

Education Pays 2004

Trends in Higher Education Series

The Benefits of Higher Education for Individuals and Society

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Revised Edition, 2005



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Connecting Students to College Success**

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Foreword

The College Board is pleased to introduce a new publication to accompany our annual editions of *Trends in Student Aid* and *Trends in College Pricing*. *Education Pays: The Benefits of Higher Education for Individuals and Society* documents many of the benefits generated by higher education. It also describes differences in educational attainment among various groups within American society. Most of the data contained herein can be found in other sources. Our intent is to present the information in a clear and coherent manner, enhancing 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 was coauthored by the project managers for *Trends in Student Aid* and *Trends in College Pricing*. Sandy Baum is Senior Policy Analyst at the College Board and Professor of Economics at Skidmore College. Kathleen Payea is a consultant to the College Board. We are also grateful to the members of the *Trends* advisory committee for their helpful contributions to this effort.



Gaston Caperton
President

Introduction

We generally think of college education in personal terms. 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.

The broader societal benefits of investment in higher education receive less attention, but are fundamental to the well-being of our nation. State governments appropriate billions of dollars per 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. Nonetheless, awareness of the ways in which we all benefit when educational opportunities increase is limited. It is impossible to evaluate the appropriate level of either private or public investment in higher education without a more concrete sense of the individual and societal benefits, in addition to the costs.

Is the personal and public investment in higher education worth the cost? Is the investment adequate?

This report examines the benefits to individuals and to society from our investment in higher education. It also documents the uneven participation rates in higher education across different segments of U.S. society.

The price tag on college makes frequent headlines, but the price tag on shortfalls in participation and success in

higher education does not. Many people have a general sense that higher levels of education are associated with higher earnings and that college is a prerequisite for a comfortable middle-class lifestyle. It follows logically that college graduates contribute more than others to the public treasury and also contribute in other important ways to social well-being. Similarly, it is no surprise that higher education reduces the probability of being dependent on society for support. Strengthening these general concepts with specific information can increase our understanding of the contributions of higher education to both the equity and the efficiency of our society.

In the pages that follow, we describe a variety of the differences in the earnings, lifestyles, and behavior patterns corresponding to differences in levels of education. 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. The criminal justice system might be an even more obvious example. The impact of higher education on both economic opportunities and general attitudes certainly contributes to the lower incarceration rates of people with college experience. But people who are convicted of crimes before graduating from high school are obviously less likely to go to college, and the characteristics and life circumstances that make people more prone to criminal activity likely make them less well positioned for educational achievement.

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 levels of education. In general, while simple descriptions of correlations may slightly overstate the effects, they accurately represent the powerful impact of higher education on individuals and on society. Although these patterns must be interpreted with caution, they provide a compelling picture of the value of our investment in higher education.

Another caveat necessary to the accurate interpretation of the information provided here is that 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 less easily quantified outcomes of education. Rather, we hope that a more thorough and coherent view of the subset 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.

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, 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 lower demands on social support programs, the lower rates of incarceration, 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 30 years, 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.

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 inadequate financial resources create barriers to college participation. There are significant differences in college enrollment rates among high school graduates with very high test scores, depending on their family incomes. In addition, there is considerable variation in the postsecondary enrollment patterns of high school graduates with different family incomes, even among those whose parents have similar educational backgrounds.

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 levels of achievement are significantly more likely to go to college than others, as are those whose parents have high levels of educational attainment.

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 levels of education similar to those of the groups who are most successful by this measure, more individuals would enjoy the benefits described in this report. Moreover, society would function more efficiently, enjoying a variety of shared benefits, including those represented in this report.

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.

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 as a matter of public policy at the federal, state, and local levels.

This report presents detailed evidence of both 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.

Benefits to individuals include:

- There is a correlation between higher levels of education and higher earnings for all racial/ethnic groups and for both men and women.
- The income gap between high school graduates and college graduates has increased significantly over time. The earnings benefit to the average college graduate is high enough for graduates to recoup both the cost of full tuition and fees and earnings forgone during the college years in a relatively short period of time.
- Any college experience produces a measurable benefit when compared with no postsecondary education,

but the benefits of completing a bachelor's degree or higher are significantly greater.

As is the case for the individuals who participate, the benefits of higher education for society as a whole are both monetary and nonmonetary.

Societal benefits include:

- Higher levels of education correspond to lower levels of unemployment and poverty, 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.
- College graduates have lower smoking rates, more positive perceptions of personal health, and lower incarceration rates than individuals who have not graduated from college.
- Higher levels of education are correlated with higher levels of civic participation, including volunteer work, voting, and blood donation.

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.

Observed patterns of postsecondary participation include:

- Among students with top test scores, virtually all students in the top half of the family income distribution enroll in postsecondary education, but only about 80 percent of those in the lowest fifth of the income distribution continue their education after high school.
- Income differences tend to have a smaller impact on college enrollment rates of high school graduates with high test scores than on those with lower test scores.
- Participation in higher education also varies among racial/ethnic groups. Whites and Asians of traditional college age are more likely than their black and Hispanic peers to enroll in higher education institutions. Furthermore, while the gap between blacks and whites has declined, the gap between white and Hispanic high school graduates has grown in the last decade.
- 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 noncollege graduates. After they graduate from high school, students whose parents attended college are significantly more likely than those with similar incomes whose parents do not have a college education to go to college themselves.

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, for those from all family backgrounds. It also delivers a high rate of return for society. We all benefit from both the public and the private investments in higher education.

This report would not have been possible without the support and hard work of many individuals and organizations. We would like to express our gratitude for all of the assistance we received. The Trustees of the College Board had the initial idea for a project relating to the benefits of higher education and the staff of the College Board provided the necessary support. Members of the Trends Advisory Committee gave us advice and suggestions at all stages of the project. We are grateful to the researchers who generously gave us permission to cite and reproduce their findings. We also appreciate the contributions of the following individuals at the College Board: Andre Bell, Kathleen Little, and Anne Sturtevant of the College and University Enrollment Services Division; Thomas Rudin and Micah Haskell-Hoehl of the Washington Office; William Fogarty, Erin Thomas, Meredith Haber, and the staff of the Creative Services Division.

Part 1:

Individual and Societal Benefits of Higher Education

Much of the benefit of higher education accrues to individual students and their families. For members of all demographic groups, average earnings increase measurably with higher levels of education. Over their working lives, typical college graduates earn about 73 percent more than typical high school graduates, and those with advanced degrees earn two to three times as much as high school graduates. 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 find it necessary to 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.

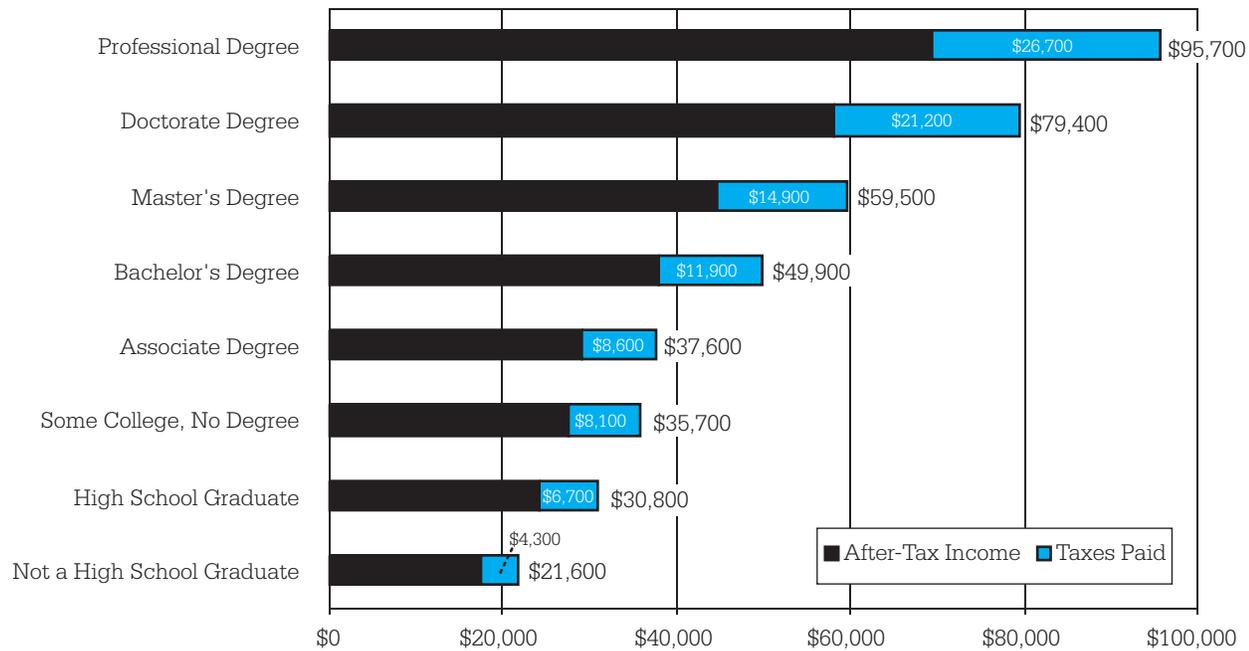
Society as a whole also enjoys a financial return on the investment in higher education. In addition to widespread productivity increases, the higher earnings of educated workers generate higher tax payments at the local, state, and federal levels, and consistent productive employment reduces dependence on public income-transfer programs. Because the individual outcomes affect others, it is not possible to neatly separate the benefits to individuals from those shared by society as a whole. For example, all workers benefit from the increased productivity of their coworkers, and unemployment causes the most damage to those who are out of a job, but also results in a loss to the entire economy.

In addition to 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. Moreover, the economic advantages already mentioned have broader implications. For example, in addition to increasing material standards of living, reduced poverty improves the overall well-being of the population, and the psychological implications of unemployment are significant. In addition, adults with higher levels of education are more likely to engage in organized volunteer work, to vote, and to donate blood; they are more likely to be in good health and less likely to smoke; and they are less likely to be incarcerated. The young children of adults with higher levels of education are read to more frequently than other children; they have higher cognitive skill levels and better concentration than other children. All of these areas affect social expenditures, in addition to general well-being.

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: Median Earnings and Tax Payments by Level of Education, 2003



Notes: Includes full-time year-round workers age 25 and older.

Tax payments are based on 2002 tax rates and do not incorporate the 2003 federal income tax reductions.

Source: U.S. Census Bureau, 2004, PINC-03; Internal Revenue Service, 2003, Table 3; McIntyre, et al, 2003; calculations by the authors.

The bars in this graph show median earnings at each level of education. The blue segments and their dollar amount labels represent the average federal, state, and local taxes paid at these income levels. The black segments show after-tax income.

Both average earnings and average tax payments are higher for people with higher levels of education.

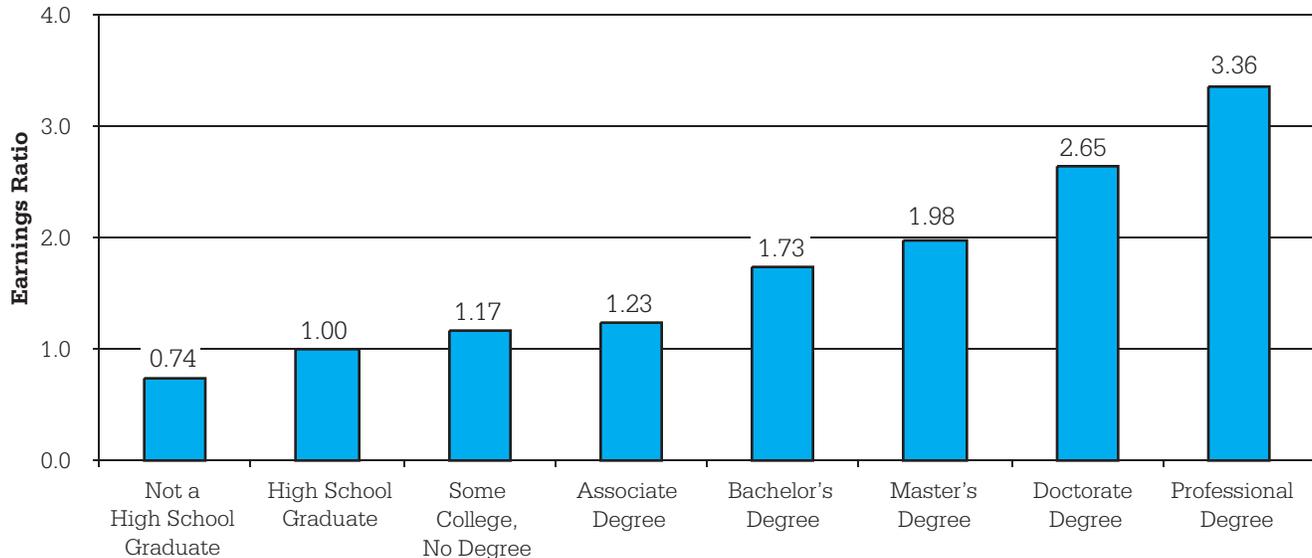
- In 2003, the average full-time year-round worker in the United States with a four-year college degree earned \$49,900, 62 percent more than the \$30,800 earned by the average full-time year-round worker with only a high school diploma.
- Those with master's degrees earned almost twice as much, and 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 16 percent higher than those for high school graduates, and adults with associate degrees earned 22 percent more than high school graduates.
- The average college graduate working full-time year-round pays over 100 percent more in federal income taxes and about 78 percent more in total federal, state, and local taxes than the average high school graduate.
- Those who earned professional degrees pay almost \$20,000 a year more in total taxes than high school graduates.

Also important:

- All of the differences in earnings reported here may not be attributable to level of education. Education credentials are correlated with a variety of other factors 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. (Ashenfelter, 1999; Card, 1999; Deschenes, 2001)

Lifetime Earnings

Figure 2: Expected Lifetime Earnings Relative to High School Graduates, by Education Level



Notes: Based on sum of mean annual 2003 earnings from ages 25 to 64. Future earnings are discounted using a 5 percent annual rate.

Source: Day and Newburger, 2002; calculations by the authors.

The height of each bar in this graph represents the ratio of average lifetime earnings at the specified education level to average lifetime earnings of high school graduates.

The typical bachelor's degree recipient can expect to earn about 73 percent more over a 40-year working life than the typical high school graduate earns over the same time period.

- Average lifetime earnings for individuals with associate degrees are almost 25 percent higher than average lifetime earnings for high school graduates.
- Average lifetime earnings for doctoral degree recipients are between two and a half and three times as high as average lifetime earnings for high school graduates and average lifetime earnings for professional degree recipients are even higher.

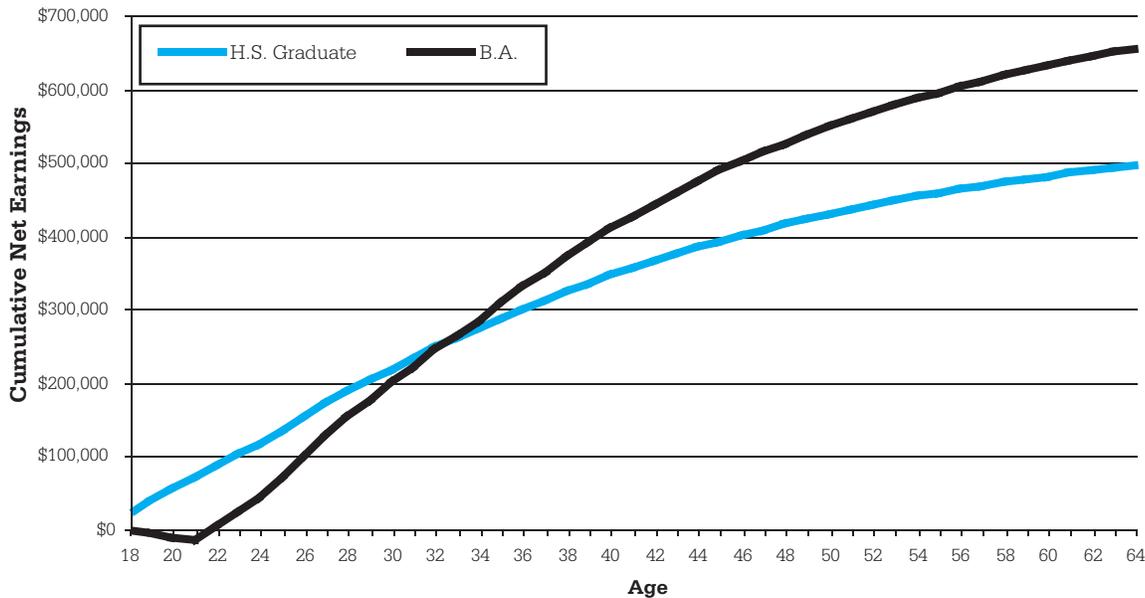
Also important:

- Census Bureau estimates suggest that in terms of today's dollars, college graduates will earn an average of about \$2.5 million, or about \$1 million dollars more over their working lives than high school graduates. Including those graduates who go on to earn advanced degrees increases the earnings premium to about \$1.4 million. (Appendix data)
- 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. Including advanced-degree holders increases the lifetime earnings premium to about \$570,000.¹ (Appendix data)

¹ Based on a 5 percent annual discount rate in order to account for the reality that dollars received in the future are not worth as much as those received today.

Earnings Premium Relative to Costs of Education

Figure 3: Estimated Cumulative Earnings Net of College Costs



Notes: Based on median 2003 earnings for high school graduates and college graduates at each age and discounted using a 5 percent rate. Earnings for B.A. recipients include only those with no advanced degree.

Sources: U.S. Census Bureau, 2004, PINC-03, PINC-04; The College Board (2003); calculations by the authors.

The blue line shows the cumulative earnings at each age for the average high school graduate who enters the workforce full-time at the age of 18. The black line shows the cumulative earnings at each age for the average college graduate who enters the workforce at the age of 22, after subtracting average tuition and fees paid over four years at a public college or university. In both cases, dollar amounts beyond the age of 18 are discounted by an annual rate of 5 percent to account for the reality that dollars received in the future are not worth as much as those received today.

By the age of 33, the typical college graduate who enrolled at age 18 has earned enough to compensate for both tuition and fees at the average public four-year institution and earnings forgone during the college years.

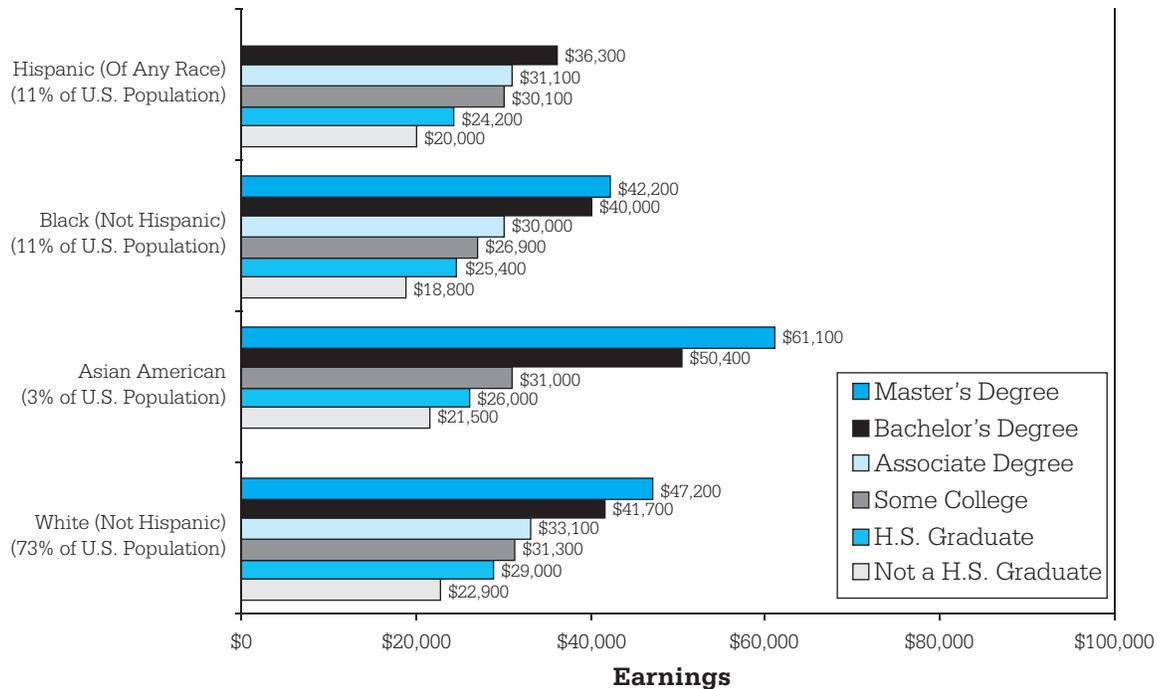
- Based on 2003 median earnings at each age level for high school graduates and for college graduates, at age 33, in the twelfth year of full-time work, the value of the cumulative earnings of the median earner with a bachelor’s degree surpasses the value of the sum of four years of tuition at the 2003 level of \$4,694 and the 16 years of earnings of those who entered the workforce with a high school diploma at the age of 18.
- Each remaining year of work adds to the cumulative financial benefit of a college 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 the age of 40.
- If the calculation of the value of cumulative earnings is based on a simple sum of annual earnings without taking account of the lesser value of earnings in the future, the net total earnings of the public college graduate surpass those of the median high school graduate at age 30 and the net total earnings of the private college graduate surpass those of the high school graduate at age 33.
- According to Census data, the average annual earnings for college graduates between the ages of 25 and 34 are \$14,700 higher than the average earnings for high school graduates, over three times the annual tuition at a four-year public college in 2003-04.

Earnings: Education Level and Race/Ethnicity

Figure 4: Median Earnings by Race/Ethnicity and Education Level, 2003: Ages 25–34



Notes: Includes full-time year-round workers ages 25–34.

Data for the professional and Ph.D. categories are not reported because of insufficient cell size for racial/ethnic groups.

Income for Asian Americans with A.A. degrees and for Hispanics with M.A. degrees is not reported because of small sample sizes.

Source: U.S. Census Bureau, 2004, PINC-03.

For all racial and ethnic groups, higher levels of education correspond to higher incomes.

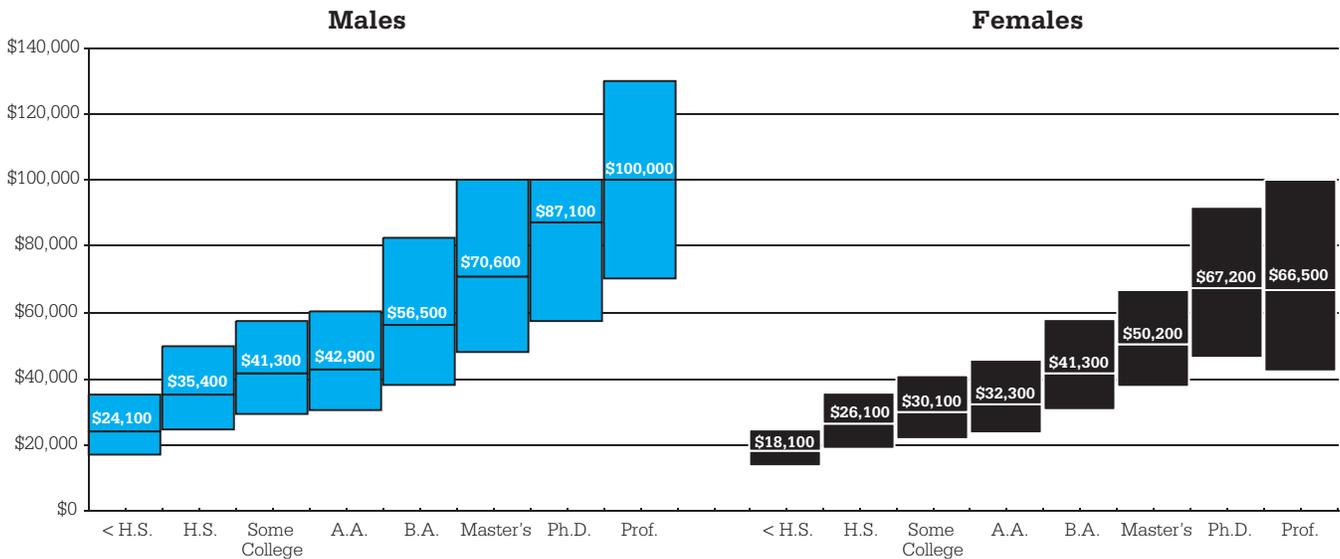
- Among 25- to 34-year-old full-time year-round workers, the typical white, Hispanic, and black college graduates earn about 60 percent more than typical high school graduates from the same racial/ethnic groups. The \$24,400 difference in median earnings between Asian American high school graduates and college graduates represents a premium of over 80 percent.

Also important:

- The earnings premium reported here is for full-time year-round workers ages 25–34. The proportionate difference in earnings between high school and college graduates within racial/ethnic groups is generally larger among older age groups.
- For example, in all racial/ethnic groups, median earnings for people ages 55 to 64 with a B.A. or higher degree are more than twice as high as median earnings for high school graduates. (U.S. Census Bureau, 2004, PINC-04)

Earnings: Education Level and Gender

Figure 5: Earnings by Gender and Education Level, 2003: 25th Percentile, Median, and 75th Percentile



Note: Includes full-time year-round workers age 25 and older.

Source: U.S. Census Bureau, 2004, PINC-03.

This graph shows earnings by education level separately for male and female full-time year-round workers age 25 and older. The bottom of each bar shows the 25th percentile. Twenty-five percent of the people in the group earn less than this amount. The line across the bar and the dollar figures represent median earnings for the group. The top of the bar shows the 75th percentile. Twenty-five 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.

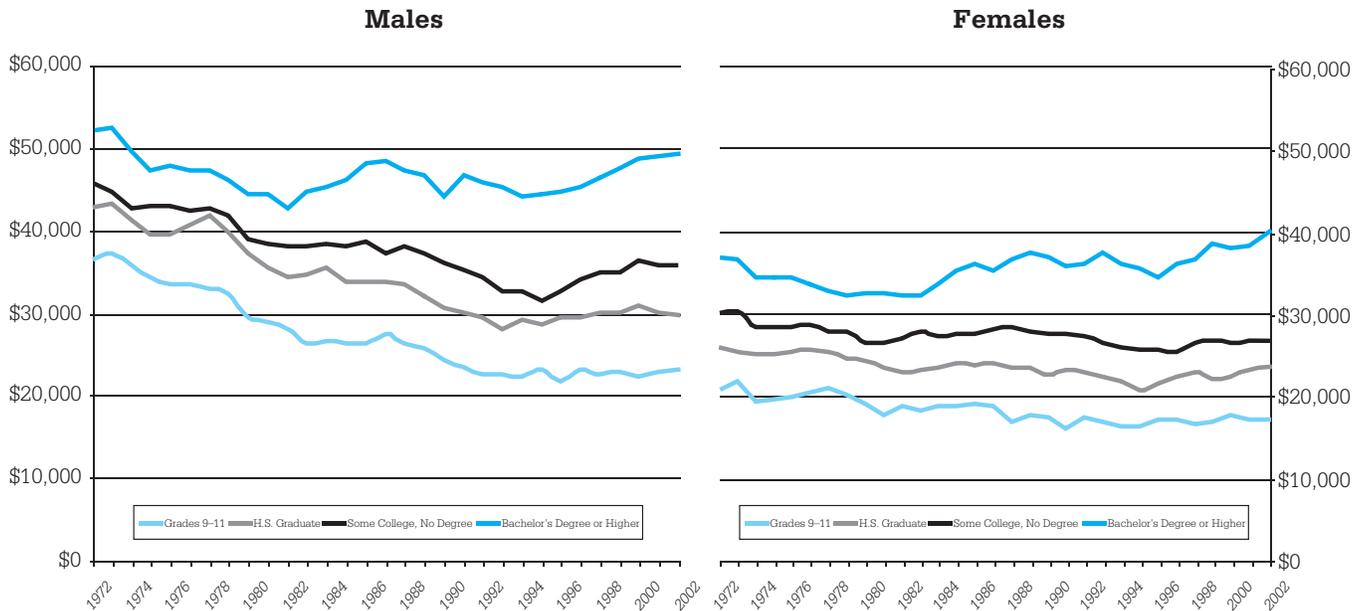
- Among male high school graduates working full time year-round, a quarter earned less than \$24,400 and a quarter earned more than \$50,000. For male four-year college graduates, the range of earnings for the middle 50 percent was from \$38,000 to \$82,300.
- Among female high school graduates working full time year-round, a quarter earned less than \$18,900 and a quarter earned more than \$35,600. The range of earnings for the middle 50 percent of female college graduates was from \$30,300 to \$57,900.
- Median earnings for male high school graduates were \$35,400 in 2003, compared to \$56,500 for male college graduates.
- Median earnings for women were significantly lower—\$26,100 for the typical high school graduate, compared to \$41,300 for female college graduates.
- Median earnings for male college graduates are 60 percent higher than the median for high school graduates.
- For women, there is a 58 percent premium for a four-year college degree.

Also important:

- Earnings differences between men and women working full time year-round 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: Education Level and Gender

Figure 6: Median Earnings of Males and Females Ages 25–34 by Education Level, 1972–2002 (Constant 2002 Dollars)



Note: Includes full-time full-year workers.

Source: NCES, 2004, Indicator 14 (based on U.S. Census Bureau, Current Population Survey, March Supplement, 1997–2003).

Earnings differentials by education level have increased over time for both men and women.

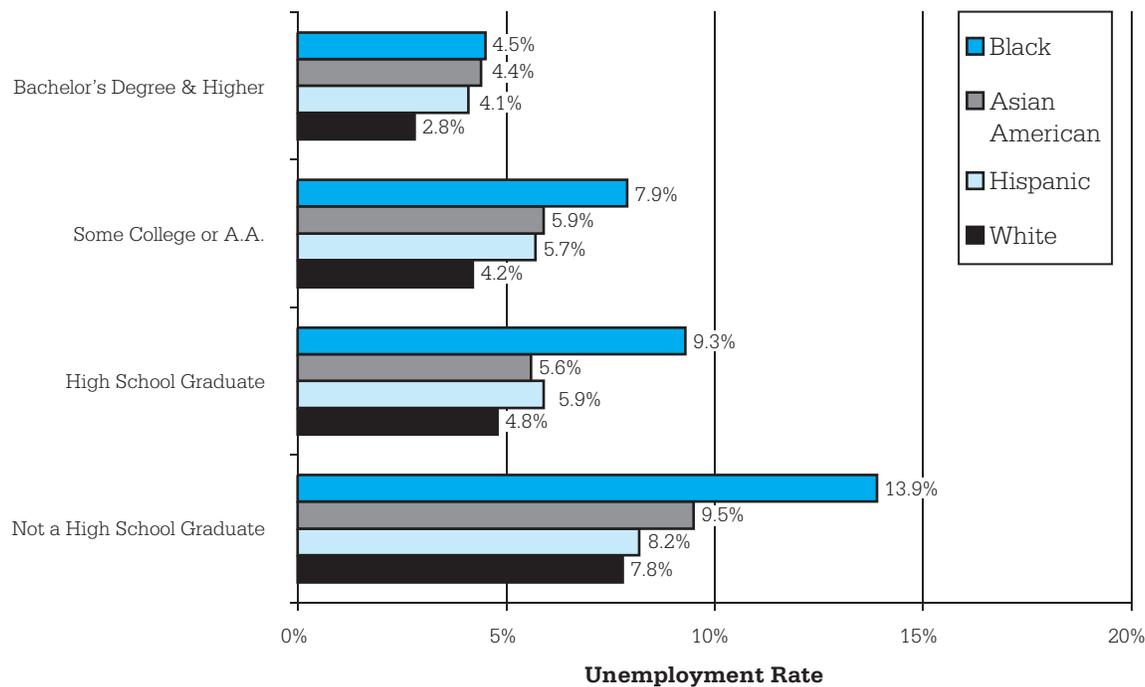
- Although inflation-adjusted earnings remained constant or increased only slightly over the past decade for most groups, median earnings of men and women with a four-year degree or higher increased by 7 percent and 11 percent respectively.
- Men at all levels of education had lower real earnings in 2002 than they did 30 years earlier. For men with a four-year degree or higher, the decline was only 6 percent, compared to declines ranging from 22 percent to 37 percent for men with lower levels of education.
- Women with four-year degrees or higher earned 9 percent more in inflation-adjusted dollars in 2002 than in 1972. Women with lower levels of education experienced declines in real earnings ranging from 10 percent to 17 percent.

Also important:

- Full-time male workers between the ages of 25 and 34 with four-year college or graduate degrees earned 22 percent more than those with only high school diplomas in 1972. The earnings differential between high school graduates and college graduates increased to 25 percent in 1982, 57 percent in 1992, and 65 percent in 2002.
- Full-time female workers between the ages of 25 and 34 with four-year college or graduate degrees earned 42 percent more than those with only high school diplomas in 1972. The earnings differential between high school graduates and college graduates increased to 41 percent in 1982, 59 percent in 1992, and 71 percent in 2002.
- The overall distribution of income in the United States has become more unequal over this time period. The share of total income received by families in the lowest 20 percent of the income distribution fell from 5.3 percent in 1980 to 4.6 percent in 1990 and 4.2 percent in 2001. The share of total income received by families in the highest 20 percent of the income distribution rose from 41.1 percent in 1980 to 44.3 percent in 1990 and 47.7 percent in 2001. (U.S. Census Bureau, 2003b, Table 688)

Unemployment

Figure 7: Unemployment Rates by Race/Ethnicity and Education Level, 2003



Note: Includes individuals 25 and older.

Source: *Monthly Labor Review*, 2004, Figure 12.

For all racial/ethnic groups, the unemployment rate falls as educational attainment increases. The differences are greatest for blacks.

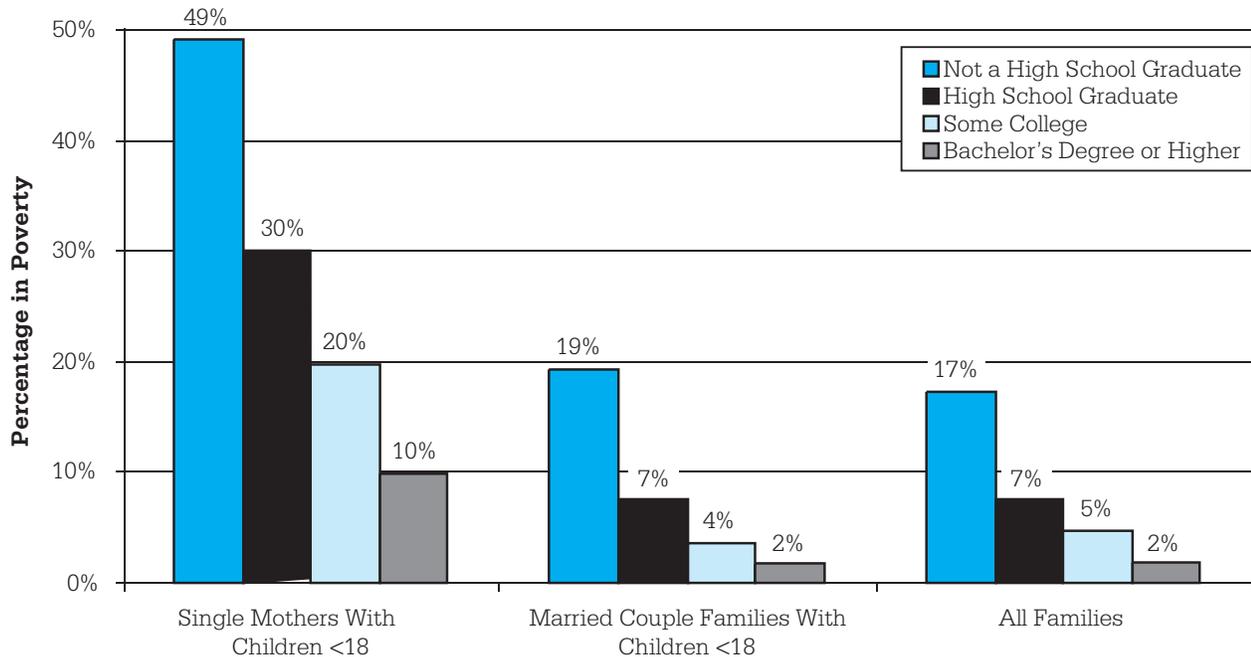
- The 4.5 percent unemployment rate for black college graduates is less than half the 9.3 percent unemployment rate for black high school graduates.
- The 2.8 percent unemployment rate for white college graduates is about 60 percent of the 4.8 percent unemployment rate for white high school graduates.
- The 4.1 percent unemployment rate for Hispanic college graduates is about 70 percent of the 5.9 percent unemployment rate for Hispanic high school graduates.
- The 4.4 percent unemployment rate for Asian American college graduates is about 80 percent of the 5.6 percent unemployment rate for Asian American high school graduates.
- The unemployment rate for blacks with some college or an associate degree is approximately equal to the unemployment rate for whites without a high school diploma.

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 8: Poverty Rates by Household Type and Education Level, 2001



Note: Families are defined as households with two or more related individuals.

Source: U.S. Census Bureau, 2001, Table 8.

Within each household type, the poverty rate for college graduates is about a third of the poverty rate for high school graduates.

- The poverty rate for single mother households with children under 18 is 49 percent for those who are not high school graduates, 30 percent for high school graduates, 20 percent for those with some college, and 10 percent for those with a bachelor's degree or higher.
- The poverty rate for married couple families with children is 19 percent for those who are not high school graduates, 7 percent for high school graduates, 4 percent for those with some college, and 2 percent for those with a bachelor's degree or higher.

Also important:

- The official poverty line in 2004 was \$19,157 for a four-person household with two children under age 18. (U.S. Census Bureau, 2004, Poverty Thresholds)
- Single mother households constitute 25 percent of U.S. families with children under 18 and 59 percent of these families below the poverty line.
- Single father households constitute 6 percent of U.S. families with children under 18 and 8 percent of these families below the poverty line.
- Married couple households constitute 69 percent of U.S. families with children under 18 and 33 percent of these families below the poverty line. (U.S. Census Bureau, 2004, POV-15)

Perceptions of Health

Figure 9a: Reporting Excellent or Very Good Health, by Income and Education Level, 2001

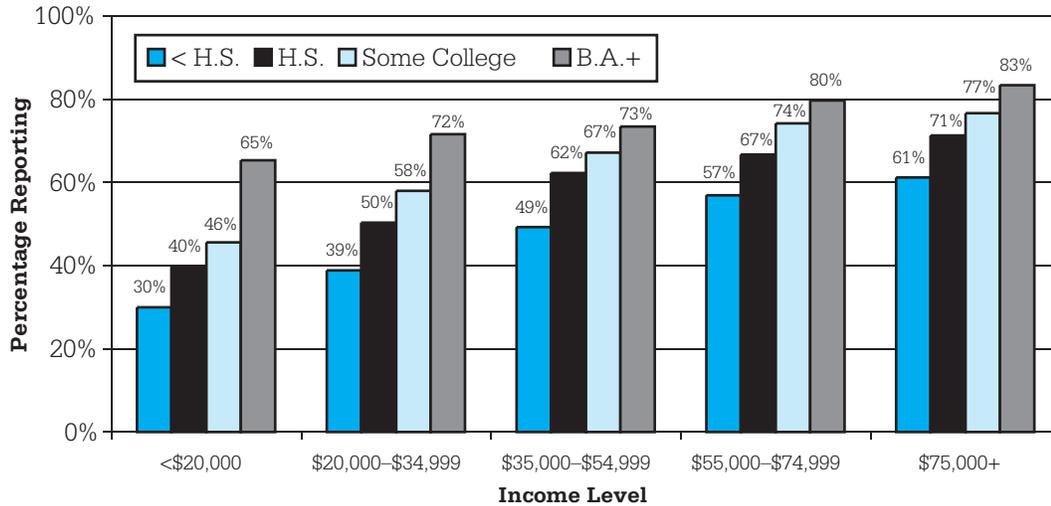
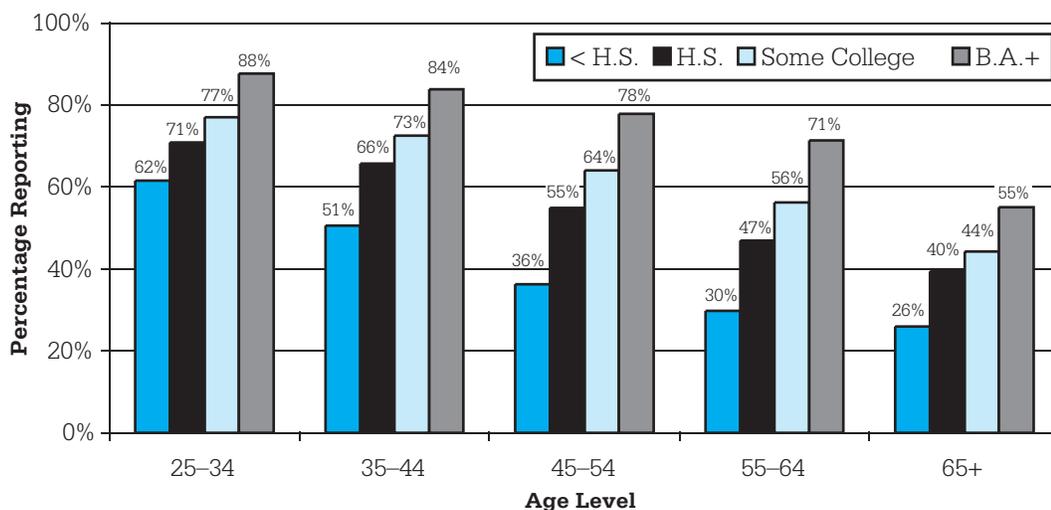


Figure 9b: Reporting Excellent or Very Good Health, by Age and Education Level, 2001



Note: Based on adults 25 and older.

Source: NCES, 2004, Indicator 12 (based on National Health Interview Survey, National Center for Health Statistics, 2001).

Improved perceptions of health are correlated with education levels, as well as with age and income levels.

- Within every income group, the percentage perceiving themselves as very healthy increases with higher levels of education. For example, 73 percent of college graduates with incomes between \$35,000 and \$54,999 report being in excellent or very good health, compared to 62 percent of high school graduates in the same income bracket.²
- Within every age group, the percentage perceiving themselves as very healthy increases with higher levels

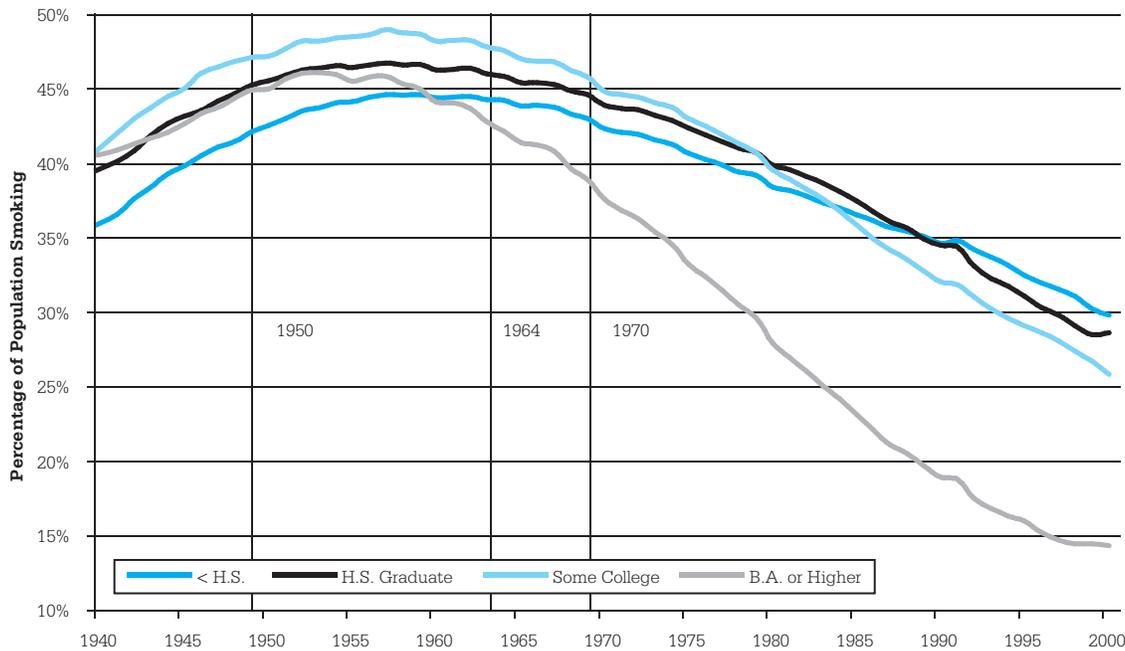
of educational attainment. For example, among those between 45 and 54, 78 percent of college graduates report being in excellent or very good health, compared to 55 percent of high school graduates.

- College graduates 65 and older are as likely as high school graduates ages 45–54 to report that they are in excellent or very good health.

² The high school graduates within this income bracket are likely to be older than the college graduates with the same incomes, since it typically takes more work experience for those with lower levels of education to reach this earnings level.

Smoking

Figure 10: Smoking by Education Level, 1940–2000



Source: De Walque, 2004.

Smoking rates declined much more rapidly among college graduates than among others when information about the risks of smoking became public.

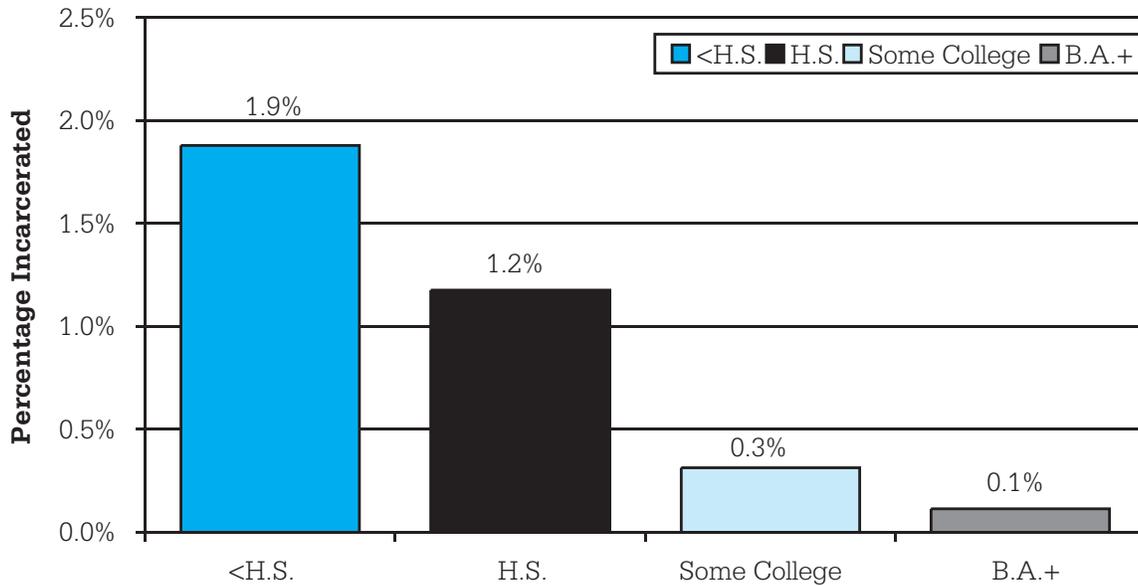
- Smoking rates in the U.S. increased in the 1940s, leveled off at about 45 percent in the 1950s, and began a steady decline in the late 1960s. College graduates were at least as likely as others to smoke before the medical consensus on the dangers of smoking became clear.
- By 1970, when information 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.
- In 2000, when only a quarter of the adult population reported smoking, 14 percent of college graduates and 28 percent of high school graduates smoked.

Also important:

- About 15 percent of Americans with a bachelor's degree and 10 percent of those with advanced degrees smoke, compared to a third of those with no college education and a quarter of those with some college. (Saad, 2002)
- Statistical analysis reveals that even after controlling for income, education level explains a significant portion of the difference in smoking patterns. (De Walque, 2004)

Incarceration Rates

Figure 11: Incarceration Rates by Education Level, 1997



Note: Including federal, state, and local prisons.

Source: Harlow, 2003.

The incarceration rate of adults with some college education is about one-quarter that for high school graduates.

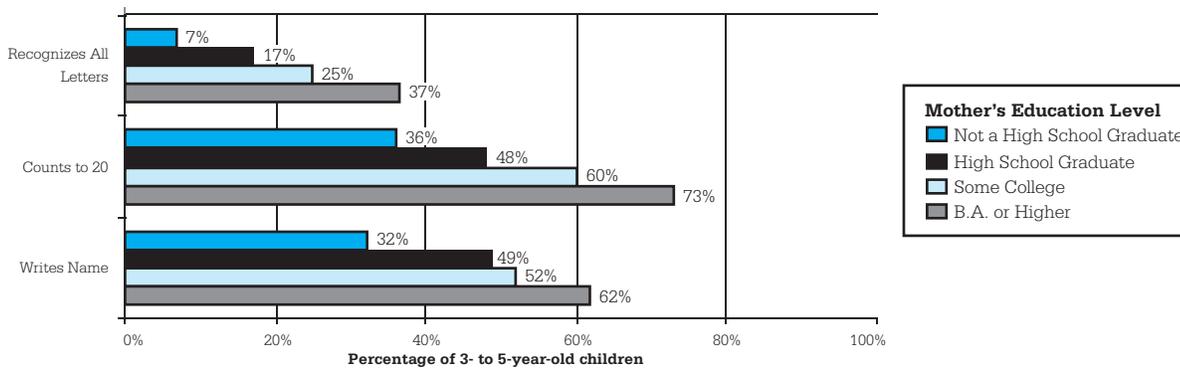
- Almost 2 percent of adults who had not graduated from high school were incarcerated in 1997, as were 1.2 percent of those with a high school diploma, but only 0.3 percent of adults with some college experience and 0.1 percent of college graduates were incarcerated.
- Many of the personal characteristics that increase academic success also reduce the tendency to commit crimes, so years of schooling are clearly not the only factor in these differences.

Also important:

- It costs about \$26,000 a year to maintain a prisoner. (Harlow, 2003; calculations by the authors)
- Public four-year colleges spend about \$25,000 per student per year. Public two-year institutions spend about \$9,000 per year per full-time equivalent student. (NCES, 2002c, Table 344)

School Readiness

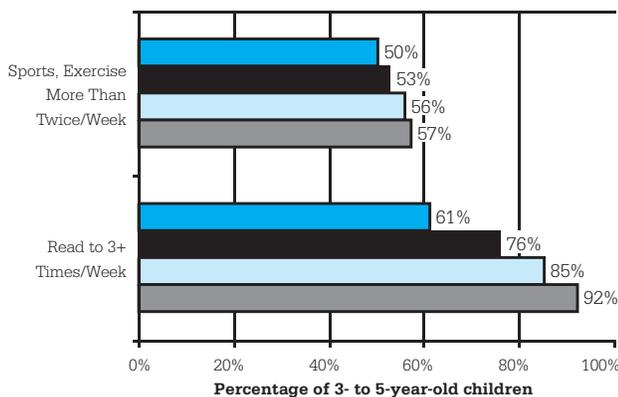
Figure 12a: Preschool Children’s Cognitive Skill Levels by Mother’s Education Level, 1999



Note: Based on children ages 3 to 5 not enrolled in kindergarten.

Source: U.S. Census Bureau, 2002a, Table 219 (based on National Education Household Survey).

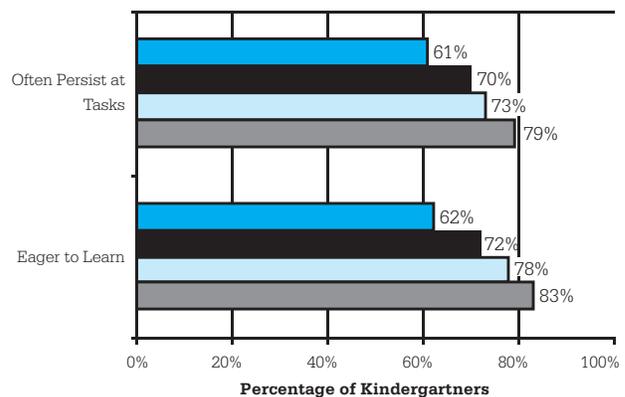
Figure 12b: Children’s Family Activities by Mother’s Education Level, 1999



Note: Based on children ages 3 to 5 not enrolled in kindergarten.

Source: U.S. Census Bureau, 2002a, Table 216 (based on National Education Household Survey); NCES, 2002a, Table 22 (based on Early Childhood Longitudinal Study).

Figure 12c: Kindergartners’ Learning Attitudes by Mother’s Education Level, 1999



Note: Based on teacher evaluations.

Source: NCES, 2002a, Table 18 (based on Early Childhood Longitudinal Study).

Young children of college graduates have higher cognitive skill levels and evidence greater ability to persist at tasks than children of mothers with lower levels of education.

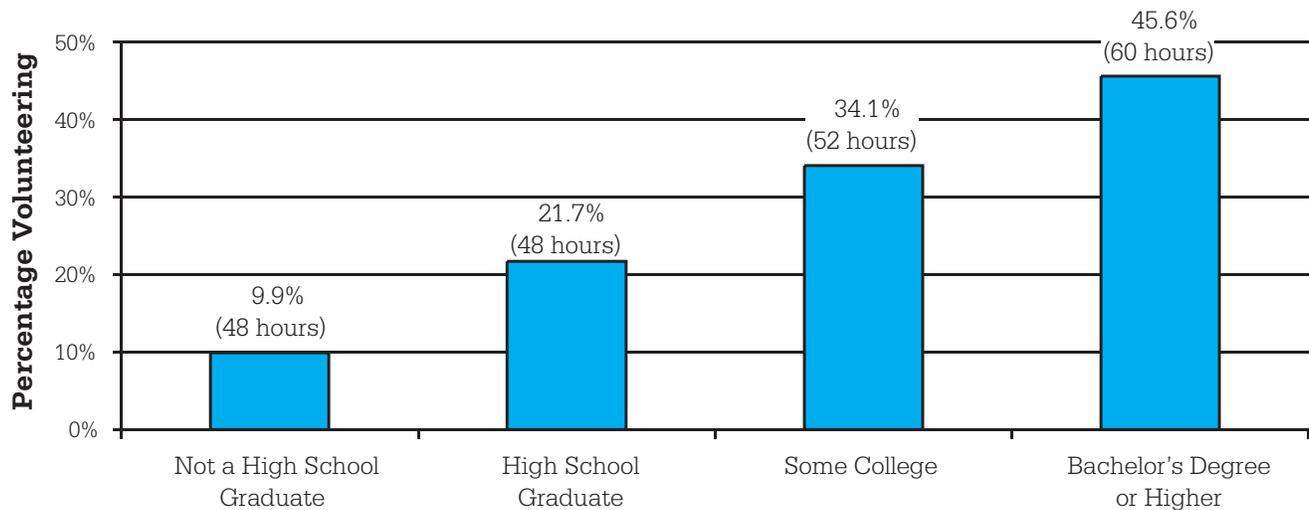
- Among children ages 3 to 5, 37 percent of those whose mothers are college graduates recognize all letters of the alphabet, compared to 17 percent of those whose mothers are high school graduates.
- Seventy-three percent of the children whose mothers are college graduates can count to 20, compared to 48 percent of those whose mothers are high school graduates.
- Ninety-two percent of the 3- to 5-year-old children whose mothers are college graduates are read to at least three times a week, compared to 76 percent of those whose mothers are high school graduates.
- According to teacher evaluations, children whose mothers are college graduates are significantly more likely to display eagerness to learn than are the children of high school graduates.

Also important:

Many factors in addition to parents’ formal education contribute to the patterns of children described here. These patterns have significant implications for the children’s futures.

Volunteerism

Figure 13: Volunteer Activity by Education Level, 2003: Percent Who Volunteer and Median Hours Per Year



Note: Includes individuals age 25 and older.

Source: Bureau of Labor Statistics, 2003.

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

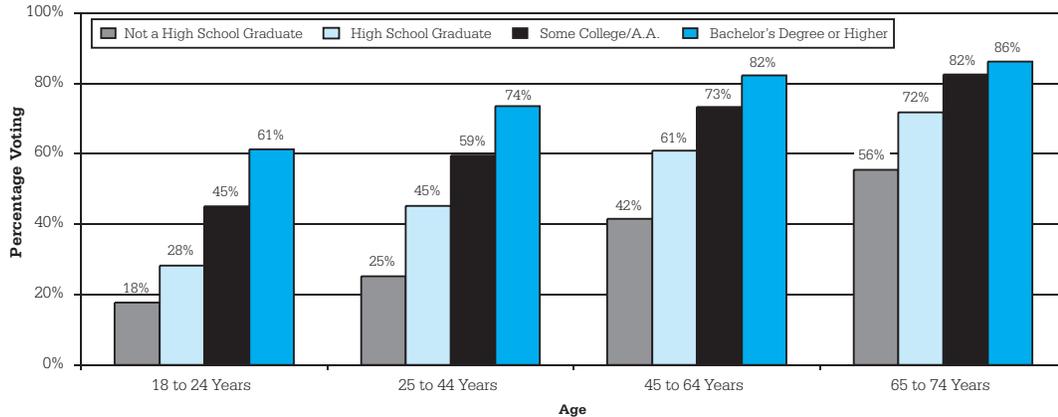
- According to the Bureau of Labor Statistics, about 29 percent of adults volunteer through an organization.
- Among college graduates, the volunteer rate is 46 percent, over twice the 22 percent rate for high school graduates.
- Among those who volunteer, the median number of volunteer hours increases with educational attainment, with the 46 percent of college graduates who volunteer averaging 60 hours during the year, compared to 52 hours for those with some college, and 48 hours for high school graduates and for the adults with less than a high school diploma who volunteer their time.

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, when controlling for other factors, 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)

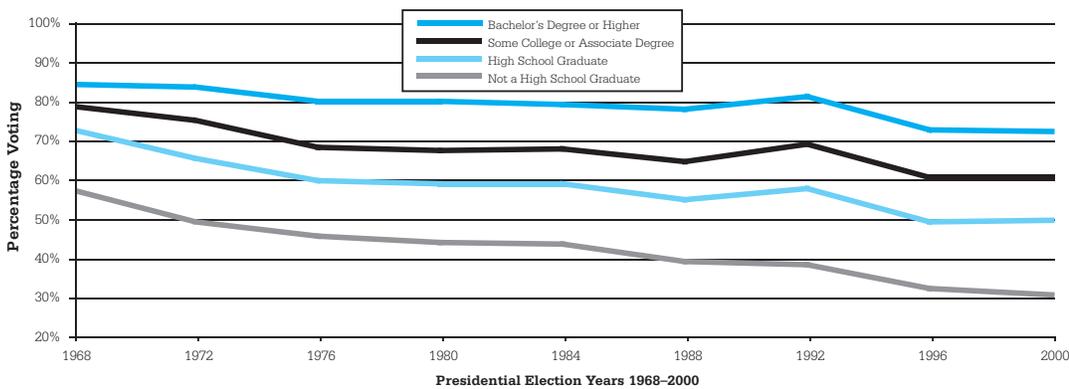
Voting

Figure 14a: Reported Voting Rates by Age and Education Level, 2000



Source: U.S. Census Bureau, 2002b, Table 5.

Figure 14b: Reported Voting Rates Over Time by Education Level, 1968–2000



Note: Based on self-reporting.

Source: U.S. Census Bureau, 2002b, Table A-2.

In every age group, adults with higher levels of education are more likely to vote than those who have less education. Differences in voting rates by education level have increased over time.

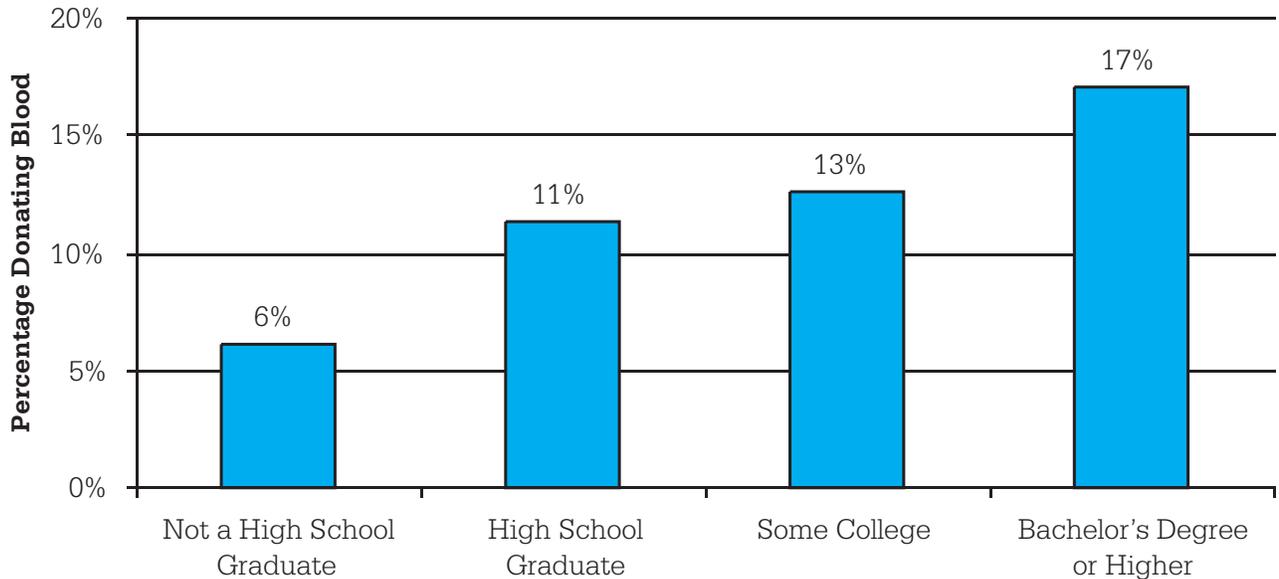
- In the 2000 presidential election, 74 percent of U.S. citizens who were college graduates between the ages of 25 and 44 reported voting, compared to 45 percent of high school graduates. Among citizens between the ages of 65 and 74, 86 percent of college graduates and 72 percent of high school graduates reported voting.
- As overall voting rates have declined over time, the difference in voter participation by education level has increased. Between 1968 and 2000, the proportion of adults without a high school diploma who voted fell by almost half, from 57 percent to 31 percent, and the proportion of high school graduates who voted fell by about one-third, from 73 percent to 49 percent. Among college graduates, the decline was from 84 percent to 72 percent.
- Whereas college graduates were 11 percentage points (84 percent versus 73 percent) more likely to vote than high school graduates in 1968, they were 20 percentage points more likely to vote in 1984 (79 percent versus 59 percent) and 23 percentage points (72 percent versus 49 percent) more likely to vote in 2000.

Also important:

The differences in voting patterns among the college educated and others are not all attributable to education, but controlling for other characteristics, estimates suggest that even enrolling in college increases the probability of registering to vote by 18 percent and the probability of voting in a presidential election by 29 percent. (Dee, 2004)

Blood Donations

Figure 15: Blood Donation by Education Level, 1994:
Percentage Who Donate Regularly



Note: Regular blood donation is defined as at least once in the last year, twice in the last three years, or three times in the last five years.

Source: DDB Worldwide, 2002.

College graduates are more likely than other adults to donate blood.

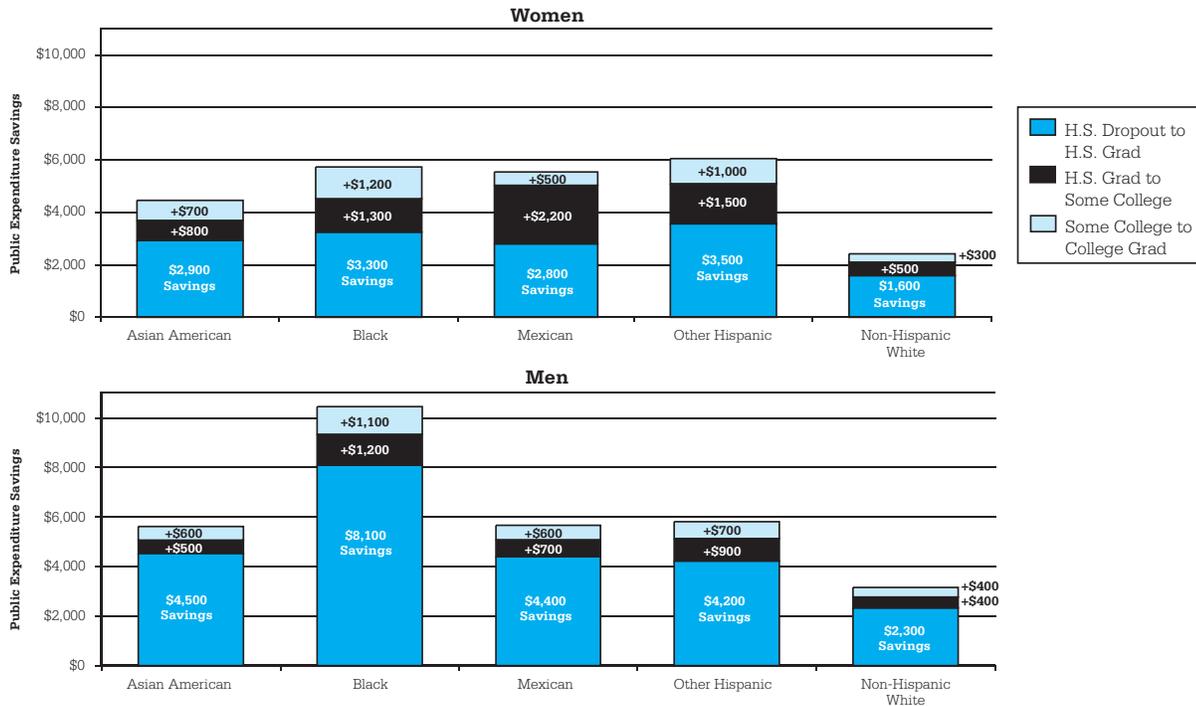
- In 1994, about 17 percent of college graduates were regular blood donors, compared to 13 percent of those with some college, 11 percent of high school graduates, and fewer than 6 percent of those who had not graduated from high school.

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, and income, those with some college are about 2 percentage points more likely than high school graduates to be blood donors, and college graduates are 5 percentage points more likely to donate regularly. (DDB Worldwide, 2002; calculations by the authors)

Social Programs

Figure 16: Annual Savings on Social Programs from Increased Education: Savings for 30-Year-Old Men and Women Relative to High School Dropouts, 2003 Dollars



Notes: Includes only native-born men and women. Social programs include unemployment compensation, Medicare and Medicaid, food programs, welfare, criminal justice, and other social programs. Estimates from RAND in 1999 dollars updated to 2003 dollars by authors.

Source: Vernez, Krop, and Rydell, 1999; calculations by the authors.

In Figure 16, the bottom dark blue section of each bar represents the difference between the average annual expenditures on social programs for a 30-year-old man or woman who did not complete high school and a 30-year-old with the same demographic characteristics who has graduated from high school. The second, black section shows the difference between expenditures on a 30-year-old high school graduate and a 30-year-old with the same demographic characteristics with some college but no degree. The upper, light blue section shows the difference between expenditures on a 30-year-old with some college but no degree and expenditures on the average college graduate with the same demographic characteristics.

The government spends between \$800 and \$2,700 per year less on social programs for individual 30-year-old college graduates than for high school graduates of the same age, gender, and race/ethnicity.

- Researchers at the RAND Corporation have estimated that the annual savings resulting from a 30-year-old woman having graduated from college, instead of ending with a high school diploma, range from about \$800 for the average non-Hispanic white woman and \$1,500 for the average Asian American woman to \$2,500 for black and other Hispanic women and \$2,700 for Mexican women.
- The estimates of annual savings resulting from a 30-year-old man having graduated from college instead of ending with a high school diploma are approximately \$800 for the average non-Hispanic white man, \$1,100

for the average Asian American man, \$1,300 for Mexican men, \$1,600 for other Hispanic men, and over \$2,300 for black men.

Also important:

- Estimates from the RAND study suggest that overall every dollar spent on equalizing college entrance rates across racial/ethnic groups would yield between \$2.00 and \$3.00 in public savings, with a third to half of the benefits coming from savings on social programs and the rest from increased tax revenues.
- If increased earnings are added in, the total benefit from each dollar of expenditures is in the \$4 to \$5 range. (RAND, 1999, Table 5.2)

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. The black/white gap has narrowed slightly over the past decade, but this is not true of the Hispanic/white gap. Women have been more likely than men to enroll since the late 1980s, and the gender gap is widening.

In addition to race/ethnicity and gender, socioeconomic status plays a major role in patterns of participation in higher education. Even among high school graduates with similar levels of academic achievement, students from low-income families are much less likely than more affluent students to continue their education after high school. Both income and parent education level have independent effects on the probability that students enroll in college, and the gaps among young people at different socioeconomic levels have not narrowed measurably in recent decades. 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 also an important focus. Even among those who enroll in postsecondary institutions, degree completion is correlated with demographic characteristics. White and Asian American 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 rates and in 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 between rural and urban residents, varying patterns of participation in higher education across the 50 states, and comparison of the record in the United States to that in other countries.

College Participation by Race and Ethnicity

Figure 17a: Postsecondary Participation Rates of 18- to 24-Year-Old High School Graduates, 1972–2001

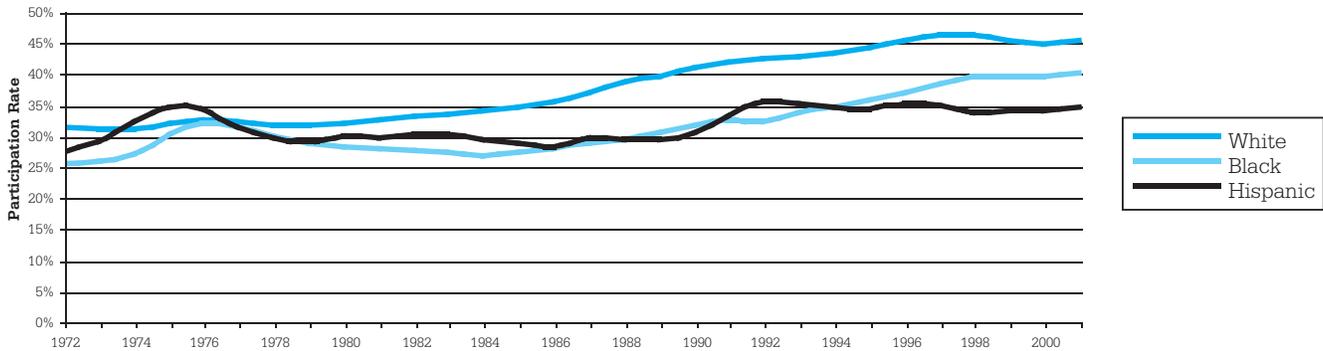
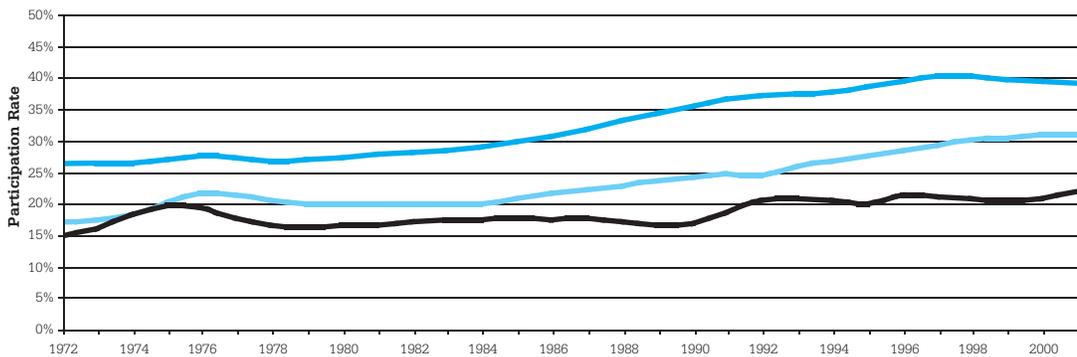


Figure 17b: Postsecondary Participation Rates of All 18- to 24-Year-Olds, 1972–2001



Notes: Some 18- to 24-year-olds have completed college degrees. They are not included in these enrollment figures. Enrollment rates are three-year moving averages for all groups.

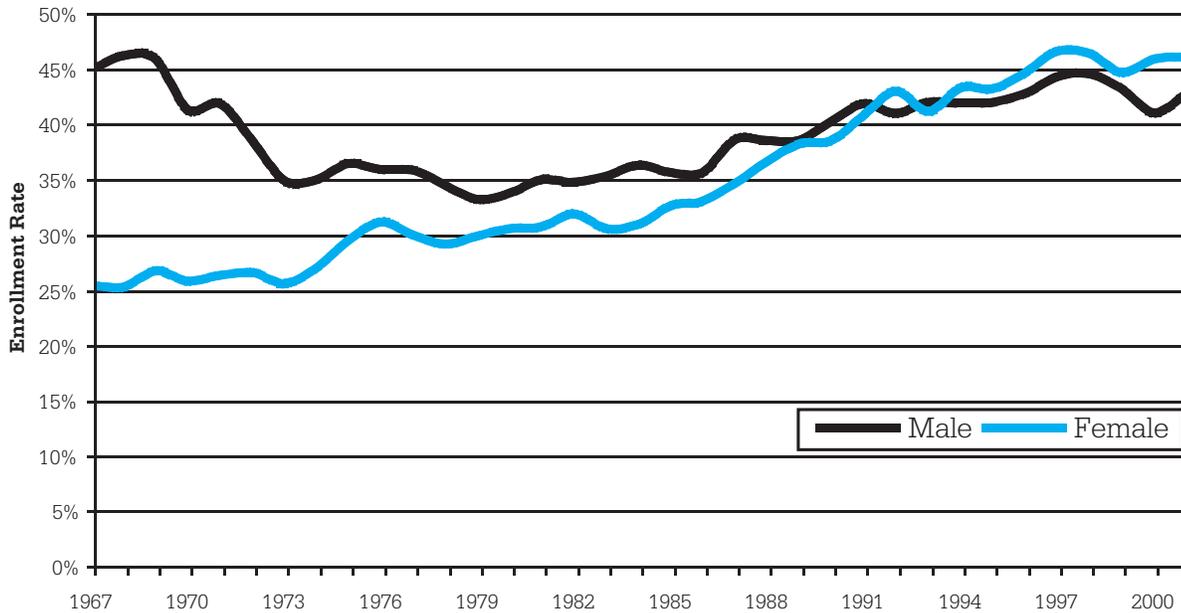
Source: NCES, 2002c, Table 186.

College participation rates among whites are higher than those among blacks and particularly Hispanics. In the mid-1970s, postsecondary participation rates of high school graduates were similar for all three of these racial/ethnic groups. After widening in the 1980s, the white/black gap has narrowed over the past decade, but the white/Hispanic gap has been more persistent.

- In 2001, only 35 percent of Hispanic and 40 percent of black 18- to 24-year-old high school graduates were enrolled in college, compared to 45 percent of whites. (See discussion of Hispanic immigration, Figure 25.)
- The gap between the college participation rates of black and white high school graduates declined from 6 percentage points in 1972 to 5 percentage points in 1982, but had risen to 10 percentage points by 1992. By 2001, the black/white gap had fallen back to 5 points.
- The gap between the college participation rates of Hispanic and white high school graduates declined from 4 percentage points in 1972 to 3 percentage points in 1982, but had risen to 7 percentage points by 1992 and 11 percentage points in 2001.
- Because of differences in high school graduation rates, the gaps in college participation for all 18- to 24-year-olds, including those who are not high school graduates, are larger. Only 22 percent of Hispanics in this age group were in college in 2001, compared to 31 percent of blacks and 39 percent of non-Hispanic whites.
- In 1991, the college participation rate of all white 18- to 24-year-olds was 12 percentage points higher than the participation rate of all black 18- to 24-year-olds. By 2001, that gap had narrowed to 8 percentage points.
- In 1991, the college participation rate of white 18- to 24-year-olds was 18 percentage points higher than the participation rate of Hispanic 18- to 24-year-olds. By 2001, that gap was still 17 percentage points.

College Enrollment by Gender

Figure 18: Postsecondary Enrollment Rates of Recent High School Graduates by Gender, 1967–2001



Note: Based on 18- to 24-year-olds who have graduated from high school within the past 12 months.

Source: NCES, 2002c, Table 186.

In every year since 1993, the percentage of 18- to 24-year-old female high school graduates who enroll in college has been higher than the percentage of male high school graduates who enroll.

- In 1971, 42 percent of male high school graduates and only 26 percent of female high school graduates enrolled in college within a year.
- The college enrollment rates of male 18- to 24-year-old high school graduates declined precipitously during the 1970s.
- The male enrollment rate recovered during the 1980s, but between 1991 and 2001, was relatively steady at about 42 percent. During that decade, the college enrollment rate among 18- to 24-year-old female high school graduates increased from 40 percent to 46 percent.

College Enrollment by Family Income and Test Scores

Figure 19a: Postsecondary Enrollment Rates of 1992 High School Graduates by Family Income and Math Test Scores

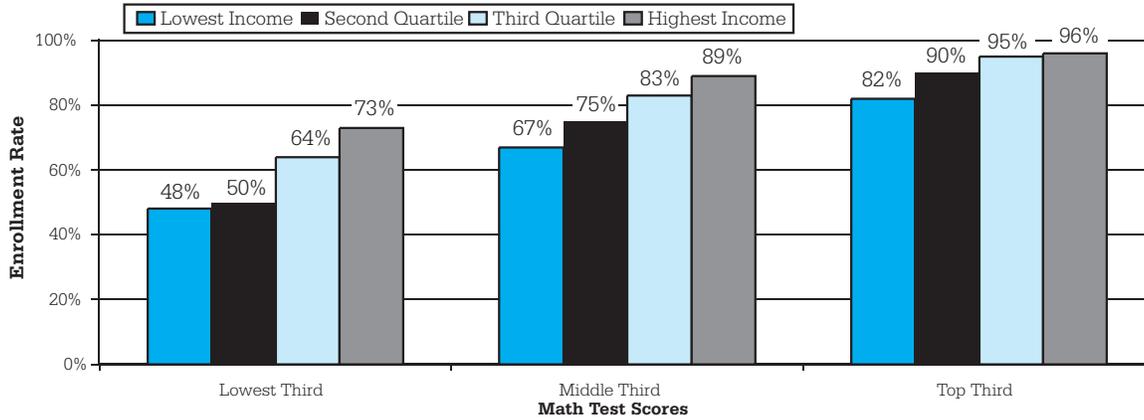
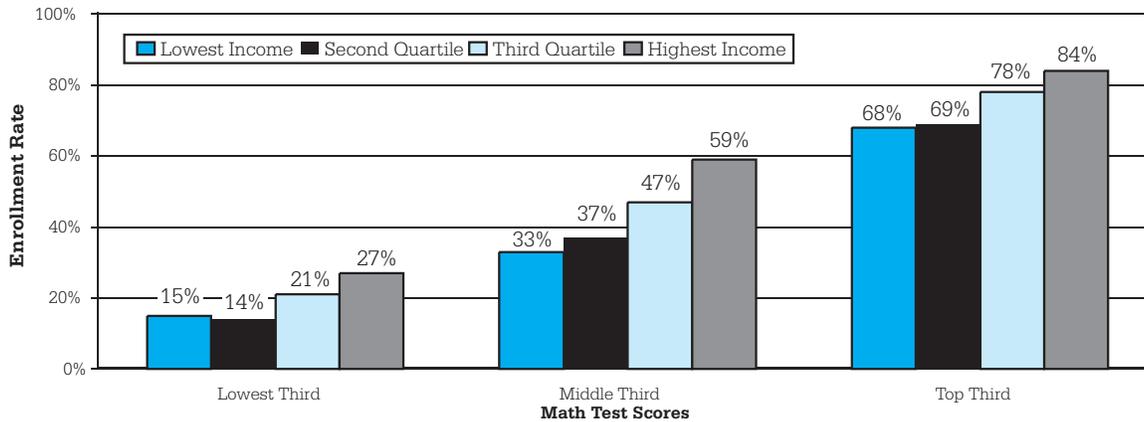


Figure 19b: Four-Year College and University Enrollment Rates of 1992 High School Graduates by Family Income and Math Test Scores



Notes: Includes enrollment within 20 months of high school graduation. Comparable data are not available for more recent years.

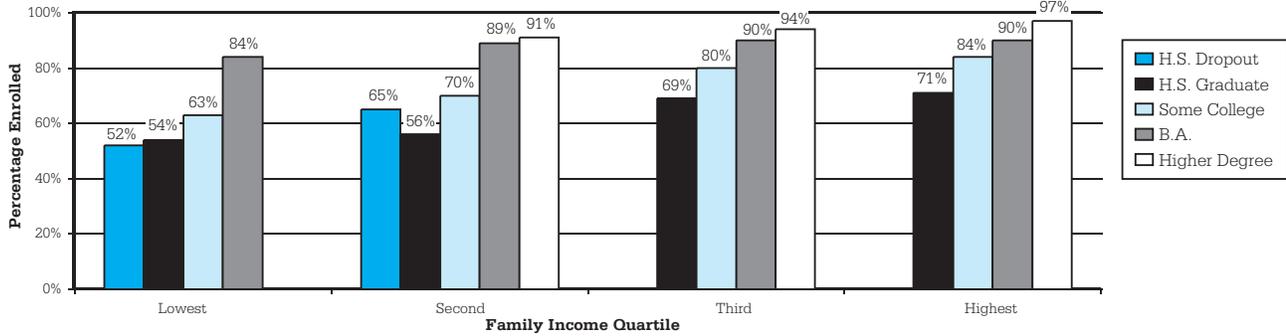
Source: Ellwood and Kane, 2000.

Income differences tend to have a smaller impact on college enrollment rates of high school graduates with high test scores than on those with lower test scores. Differences in academic achievement affect the behavior of low-income students much more than they affect the behavior of affluent students.

- Among those in the lowest income quartile who score in the highest third on math tests, 18 percent do not enroll in a postsecondary institution within 20 months of high school graduation and 32 percent do not enroll in a four-year college or university.
- Among those scoring in the lowest third on math tests, the highest income students are over 50 percent more likely to enroll in postsecondary education than the lowest income students. Among the highest third of test-takers, the most affluent students are only 17 percent more likely than the least affluent students to enroll.
- In the lowest income quartile, students scoring in the highest third on math tests are about 70 percent more likely to enroll in postsecondary education than those who score in the lowest third. In the highest income quartile, the highest third of math test-takers are only about 30 percent more likely to enroll than those with the lowest scores.
- Eighty-four percent of students with test scores in the highest third who are in the top 25 percent of the family income distribution enroll in a four-year institution and 96 percent enroll in postsecondary education.

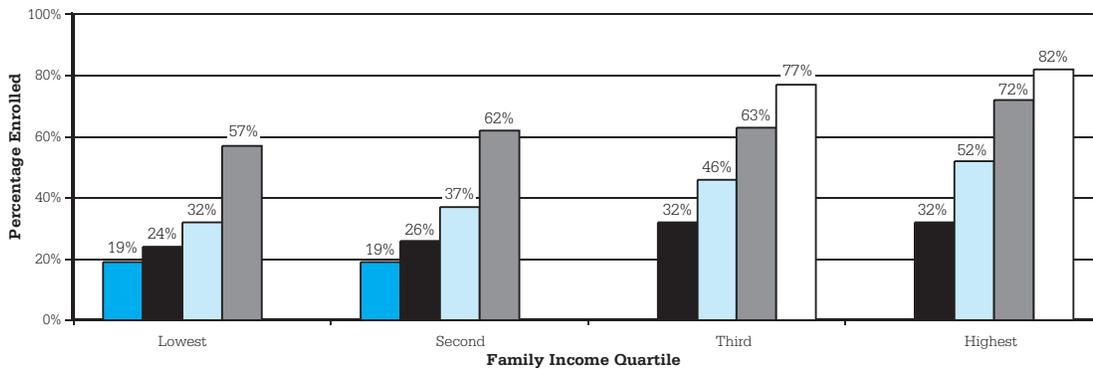
College Enrollment by Family Income and Parent Education Level

Figure 20a: Postsecondary Enrollment Rates of 1992 High School Graduates by Family Income and Parent Education Level



Notes: Includes enrollment within 20 months of high school graduation. Sample sizes for lowest income quartile with higher degree and for third and highest income quartile high school dropouts are too small for meaningful results.

Figure 20b: Four-Year College and University Enrollment Rates of 1992 High School Graduates by Family Income and Parent Education Level



Notes: Includes enrollment within 20 months of high school graduation. Sample sizes for lowest and second income quartiles with higher degree and for third and highest income quartile high school dropouts are too small for meaningful results. Comparable data are not available for more recent years

Source: Ellwood and Kane, 2000.

Within income groups, students whose parents have college degrees are most likely to enroll in college, and within parental education levels, students from higher-income families are most likely to enroll.

- Differences in postsecondary enrollment rates by family income level are smaller among students whose parents have higher levels of education.
- Differences in postsecondary enrollment rates by parent education level are smaller for students from higher-income families.
- Parents' level of education has a significant impact on college enrollment rates within income groups. Among high school graduates in the upper-middle family income group, for example, 90 percent of those whose parents are college graduates enroll in postsecondary education, compared to 69 percent of those whose parents have only a high school education.
- Differences in enrollment rates by parent education level are significantly larger for four-year colleges and

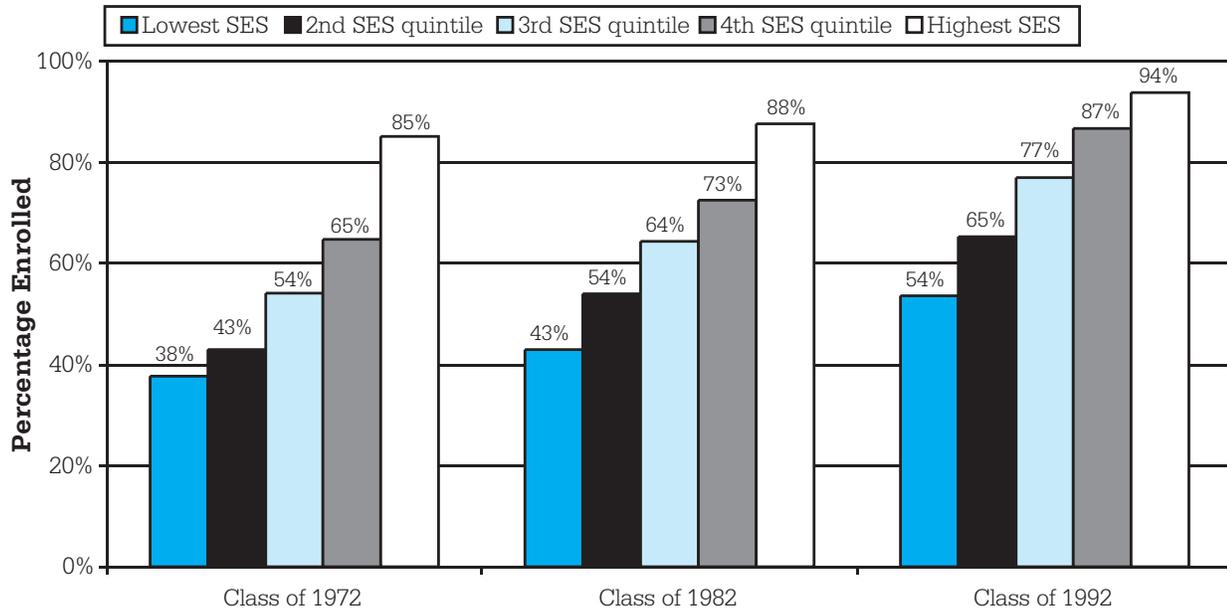
universities than for postsecondary education overall. In the upper half of the income distribution, children of college graduates are more than twice as likely as children of high school graduates to enroll in four-year colleges and universities.

Also important:

- The proportion of students with parents in the highest income quartile who enroll in postsecondary institutions is 26 percent greater than the proportion of those in the lowest income quartile who enroll.
- Accounting for differences in academic achievement and other demographic characteristics, including parent education level, reduces the difference in college enrollment rates by family income level. However, Ellwood and Kane estimate that even after controlling for other relevant factors, high-income students are significantly more likely than low-income students to enroll in postsecondary institutions. (Ellwood and Kane, 2000)

College Enrollment by Socioeconomic Status

Figure 21: Postsecondary Enrollment Rates of High School Seniors by Socioeconomic Status (SES): Classes of 1972, 1982, and 1992



Notes: Includes high school seniors who did not graduate from high school. Comparable data are not available for more recent years. Socioeconomic status is defined by a combination of family income, parent occupation, and parents' highest level of educational attainment. Enrollment within 12 years of high school graduation for the class of 1972, within 11 years for the class of 1982, and within 8.5 years for the class of 1992. **Source:** Adelman, 2004, Table 2.4.

Postsecondary enrollment rates increased significantly between 1972 and 1992; the gap in postsecondary enrollment rates by socioeconomic status narrowed slightly over this 20-year period.

- Including those who did not graduate from high school, the proportion of 1972 high school seniors from the highest socioeconomic status (SES) quintile who enrolled in college was 47 percentage points higher than the proportion from the lowest quintile that enrolled. The gap narrowed to 45 percentage points for the class of 1982 and 40 percentage points for 1992 high school seniors.
- The proportion of 1972 high school seniors from the highest socioeconomic quintile who enrolled in postsecondary education was 126 percent greater than the proportion from the lowest quintile who enrolled. The gap narrowed to 104 percent for the class of 1982. 1992 high school seniors whose parents had the highest income and levels of education were 75 percent more likely to enroll than those from families with the lowest incomes and parental education levels.

Also important:

Between 1972 and 1992, the proportion of high school seniors in the lowest socioeconomic quintile not enrolling declined by 16 percentage points, from 62 percent to 46 percent.

Stratification Within Higher Education

Figure 22a: Income Distribution of Full-Time First-Year Students Within Sectors, 1999–2000

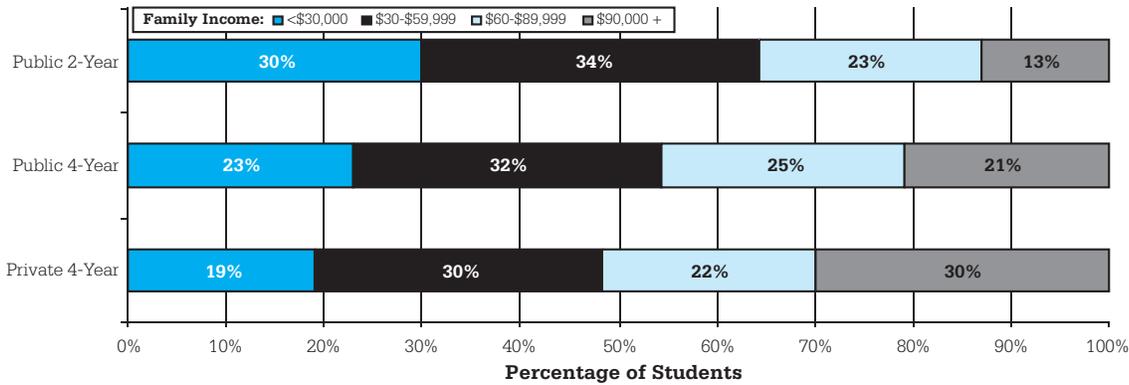
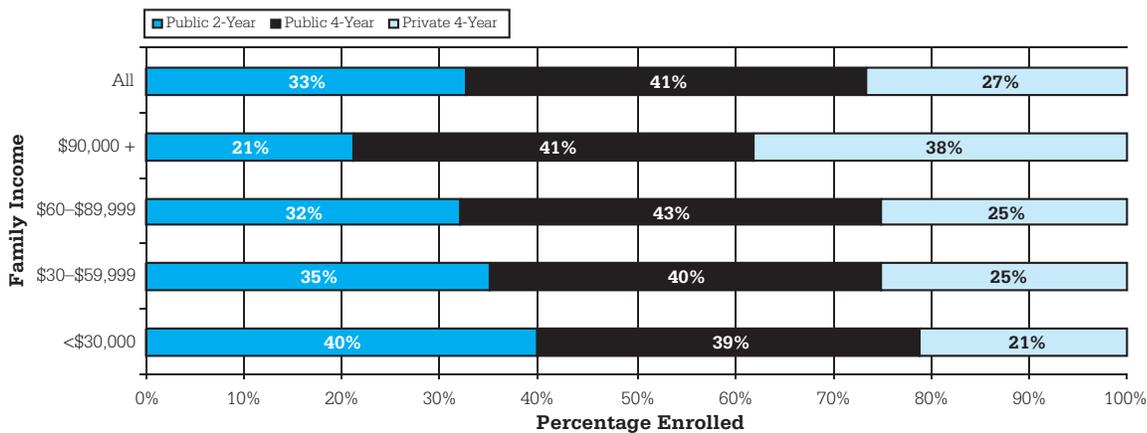


Figure 22b: Institutional Choice by Income Level, 1999–2000



Notes: Percents may not sum to 100 percent due to rounding. Includes full-time dependent students in their first undergraduate year. Data are from NPSAS data analysis system.

Source: Congressional Budget Office, 2004, Table 4 (based on National Postsecondary Student Aid Study).

The lowest income students are overrepresented in public two-year colleges and underrepresented in private four-year colleges.

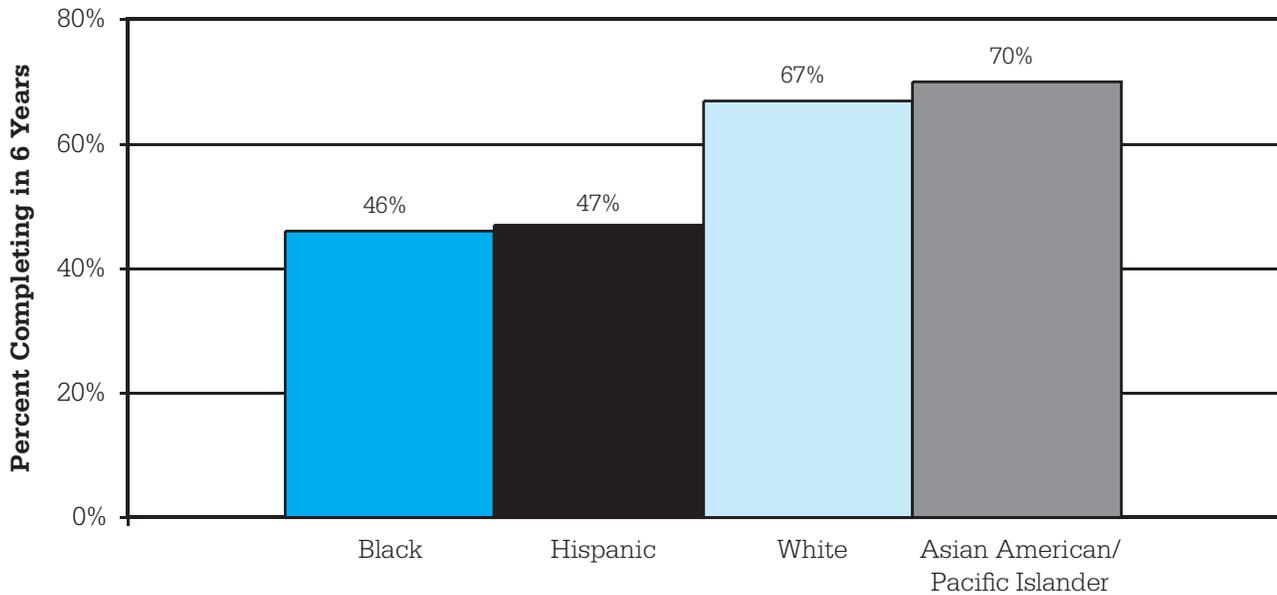
- Low-income students are almost twice as likely to begin postsecondary study in public two-year (40 percent) or four-year colleges (39 percent) as in private four-year colleges (21 percent).
- High-income students are almost as likely to begin postsecondary study in private four-year colleges (38 percent) as in public four-year colleges (41 percent), and are much less likely to enroll in two-year public colleges (21 percent).
- In the public two-year sector, 30 percent of full-time first-year students are from families with incomes below \$30,000, and only 13 percent are from families with incomes of \$90,000 or higher.
- In the private four-year sector, 30 percent of full-time first-year students are from families with incomes of \$90,000 or higher and only 19 percent are from families with incomes below \$30,000.

Also important:

- Students who are independent of their parents are not included here. They constitute almost half of all students and are disproportionately from less affluent families. They are more concentrated in public two-year and for-profit institutions than are dependent students.
- Public two-year colleges have greater proportions of part-time students, who are not included here, than do four-year public and private colleges.
- Focusing on first-year students highlights enrollment decisions. However, analysis of the relationship between income and institutional type for all college students shows a lower concentration of low-income students in two-year institutions. (Choy, 2004)
- About half of the students in for-profit institutions are from the lowest income group. (Choy, 2004)

B.A. Completion Rates by Race

Figure 23: Bachelor’s Degree Completion Rates of Four-Year College Entrants by Race



Notes: Based on students who entered four-year institutions in 1995-96 with the goal of earning a B.A. Percentage who completed a B.A. at any postsecondary institution within six years.

Source: NCES, 2002b, Table 10.

Black and Hispanic students who enroll in college with the goal of earning a B.A. are less likely than white and Asian American students to earn bachelor’s degrees within six years, but they are more likely to still be enrolled.

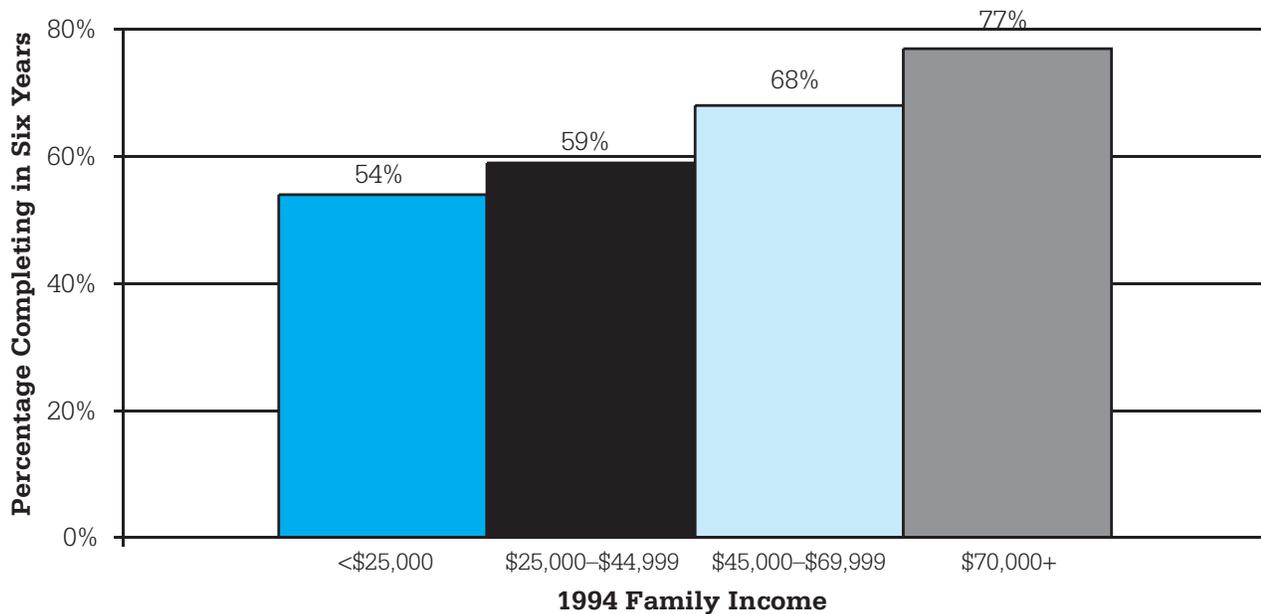
- Fewer than half of the black and Hispanic students who began full-time study at a four-year institution in 1995-96 with the goal of earning a B.A. had completed four-year degrees six years later, whereas almost 70 percent of their white and Asian American counterparts had completed bachelor’s degrees.

Also important:

- In 1995, 43 percent of all students were enrolled part-time (*Digest of Education Statistics*, 2002, Table 172). It is unlikely that these students could complete a bachelor’s degree in six years.
- Many of the students who have not earned a B.A. have followed a different path. Seven percent of the black students and 8 percent of the Hispanic students who entered a four-year college had earned an associate degree or a certificate six years later. (NCES, 2002a)
- Many students are still enrolled six years after beginning their studies. This was true of 20 percent of the black students, 21 percent of the Hispanic students, 12 percent of the white students, and 14 percent of the Asian American students who began in four-year colleges and universities in 1995-96 hoping to earn a B.A.
- The proportions of students who left school without earning a degree or certificate range from 15 percent for Asian Americans and 17 percent for whites to 24 percent for Hispanics and 27 percent for blacks. (NCES, 2002a, Table 2.2c)

B.A. Completion Rates by Family Income

Figure 24: Bachelor's Degree Completion Rates of Four-Year College Entrants by Family Income



Notes: Based on students who entered four-year institutions in 1995-96 with the goal of earning a B.A. Percentage who completed a B.A. at any postsecondary institution within six years.

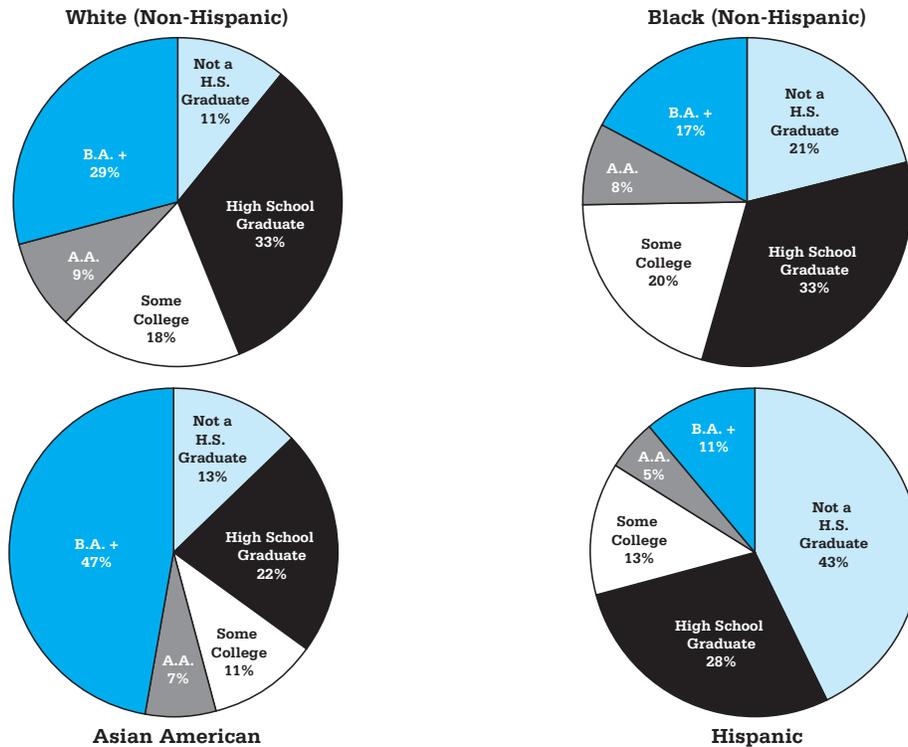
Source: NCES, 2002b, Table 10.

Students from more affluent families are more likely than others enrolled in four-year colleges and universities to complete bachelor's degrees within six years.

- In addition to having lower college enrollment rates than more affluent students, low-income students are less likely than others to complete four-year degrees if they do begin college. Among those who first enrolled in a four-year college or university in 1995-96, just over half of the dependent students from the lowest income quartile had earned bachelor's degrees six years later, compared to over three-quarters of those from the highest income quartile.
- Lower-income students who began in four-year colleges are more likely than higher-income students to have completed an associate degree or a certificate. This was true of 6 percent of the lowest income group, 4 percent of the middle-income groups, and 3 percent of those from families with incomes of \$70,000 or higher in 1994.
- Lower-income students are more likely than higher-income students to still be enrolled six years after entering four-year colleges and universities. This was true of 19 percent of those from families with incomes below \$25,000 in 1994, 13-15 percent of those in the middle-income groups, and 10 percent of those in the highest income group.
- Among students from families with 1994 incomes below \$45,000, just over 20 percent of students who entered four-year colleges in 1995-96 hoping to earn a bachelor's degree had left school without a degree or certificate six years later. Sixteen percent of those with family incomes between \$45,000 and \$70,000 were in this situation, as were 11 percent of those with higher family incomes.

Level of Education by Race/Ethnicity

Figure 25: Highest Education Level by Race/Ethnicity, 2002



Note: Includes individuals age 25 and older. Percents may not sum to 100 percent because of rounding.

Source: U.S. Census Bureau, 2003a, Table 10.

Only 11 percent of Hispanic adults have a four-year college degree, compared to 17 percent of blacks and 29 percent of whites.

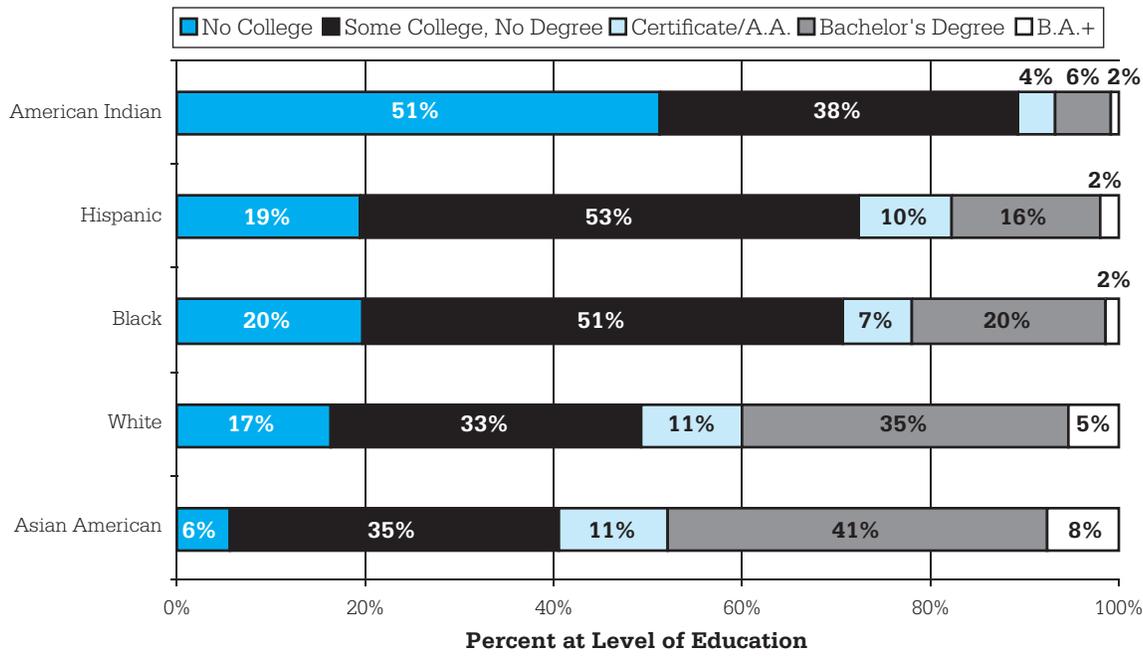
- Forty-three percent of Hispanics do not have a high school diploma, compared to 21 percent of blacks and 11 percent of whites.
- Among Asian American adults, 54 percent have completed at least a two-year or a four-year degree. This group constitutes 83 percent of the Asian Americans with any college experience.
- Among white adults, 38 percent have completed at least a two-year or a four-year degree. This group constitutes 68 percent of the whites with any college experience.
- Among black adults, 25 percent have completed at least a two-year or a four-year degree. This group constitutes 56 percent of the blacks with any college experience.
- Among Hispanic adults, 16 percent have completed at least a two-year or a four-year degree. This group constitutes 55 percent of the Hispanics with any college experience.

Also important:

- Over half of the adult Hispanic population was born outside the United States.
- White, black, and Asian American immigrants are more likely than native-born members of the same racial/ethnic groups to be college graduates. However, only 10 percent of Hispanic immigrants have four-year college degrees, compared to 14 percent of native-born Hispanics.
- White, black, and Asian American immigrants are almost as likely as native-born members of the same racial/ethnic groups to be high school graduates. However, only 45 percent of Hispanic immigrants have completed high school, compared to 75 percent of native-born Hispanics. (Stoops, 2004)

Level of Education by Race/Ethnicity: High School Class of 1992

Figure 26: Level of Education in 2000 by Race/Ethnicity:
1992 High School Graduates



Note: Percents may not sum to 100 percent due to rounding. Includes only those from the class of 1992 who earned a standard high school diploma by July of 1993. Highest level of education reached by December 2000.

Source: Adelman, 2004, Table 2.7.

Eighty percent of black and Hispanic 1992 high school graduates had at least some postsecondary education by 2000. Twenty-two percent of blacks and 18 percent of Hispanics had earned a bachelor's degree.

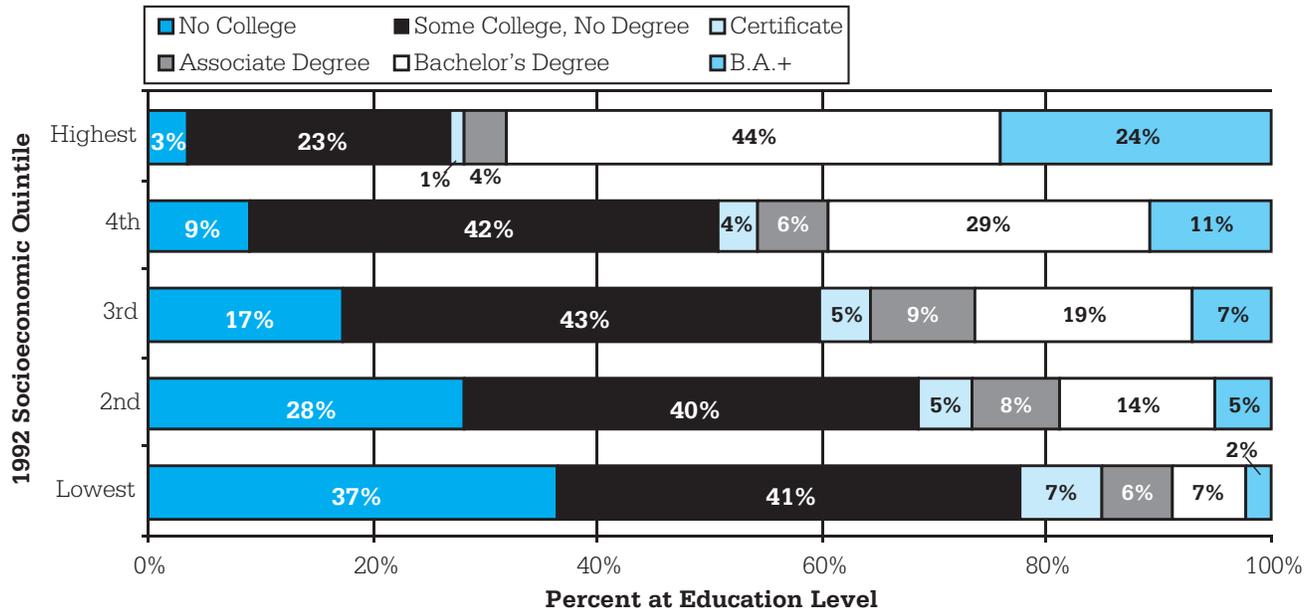
- Ninety-four percent of Asian American 1992 high school graduates went to college, compared to 83 percent of whites and 80 percent, 81 percent, and 49 percent of black, Hispanic, and American Indian high school graduates, respectively.
- Forty-nine percent of Asian American and 40 percent of white 1992 high school graduates had earned at least a B.A. by December 2000. In contrast, only 22 percent of blacks, 18 percent of Hispanics, and 8 percent of American Indians had graduated from four-year colleges.

Also important:

The educational attainment of these high school graduates is much higher than that of the general adult population, as reported in Figure 25. For example, the 81 percent of 1992 Hispanic high school graduates with at least some college experience compares to 29 percent of Hispanic adults overall. The 22 percent of 1992 black high school graduates with a B.A. or higher by 2000 compares to 18 percent of black adults overall. Forty percent of 1992 white high school graduates have a B.A. or higher, compared to 29 percent of white adults overall.

Level of Education by Socioeconomic Background: High School Class of 1992

Figure 27: Level of Education in 2000 by Socioeconomic Background: 1992 High School Graduates



Notes: Percents may not sum to 100 percent due to rounding. Socioeconomic status is defined by a combination of family income, parent occupation, and parents' highest level of educational attainment. Highest level of education reached by December 2000. Includes only those students from the class of 1992 who earned a standard high school diploma by July 1993.

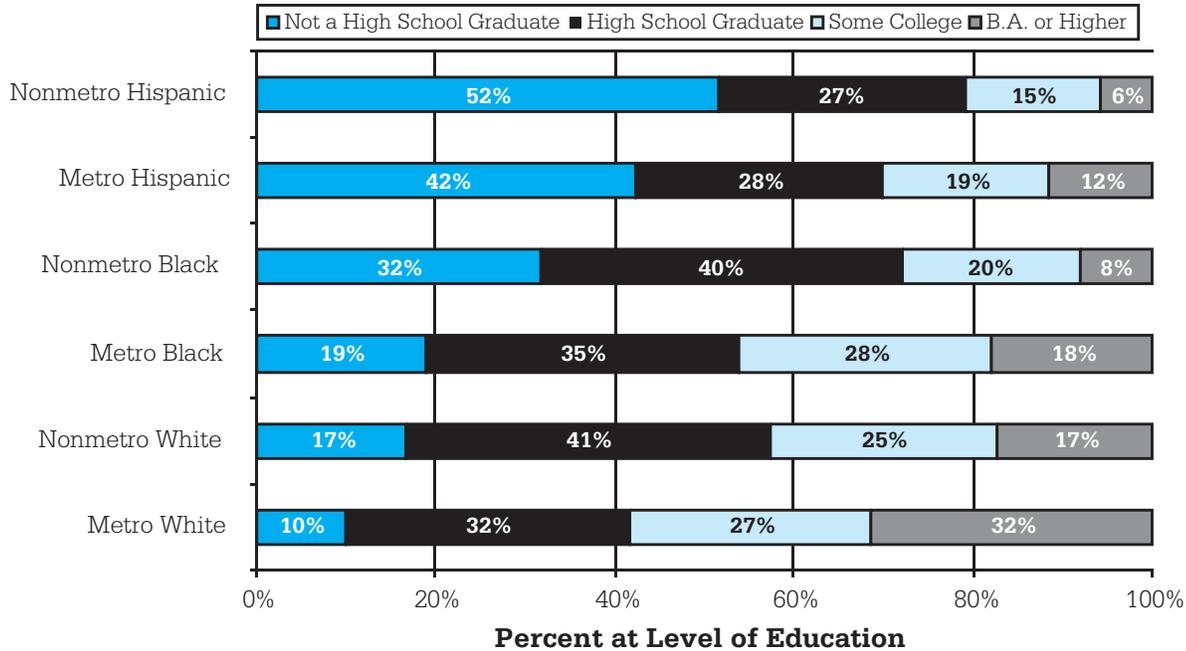
Source: Adelman, 2004, Table 2.8.

1992 high school graduates in the highest socioeconomic quintile are significantly less likely than other students to leave college without a degree and significantly more likely than other students to earn advanced degrees.

- Among 1992 high school graduates with standard diplomas, 63 percent of the students from families with the lowest incomes and lowest parental education levels enrolled in postsecondary institutions. Eighty-three percent of students in the middle socioeconomic group, and 97 percent of the highest socioeconomic status students had at least some college experience eight years after completing high school.
- Among 1992 high school graduates whose parents were in the highest socioeconomic quintile, 68 percent who entered postsecondary education earned a four-year degree by 2000. This proportion is lower for those from families with lower incomes and lower levels of parent education. Twenty-six percent of the middle socioeconomic group with any college experience and 9 percent of postsecondary entrants in the lowest socioeconomic quintile had completed four-year degrees by December 2000.

Level of Education: Urban Versus Rural Residence

Figure 28: Education Level by Metropolitan/Nonmetropolitan Residence and Race/Ethnicity, 2000



Notes: Percents may not sum to 100 percent due to rounding. Includes adults 25 or older. “Metropolitan” refers to all counties in Metropolitan Statistical Areas (MSAs) and “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.

Source: Economics Research Service, 2003, Table 2.

Rural whites are more likely to be high school graduates than urban blacks and Hispanics, but urban blacks are as likely as rural whites to be college graduates.

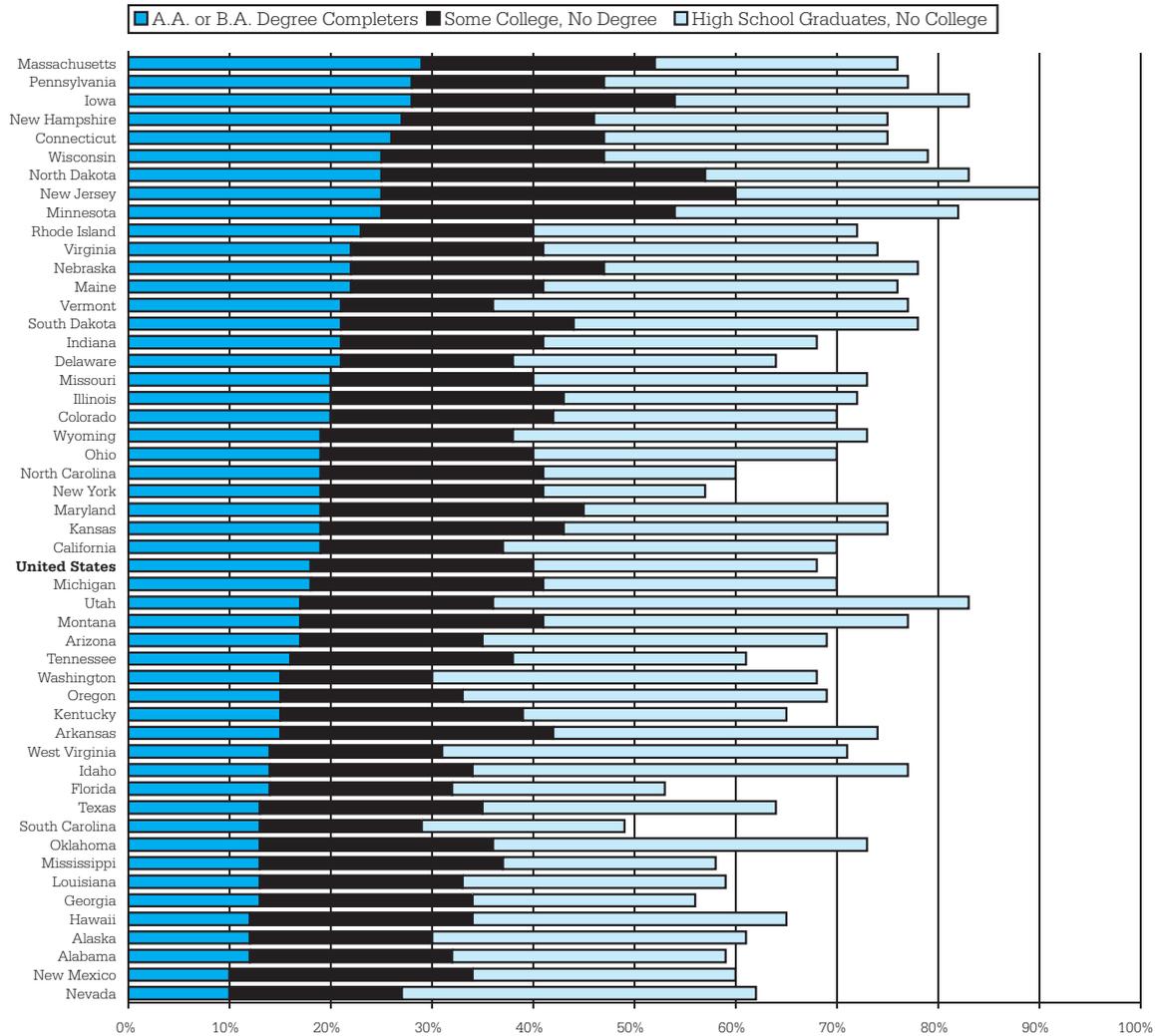
- Within racial/ethnic groups, people in nonmetropolitan areas are less likely to have graduated from high school, less likely to have attended college, and less likely to have graduated from college than their urban counterparts.

Also important:

- The differences in education levels by residence area reflect a combination of educational participation patterns and the residential choices of adults, which are significantly affected by the location of employment opportunities.
- The educational levels of Hispanics in metropolitan areas are significantly affected by immigration patterns.

The Educational Pipeline in the States

Figure 29: Education Level by State



Note: College enrollment rates are based on the number of high school graduates enrolled anywhere in the country.

Source: National Center for Public Policy and Higher Education, 2004.

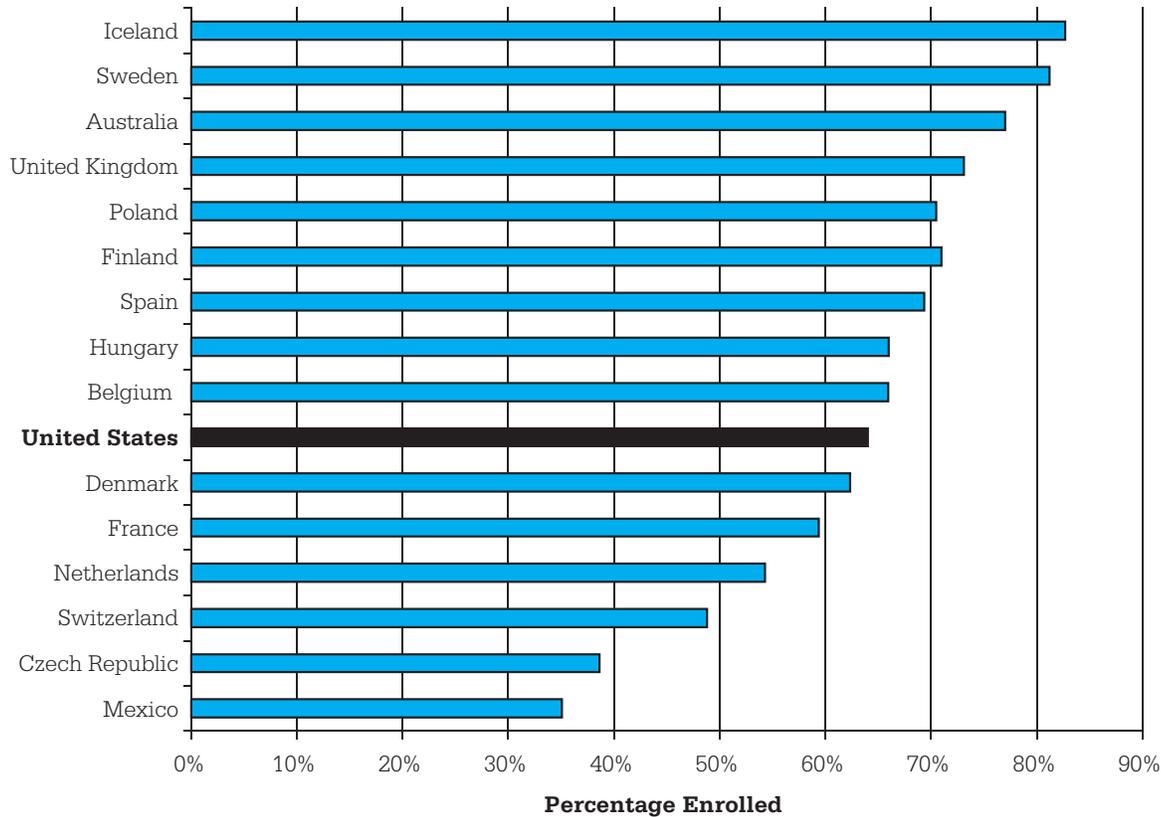
The bars in this graph represent high school graduates as a percentage of public high school ninth graders in the state four years earlier. The first blue segment shows the percentage of ninth graders who earn either a bachelor’s degree within six years after high school or an associate degree within three years. The second black segment indicates the percentage that entered college but did not earn a degree in this time period, and the third segment indicates the percentage who graduated from high school but did not enter a postsecondary institution immediately after high school.

High school graduation rates, college enrollment rates, and degree completion rates vary considerably across states.

- The National Center for Public Policy and Higher Education has calculated that on average in the U.S., 68 percent of ninth graders graduate from high school within four years, 40 percent of ninth graders enter college immediately after high school, and 18 percent earn either two-year degrees within three years or four-year degrees within six years.
- High school graduation rates range from 49 percent of ninth graders in South Carolina and 53 percent in Florida to 90 percent in New Jersey.
- College entrance rates are at lows of 27 percent of ninth graders in Nevada and 29 percent in South Carolina, and highs of 57 percent in North Dakota and 60 percent in New Jersey.
- The 10 percent two- and four-year college degree completion rates in New Mexico and Nevada are the lowest in the country. Pennsylvania, Iowa, and Massachusetts have the highest college degree completion rates, just under 30 percent.
- There is considerable consistency within states in terms of ranking, with four of the five states with the highest high school graduation rates ranking in the top five in college enrollment and within the top 10 in degree completion rates.
- Some states are much stronger in some phases of the education pipeline than in others. For example, Massachusetts ranks thirteenth in high school graduation rate, fifth in college enrollment, and first in college graduation; Utah ranks fourth in high school graduation, thirty-third in college enrollment, and thirty-first in college graduation; and Vermont ranks ninth in high school graduation, thirty-fifth in college enrollment, and fourteenth in college graduation.

International Comparison: Higher Education Enrollment Rates

Figure 30: International Comparison of Higher Education Entry Rates, 2002



Notes: Data for different countries are not entirely comparable because of differences in types of institutions, educational patterns, and statistical methodologies. Organisation for Economic Co-operation and Development (OECD) derives entry rates by summing entry rates across age groups. Entry rates for less-than-four-year programs are not reported for Finland and Australia.

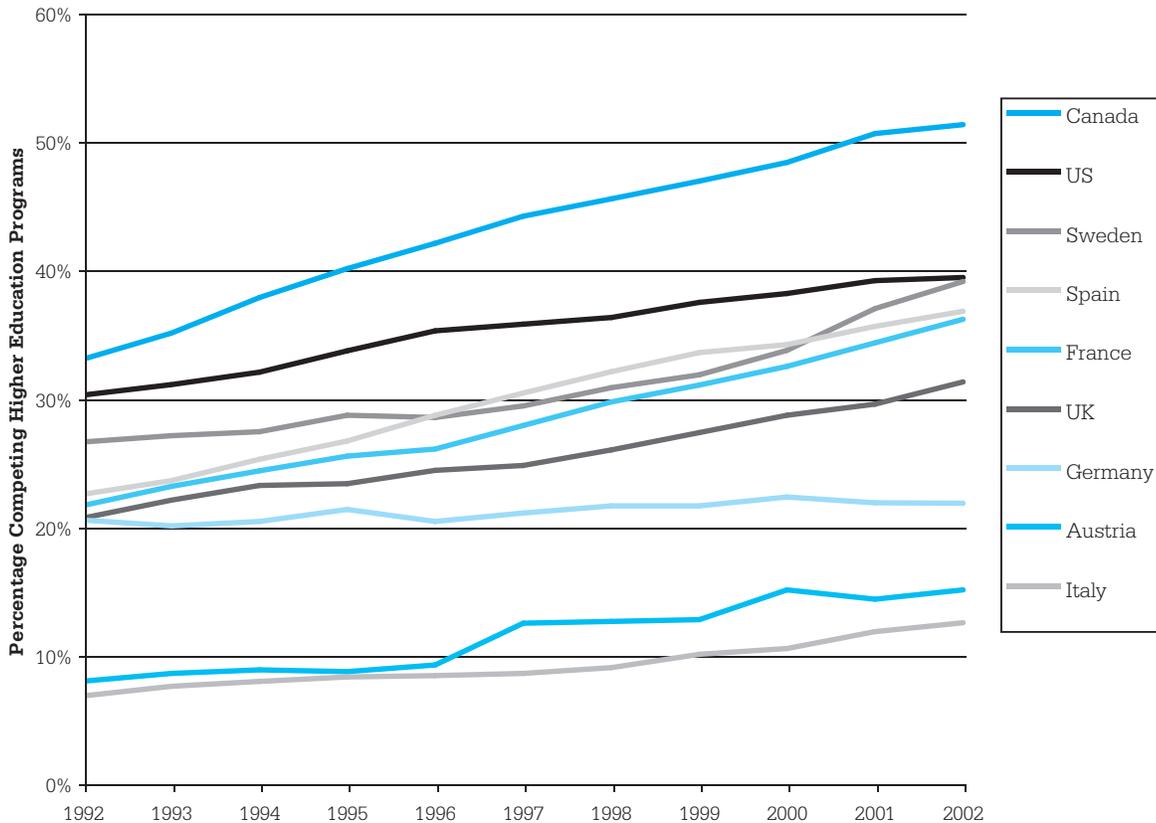
Source: OECD, 2004, Table C2.1.

International comparisons indicate that the United States has a higher enrollment rate than Switzerland, the Netherlands, and France, but individuals continue their education after high school at a lower rate in the United States than in many other countries, including Sweden, the United Kingdom, Poland, and Spain.

- In Sweden and Iceland, over 80 percent of 18- to 24-year-olds enroll in either short-term or long-term higher education programs and in Australia, 77 percent enroll.
- Because of higher entry and completion rates elsewhere, the gap between the United States and countries with lower levels of educational attainment is narrowing. (OECD, 2004)

International Comparison: Higher Education Over Time

Figure 31: International Comparison: Completion of Higher Education Programs
Ages 25–34, 1992 to 2002



Note: Based on the 25- to 34-year-old population.

Source: OECD, 2004, Table A3.4b.

The gap between completion of higher education programs in the United States and the higher level of completion in Canada widened over the decade from 1992 to 2002. The gap between the United States and countries with lower levels of attainment narrowed.

- According to data from the Organisation for Economic Co-operation and Development (OECD), the proportion of Americans between ages 25 and 34 who have completed a higher education program increased from 30 percent to 39 percent between 1992 and 2002.
- The percentage of Canadians between 25 and 34 who have completed a higher education program increased from 33 percent to 51 percent over the decade.
- The proportion of 25- to 34-year-olds with higher education increased from 21 percent to 31 percent in the United Kingdom and from 22 percent to 37 percent in Spain between 1992 and 2002.
- Italy and Austria have low educational attainment rates relative to the other countries represented here.
- The United States ranks highest in the world in terms of four-year degree attainment among older adults. Twenty-six percent of the 55- to 64-year-olds (compared to 16 percent in Canada) and 30 percent of 45- to 54-year-olds have completed at least a four-year degree. (OECD, 2004, Table A3.3)

Appendix A

Tables and Sources

Note:

In cases where data are readily available on the Web, URLs are provided. In other cases, this appendix includes data supporting the figures in the body of the report.

Figure 1. Median Earnings and Tax Payments by Level of Education, 2003

	Total Median Earnings	Estimated Income Taxes	Estimated F.I.C.A. Tax	Estimated State/local Taxes	Total Estimated Taxes Paid	Total Estimated After-Tax Income
Professional Degree	\$95,699	\$11,793	\$6,837	\$7,604	\$26,235	\$69,464
Doctorate Degree	\$79,403	\$8,790	\$6,074	\$6,358	\$21,222	\$58,181
Master's Degree	\$59,508	\$5,531	\$4,552	\$4,809	\$14,893	\$44,615
Bachelor's Degree	\$49,889	\$4,072	\$3,817	\$4,051	\$11,940	\$37,949
Associate Degree	\$37,605	\$2,657	\$2,877	\$3,075	\$8,608	\$28,997
Some College, No Degree	\$35,714	\$2,434	\$2,732	\$2,923	\$8,089	\$27,625
High School Graduate	\$30,766	\$1,810	\$2,354	\$2,531	\$6,695	\$24,071
Not a H.S. Graduate	\$21,645	\$844	\$1,656	\$1,812	\$4,313	\$17,332

Source: U.S. Census Bureau, 2004, PINC-03; (<http://ferret.bls.census.gov/macro/032004/perinc/toc.htm>) Internal Revenue Service, 2003, Table 3; www.itpnet.org/wp2000/text.pdf; McIntyre, et al, 2003; www.itpnet.org/wp2000/text.pdf; calculations by the authors.

Figure 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 (5% Discount Rate)	Present Value of Earnings Relative to H.S. Graduates (5% Discount Rate)
Not a H.S. Graduate	\$1,052,647	0.74	\$458,156	0.74
High School Graduate	\$1,418,890	1.00	\$615,864	1.00
Some College, No Degree	\$1,702,780	1.20	\$722,490	1.17
Associate Degree	\$1,769,090	1.25	\$760,017	1.23
Bachelor's Degree	\$2,498,260	1.76	\$1,063,330	1.73
Master's Degree	\$2,865,460	2.02	\$1,220,092	1.98
Doctorate Degree	\$3,897,650	2.75	\$1,630,706	2.65
Professional Degree	\$5,137,355	3.62	\$2,070,207	3.36
Bachelor's Degree or Higher	\$2,834,510	2.00	\$1,182,147	1.92

Source: Day and Newburger 2002; calculations by the authors. <http://www.census.gov/prod/2002pubs/p23-210.pdf>.

Figure 3. Estimated Cumulative Earnings Net of College Costs

Age	High School Graduate			College Graduate		
	Median Annual Earnings	Present Value of Annual Earnings	Present Value of Cumulative Earnings (5% Discount Rate)	Median Annual Earnings	Present Value of Annual Earnings	Present Value of Cumulative Earnings (5% Discount Rate)
18	\$18,734	\$18,734	\$18,734	(\$4,694)	(\$4,694)	(\$4,694)
19	\$18,734	\$17,842	\$36,575	(\$4,694)	(\$4,470)	(\$9,164)
20	\$18,734	\$16,992	\$53,567	(\$4,694)	(\$4,258)	(\$13,422)
21	\$18,734	\$16,183	\$69,750	(\$4,694)	(\$4,055)	(\$17,477)
22	\$18,734	\$15,412	\$85,163	\$24,328	\$20,015	\$2,538
23	\$18,734	\$14,678	\$99,841	\$24,328	\$19,062	\$21,599
24	\$18,734	\$13,979	\$113,820	\$24,328	\$18,154	\$39,753
25	\$26,823	\$19,063	\$132,883	\$41,516	\$29,505	\$69,258
26	\$26,823	\$18,155	\$151,038	\$41,516	\$28,100	\$97,358
27	\$26,823	\$17,290	\$168,328	\$41,516	\$26,762	\$124,119
28	\$26,823	\$16,467	\$184,795	\$41,516	\$25,487	\$149,606
29	\$26,823	\$15,683	\$200,478	\$41,516	\$24,274	\$173,880
30	\$26,823	\$14,936	\$215,414	\$41,516	\$23,118	\$196,998
31	\$26,823	\$14,225	\$229,639	\$41,516	\$22,017	\$219,014
32	\$26,823	\$15,490	\$245,128	\$41,516	\$23,974	\$242,989
33	\$26,823	\$12,902	\$258,031	\$41,516	\$19,970	\$262,959
34	\$26,823	\$12,288	\$270,319	\$41,516	\$19,019	\$281,978
35	\$31,431	\$13,713	\$284,032	\$53,697	\$23,428	\$305,406
36	\$31,431	\$13,060	\$297,092	\$53,697	\$22,312	\$327,718
37	\$31,431	\$12,438	\$309,530	\$53,697	\$21,250	\$348,968
38	\$31,431	\$11,846	\$321,376	\$53,697	\$20,238	\$369,205
39	\$31,431	\$11,282	\$332,658	\$53,697	\$19,274	\$388,480
40	\$31,431	\$10,745	\$343,403	\$53,697	\$18,356	\$406,836

Figure 3. Estimated Cumulative Earnings Net of College Costs (continued).

Age	High School Graduate			College Graduate		
	Median Annual Earnings	Present Value of Annual Earnings	Present Value of Cumulative Earnings (5% Discount Rate)	Median Annual Earnings	Present Value of Annual Earnings	Present Value of Cumulative Earnings (5% Discount Rate)
41	\$31,431	\$10,233	\$353,636	\$53,697	\$17,482	\$424,318
42	\$31,431	\$9,746	\$363,382	\$53,697	\$16,650	\$440,968
43	\$31,431	\$9,282	\$372,663	\$53,697	\$15,857	\$456,825
44	\$31,431	\$8,840	\$381,503	\$53,697	\$15,102	\$471,926
45	\$32,028	\$8,579	\$390,082	\$51,967	\$13,919	\$485,846
46	\$32,028	\$8,170	\$398,252	\$51,967	\$13,256	\$499,102
47	\$32,028	\$7,781	\$406,033	\$51,967	\$12,625	\$511,727
48	\$32,028	\$7,411	\$413,444	\$51,967	\$12,024	\$523,751
49	\$32,028	\$7,058	\$420,501	\$51,967	\$11,451	\$535,203
50	\$32,028	\$6,722	\$427,223	\$51,967	\$10,906	\$546,109
51	\$32,028	\$6,402	\$433,624	\$51,967	\$10,387	\$556,496
52	\$32,028	\$6,097	\$439,721	\$51,967	\$9,892	\$566,388
53	\$32,028	\$5,806	\$445,527	\$51,967	\$9,421	\$575,809
54	\$32,028	\$5,530	\$451,057	\$51,967	\$8,972	\$584,781
55	\$31,658	\$5,206	\$456,263	\$51,646	\$8,492	\$593,274
56	\$31,658	\$4,958	\$461,221	\$51,646	\$8,088	\$601,362
57	\$31,658	\$4,722	\$465,943	\$51,646	\$7,703	\$609,065
58	\$31,658	\$4,497	\$470,439	\$51,646	\$7,336	\$616,401
59	\$31,658	\$4,283	\$474,722	\$51,646	\$6,987	\$623,388
60	\$31,658	\$4,079	\$478,801	\$51,646	\$6,654	\$630,042
61	\$31,658	\$3,885	\$482,686	\$51,646	\$6,337	\$636,379
62	\$31,658	\$3,700	\$486,385	\$51,646	\$6,035	\$642,414
63	\$31,658	\$3,523	\$489,909	\$51,646	\$5,748	\$648,162
64	\$31,658	\$3,356	\$493,264	\$51,646	\$5,474	\$653,637

Sources: U.S. Census Bureau, 2004, PINC-03, PINC-04; <http://ferret.bls.census.gov/macro/032004/perinc/toc.htm> College Board (2003); www.collegeboard.com. Calculations by the authors.

Figure 5. Earnings by Gender and Education Level, 2003: 25th Percentile, Median, and 75th Percentile

	Not a H.S. Graduate	H.S. Graduate	Some College	A.A.	B.A.	Master's	Ph.D.	Prof.
Male								
25th percentile	\$16,879	\$24,431	\$29,392	\$30,694	\$37,993	\$47,963	\$57,281	\$70,350
75th percentile	\$35,338	\$50,037	\$57,552	\$60,371	\$82,349	\$100,000	\$100,000	\$129,853
Median	\$24,121	\$35,412	\$41,348	\$42,871	\$56,502	\$70,640	\$87,131	\$100,000
Female								
25th percentile	\$13,385	\$18,898	\$21,493	\$23,444	\$30,301	\$37,349	\$46,343	\$42,188
75th percentile	\$24,390	\$35,581	\$40,882	\$45,895	\$57,896	\$66,760	\$91,696	\$100,273
Median	\$18,125	\$26,074	\$30,142	\$32,253	\$41,327	\$50,163	\$67,214	\$66,491

Source: U.S. Census Bureau, 2004, PINC-03; <http://ferret.bls.census.gov/macro/032004/perinc/toc.htm>; calculations by the authors.

Note: Includes full-time year-round workers, age 25 and older. Calculations by the authors.

Figure 14a. Reported Voting Rates by Age and Education Level, 2000

Age	Educational Attainment			
	Not a H.S. Graduate	H.S. Graduate	Some College or Associate Degree	Bachelor's Degree or Higher
18 to 24 Years	18%	28%	45%	61%
25 to 44 Years	25%	45%	59%	74%
45 to 64 Years	42%	61%	73%	82%
65 to 74 Years	56%	72%	82%	86%

URL: U.S. Census Bureau, 2002b, Table 5; <http://www.census.gov/population/www/socdemo/voting.html>

Note: Based on self-reporting.

Figure 14b. Reported Voting Rates Over Time by Education Level, 1968–2000 (Percent, Population 18 Years and Over)

	Educational Attainment				
	Less Than 9th Grade	9th to 12th Grade No Diploma	High School Diploma or GED	Some College or Associate Degree	Bachelor's Degree or Higher
2000	26.8%	33.8%	49.4%	60.3%	72.0%
1996	29.9%	41.2%	49.1%	60.5%	72.6%
1992	35.1%	41.3%	57.5%	68.7%	81.0%
1988	36.7%	44.4%	54.7%	64.5%	77.6%
1984	42.9%	45.6%	58.7%	67.5%	79.1%
1980	42.6%	47.2%	58.9%	67.2%	79.9%
1976	44.1%	52.0%	59.4%	68.1%	79.8%
1972	47.4%	61.3%	65.4%	74.9%	83.6%
1968	54.5%	65.4%	72.5%	78.4%	84.1%

URL: U.S. Census Bureau, 2002b, Table A-2; <http://www.census.gov/population/www/socdemo/voting.html>

Notes: Based on self-reporting. Prior to 1972, data are for people 21 years of age and over with the exception of those aged 18 and over in Georgia and Kentucky, 19 and over in Alaska, and 20 and over in Hawaii.

Source: U.S. Census Bureau, Current Population Report, November 2000 and earlier reports.

Figure 16. Annual Savings on Social Programs from Increased Education: Savings for 30-Year-Old Men and Women Relative to High School Dropouts, 2003 Dollars

	Women: Program Savings (2003 dollars)				
	Asian American	Black	Mexican	Other Hispanic	Non-Hispanic White
H.S. dropout to H.S. Grad	\$2,930	\$3,257	\$2,795	\$3,531	\$1,615
H.S. Grad to Some College	\$782	\$1,262	\$2,242	\$1,545	\$494
Some College to College Grad	\$717	\$1,221	\$471	\$966	\$319
	Men: Program Savings (2003 dollars)				
	Asian American	Black	Mexican	Other Hispanic	Non-Hispanic White
H.S. dropout to H.S. Grad	\$4,543	\$8,098	\$4,413	\$4,233	\$2,335
H.S. Grad to Some College	\$523	\$1,242	\$668	\$908	\$433
Some College to College Grad	\$555	\$1,132	\$589	\$676	\$384

Notes: Includes only native-born men and women. Social programs include unemployment compensation, Medicare and Medicaid, food programs, welfare, criminal justice, and other social programs.

Source: Vernez, Krop and Rydell, 1999; <http://www.rand.org/publications/MR/MR1036/>; calculations by the authors.

Figure 31. International Comparison: Completion of Higher Education Ages 25–34, 1992 to 2002

	Percent of 25- to 34-year-olds Who Report Completing a Higher Education Program										
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Italy	7	8	8	8	8	9	9	10	10	12	12
Austria	8	9	9	9	9	12	13	13	15	14	15
Germany	20	20	20	21	20	21	22	22	22	22	22
UK	21	22	23	23	24	25	26	27	29	29	31
France	22	23	24	25	26	28	30	31	32	34	36
Spain	22	24	25	27	29	30	32	33	34	36	37
Belgium	27	29	30	30	32	33	34	34	36	38	38
Sweden	27	27	27	29	28	29	31	32	34	37	39
US	30	31	32	34	35	36	36	37	38	39	39
Canada	33	35	38	40	42	44	45	47	48	51	51

Note: Based on the 25- to 34-year-old population.

Source: OECD, 2004, Table A3.4b; www.oecd.org.

Appendix B

Technical Notes

General Notes:

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

Less than high school: Some of our 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.

Level of education: 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: Estimates of state and local tax payments are based on U.S. averages reported by the Institute for Taxation and Economic Policy (2003). Tax burdens for each income level are imputed based on the payments reported for income brackets. Federal income taxes are based on IRS (2003) data for average tax payments based on AGI categories. Tax payments are based on 2002 tax rates and do not incorporate the 2003 federal income tax rate reductions. Social Security taxes are based on the federal formula in effect in 2003.

Figure 2: The Census Bureau calculations are based on a 40-year work life, from age 25 to age 64, for all workers. No allowance is made for the shorter work life resulting from the time spent in college and out of the labor force. The Census Bureau adds 1999 mean annual earnings at each age level and does not discount earnings that occur in the future. Our estimates follow the Census Bureau methodology using earnings data for 2003, but account for the reduced value of earnings as they are further in the future, using a 5 percent discount rate, compounded for every year beyond the age of 25.

Figure 3: This calculation is based on 2003 median earnings levels. It assumes the college graduate is out of the labor force for four years, at ages 18 through 21, and subtracts the average 2003-04 tuition and fees at public four-year colleges (\$4,694) as reported in *Trends in College Pricing, 2003* for those four years. The estimates for private college graduates subtract the average 2003-04 tuition and fees at private four-year colleges (\$19,710). Tuition payments and earnings are discounted at a 5 percent rate, compounded for every year beyond the age of 18.

Figure 5: Twenty-fifth and seventy-fifth percentiles of income were imputed using the assumption that earners are evenly distributed within \$2,500 income brackets. When the seventy-fifth percentile is in the open-ended upper bracket, the endpoint of the bracket is approximated at two standard errors above the mean of the bracket.

Figure 10: Smoking data are based on a retrospective survey that asked respondents when they started and stopped smoking.

Figure 11: Almost 30 percent of the incarcerated high school graduates hold GED diplomas, not standard high school diplomas.

Figure 16: Estimates from the RAND study are based on 1991 patterns of social program participation and are in terms of 1997 dollars. We have updated the estimates to 2003 dollars using the Consumer Price Index.

Figure 17: The *Digest of Education* reports a moving three-year average for the enrollment rates of Hispanics. We report moving three-year average enrollment rates for whites, blacks, and Hispanics.

Figure 22: Almost half of all college students are classified as independent because they meet at least one of the following criteria: age 24 or older, married, have dependents, are veterans, orphans, or wards of the court. These students are not included in this analysis because parental income is not available for them.

Figure 28: 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.

Figure 30: International comparisons should be interpreted with caution because of differences in the types of institutions and in the patterns of enrollment in different countries.

Figure 31: OECD data on education are self-reported and the types of programs included are not entirely consistent across countries.

Appendix C

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Appendix D

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