13,269	1,008,036

1. Present values are calculated using a 3 percent discount rate.
2. Numbers for ages 18–19 are average annual tuition and fees at public two-year colleges, which are assumed to increase by 5 percent per year.
3. Loans are assumed to be paid off from ages 20–29. Annual earnings are reduced by the amount of loan payments.
4. Numbers for ages 18–21 are average annual tuition and fees at public four-year institutions, which are assumed to increase by 5 percent per year.
5. Loans are assumed to be paid off from ages 22–31. Annual earnings are reduced by the amount of loan payments.

Sources: U.S. Census Bureau, 2006, PINC-03, PINC-04; The College Board, 2005; calculations by the authors.

Appendix B
Technical Notes

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

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.

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.

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

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

Figure 1.1: Estimates of state and local tax payments are based on U.S. averages reported by the Institute for Taxation and Economic Policy (2003). Federal income taxes are based on IRS (2006) data for average 2004 tax payments based on AGI categories. Tax burdens for each income level are imputed based on the payments reported for income brackets. Social Security and Medicare taxes are based on the federal formula in effect in 2005.

Figure 1.2: No allowance is made for the shorter work life resulting from the time spent in college and out of the labor force.

Figure 1.3: This calculation is based on 2005 median earnings levels. It assumes the college graduate is out of the labor force for four years, at ages 18–21, and borrows the entire 2005-06 average tuition and fees of $5,492 at a public four-year college and tuition and fees for the following years, assuming a 5 percent increase each year. Annual interest of 6.8 percent is assumed to accrue while the student is in school and during repayment. Estimates are based on a standard 10-year student loan repayment plan. Tuition payments and earnings are discounted at a 3 percent rate, compounded for every year beyond age 18. This discount rate represents real interest, since all earnings are in 2005 dollars.

Figure 1.5: Twenty-fifth and 75th percentiles of income were imputed using the assumption that earners are evenly distributed within $2,500 income brackets. Percentile earnings over $100,000 were calculated using the *Current Population Survey* data accessed via Data Ferret on the U.S. Census Bureau Web site.

Figure 1.14a: Smoking data through 2000 are based on a retrospective survey that asked respondents when they started and stopped smoking.

Figure 1.20: In the *2004 Citizenship Module of the General Social Survey*, respondents were asked, on a 1 to 7 scale (1 being "not at all important" and 7 being "very important"), how important it was to try to understand the reasoning behind other opinions. In our analysis, we grouped responses 1–3 as "not important", 4–5 as "neutral", and 6–7 as "important."

Figure 2.2: The *Digest of Education Statistics* reports a three-year moving average for the enrollment rates of Hispanics. We report three-year moving average enrollment rates for whites, blacks, and Hispanics. The enrollment rate for each year is the average of the actual enrollment rates for the year in question, the year before, and the year after. For the final year, the rate reported is the average of the year in question and the preceding year.

Figure 2.5: Almost half of all college students are classified as independent because they meet at least one of the following criteria: are age 24 or older, are married, have dependents, are veterans, are orphans, or are wards of the court. These students are not included in this analysis because parental income is not available for them.

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