

CHAPTER THREE

America's Future Workforce

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ver the next several decades, the strength of the labor force and American global competitiveness will depend on the investments the United States chooses to

make today. With the impending mass retirement of the Baby Boom generation, the nation faces serious shortages in its workforce. Fortunately, however, this workforce shift coincides with a national demographic shift that will result in communities of color growing in size across the country. Fulfilling the potential of this young, dynamic, and

growing generation requires reforming current education and job-training investments to make sure that it is well prepared to keep the United States competitive in the global economy.

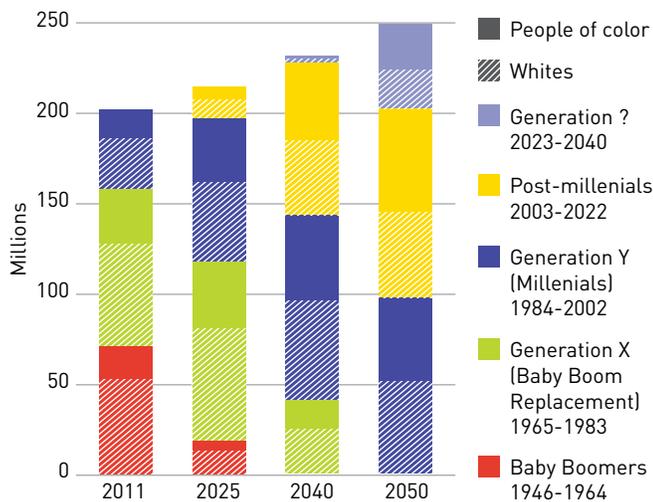
Our changing labor force

The Baby Boomers retiring in 2013—an estimated 10,000 turn 65 each day, according to the Pew Research Center¹—are predominantly white, and by 2025 the majority of Baby Boomers will have exited the labor force entirely. The replacement labor force—those individuals born between 1965 and 1983—is also predominantly white as well in 2013, but as time progresses, this group will become increasingly people of color. By 2041 whites will be a minority in the population and just four years later, in 2045, they will be a minority in the labor force as well. Projections for 2050 show that the Baby Boom generation and the generation that replaced them will be long retired. As a matter of fact, the people who will be of prime working-age in 2050 have not even been born yet.

The trend is abundantly clear. People of color are increasingly entering the labor force in record numbers, accessing postsecondary education and training in record numbers, and graduating from our nation’s secondary and postsecondary institutions in record numbers as well. People of color are indeed moving in the right direction. But there are some potential problems ahead that might hinder both the economic prosperity of our populations of

FIGURE 1
Labor force by generation, and whites and people of color, 2013–2050

In the five generations displayed below, America’s people-of-color population is fast growing. Whites will no longer be the majority by 2040.



Source: Authors’ analysis of Bureau of Labor statistics data. Designed and created by Juan Carlos Guzman, director of research at the Institute for Latino Studies, University of Notre Dame.

color as well as the economic prosperity of our nation.

An education gap for people of color

The correlations that exist between labor-force participation and race, educational attainment and race, and lifetime earnings and race are undeniable. The major challenge is the disconnect that exists between the current educational attainment of people of color and the profile of education demand in the economy. This is especially true for African Americans and Hispanics, who will increase their share of the labor force from 27 percent in 2010 to 42 percent in 2050, when the share of white workers will fall to 45 percent, down from 66 percent in 2010.² (see Figure 2)

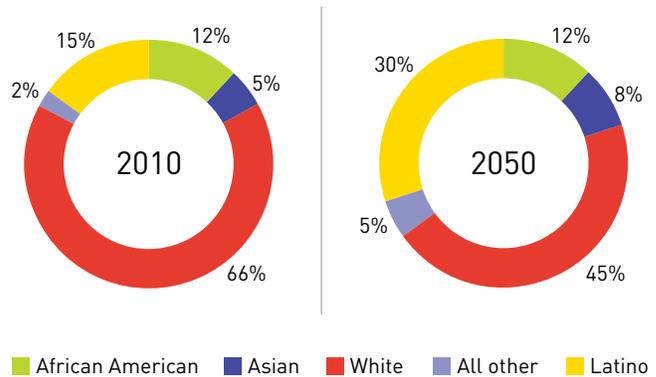
As America's diversity increases, we rely on the educational system, especially our public education system, for mediating broad cultural inclusion and preserving an increasingly diverse national heritage. Since industrialization we have looked to education to help us reconcile democratic citizenship with class differences and various forms of diversity. Education has also been a common route to economic success since the closing of the frontier, and has been the preferred path to good jobs in the post-World War II era.

It is not news that education is a favored institution to promote inclusion. What is news is that since the early 1980s, access to postsecondary education has emerged as not only the preferred route

FIGURE 2

Labor force by race, 2010 projected through 2050

The share of whites in the labor force will decline by 19 percentage points, while the share of African Americans and Latinos combined will increase by 15 percentage points by 2050.



Source: U.S. Bureau of Labor Statistics

to the middle class but also the most well-traveled pathway to middle-class earnings for individuals and, for the nation, the best way to ensure economic competitiveness. Since 1983, however, the supply of college-educated workers in the United States hasn't kept up with demand.³

As the world changed and innovation became ubiquitous to many traditional occupations, the demand for skills favored those with a postsecondary education. This change inadvertently melted away the premium offered to union membership—a majority of union members have high school educations—in favor of workers with postsecondary education, especially as computers both substituted and complemented production occupations.⁴

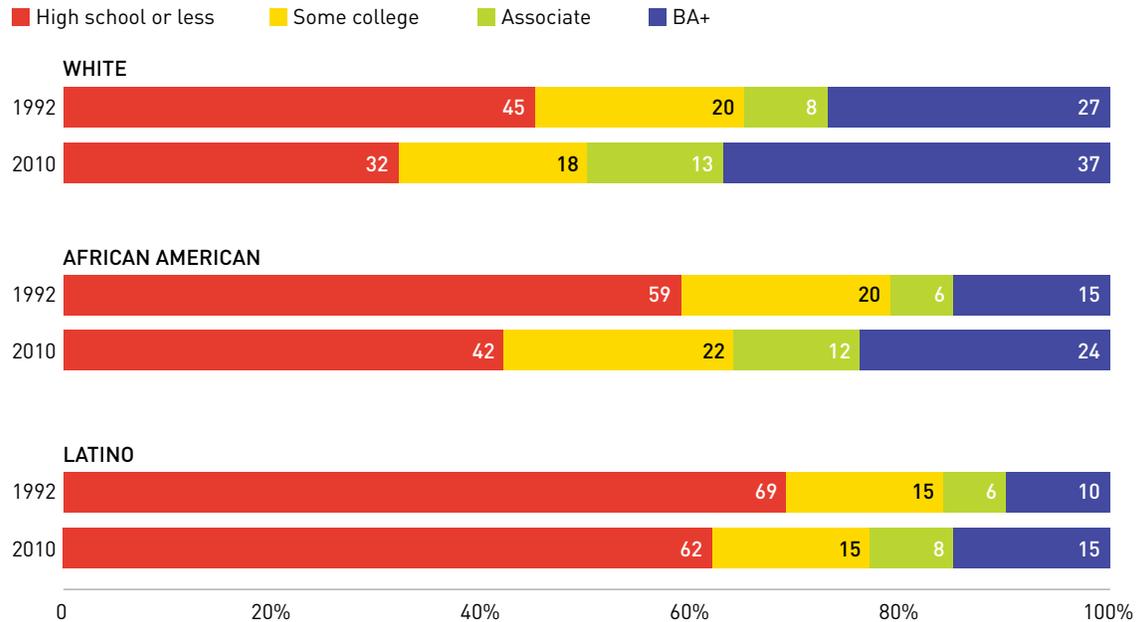
Demand for postsecondary education and training for the nation as a whole continued to grow at an average annual rate of 3 percent, while the share of workers with post secondary education grew by 1 percent annually. As a consequence, the wage premium for college compared to high school increased from 40 percent to 74 percent over this time period, between 1980 and 2010.⁵ The failure to provide the U.S. workforce with enough postsecondary education and training to keep up with the demands of

the information economy is one of the principal causes of the growth in wage inequality since the early 1980s.

Since the end of the 1980–1981 recession, the U.S. economy has been undergoing rapid structural change. This evolution has been driven by what economists call skill-biased technological change. That is to say, a shift in production related to technological advances that favors skilled labor

FIGURE 3
Education attainment by race

Latino workers are falling behind faster than any other ethnic group—38 percent of Latinos had postsecondary education in 2010, while 59 percent of jobs required postsecondary education in 2010.



Source: Current Population Survey

over unskilled labor. Since the early 1980s, technology, led by computing technology, has been automating repetitive tasks and activities in jobs. As a result, more and more jobs, tasks, and activities left to people at work are nonrepetitive and require skills beyond a high school education. The resultant increasing entry-level skill requirements for work have made postsecondary education the gatekeeper for access to training on the job and state-of-the-art technology. The synergy between postsecondary preparation and formal learning on the job accounts for a growing major share of the ingredients in the recipe for U.S. economic growth. Consequently, postsecondary education and training has become more important than ever in today's economy.

In 1973, when 72 percent of all jobs required a high school diploma or less, 68 percent of working whites had a high school diploma or less. The comparable percentages for African Americans and Hispanics averaged 15 percentage points higher than that for the white population at 82 percent and 85 percent respectively. Almost four decades later in 2010, 59 percent of the nation's jobs required postsecondary education and training beyond high school.

While the white population has kept up with education attainment at a pace that remains similar or greater than workforce requirements—68 percent of the white population had postsecondary education in 2010—African Americans, and even more so, Hispanics, have fallen behind. In 2010, 48 percent

of African Americans had postsecondary education. For Hispanics that number was 62 percent—close to white attainment levels four decades earlier.

Though enrollment of students of color has increased at a steady clip in postsecondary institutions, graduation and attainment rates remain wanting. What this means over the long run is a likely growing skills gap between attainment levels and skills requirements of jobs as the fastest-growing ethnic group—Latinos—has current attainment rates that are decades behind the requirements of 21st-century jobs.

The educational system is becoming increasingly polarized

There is far more diversity among young people than in the adult population, and thus the share of people of color attending college increases each year. Underlying the higher enrollment levels by students of color, however, are lower completion and persistence rates that have a great deal to do with preparation, but even more to do with the selectivity of schools that students of color tend to gravitate toward—open-admission four-year colleges and two-year colleges.⁶

Meanwhile, as postsecondary access has increased especially among communities of color, whites and people of color are on separate postsecondary pathways. Between 1994 and 2008, 68 percent of new African American enrollment and 72 percent of new



In a photo from April 10, 2013 in Detroit, Gregory Pierre assembles wristwatch mechanisms at the Shinola manufacturing facility.

AP PHOTO/CARLOS OSORIO

FIGURE 4

Growth in college enrollment by race

■ Hispanic ■ African American ■ White

GROWTH RATE OF ENROLLMENT AT OPEN-ADMISSION FOUR-YEAR COLLEGES AND TWO-YEAR COLLEGES



GROWTH RATE OF ENROLLMENT AT MOST SELECTIVE FOUR-YEAR COLLEGES



Source: Georgetown University Center on Education and the Workforce, "Analysis of Integrated Postsecondary Education Data System (IPEDS) data 1995-2009."

Hispanic enrollment has been at four-year colleges with open-admission policies and two-year colleges. (see Figure 4) Over the same time period, 82 percent of new white enrollment has been at the 464 most selective four-year colleges.

Whites who have moved more and more into the selective four-year colleges receive more educational resources, which leads to an 82 percent completion rate, access to graduate school, and somewhere between \$2.3 and \$3.7 million in median lifetime earnings. By way of contrast, African Americans and Hispanics are tracked into the least selective four-year colleges and the overcrowded and underfunded community colleges, leading to a 49 percent completion rate and median lifetime earnings of \$1.6 million.⁷

White students are fleeing the lower echelons of the postsecondary hierarchy and moving up into the more highly funded tiers of college selectivity. At the same time, African Americans and Hispanics are crowding into the underfunded, overcapacity, and

nonselective four-year colleges and community colleges. African Americans have stalled in their move up the selectivity tiers and 73 percent of them are still concentrated in the least funded tiers—community colleges and less-selective schools.

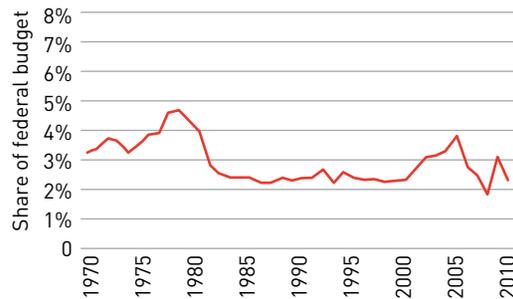
While a larger share of Hispanics gained access to college education, the gap in the Hispanic share of college enrollments relative to their share of the 18- to 24-year-old population has not budged—there are 5 percentage points fewer Hispanics in college than in this youth population.

The federal government is spending less on education and training as a share of all spending now that it did four decades ago

While the value of education and training has increased significantly in the modern economy, as evidenced by the growing college-wage premium,

the increasing demand for more highly educated workers from employers, and the rising share of high-skill occupations, the share of government spending invested in these human-capital-development functions has remained roughly flat over the past 40 years and is currently at historically low levels. Federal investment in human-capital development declined from 3 percent of the budget in 1970 to 2 percent in 2011. (see Figure 5)

FIGURE 5
Investment in education, training, and employment as share of federal government spending, 1970–2011



Source: Office of Management and Budget, "Table 3.2—Outlays by Function and Subfunction: 1962-2017," Historical Tables.

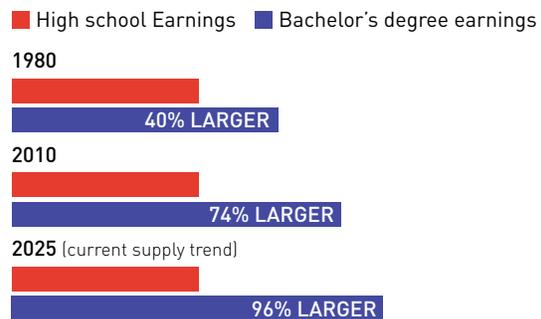
Likewise, employment and training programs such as the Workforce Investment Act have declined as a share of federal spending on human-capital development. These programs provide irreplaceable training, support, and labor-market services that connect education and training to real jobs. Yet these programs continue to be devalued by the federal government. In 1980, 34 percent of human-capital investments by

the federal government (budget function 500) were spent on job-training and employment services. By 2010 the share had decreased to 9 percent.⁸

Higher-level degrees are worth more than lower-level degrees on average, but averages are deceiving

Since the 1980s the median earnings for those with more postsecondary education increased—that is, those workers with higher postsecondary education attainment levels do better and better relative to those with no postsecondary education or those with less postsecondary education. Obtaining a postsecondary credential is almost always worth it as evidenced by higher earnings over a lifetime.

FIGURE 6
The growing college-wage premium over high school
The college-wage premium over high school grew from 40 percent in 1980 to 74 percent in 2010, and will grow to 96 percent by 2025.



Source: Anthony P. Carnevale and Stephen J. Rose, "The Undereducated American" (Washington: Georgetown University Center on Education and the Workforce, 2011).

Studies show that the higher the level of educational attainment, the higher the payoff. What's more, the gap is widening. In 2002 someone who attained a bachelor's degree could expect to earn 75 percent more over a lifetime than someone with only a high school diploma. Today, that premium is 84 percent.⁹

Even at the height of the Great Recession, the premium paid to holders of a bachelor's degree was substantial. Earnings of college graduates declined slightly during the recession but held up in the recovery. Yet on average, college graduates still earn nearly twice as much as high-school graduates. (see Figure 6)

The other major trend since the 1980s is that an individual's employability and earnings increasingly depend on his or her field of study in postsecondary programs. There are significant earnings variations between different levels of educational attainment depending on postsecondary fields of study. Consider the following:

- 42 percent of people with some college/no degree earn more than the median earnings of workers with an associate's degree.
- 28 percent of people with an associate's degree make more than the median of workers with a bachelor's degree.¹⁰

To put it in the simplest of terms: What you make depends more and more on what you take. Often-times, lower-level programs outperform higher-level

degrees. Consider, if you will: Men with only one-year certificates in fields such as computers, electronics, and engineering earn more than a substantial number of people with associate's degrees and bachelor's degrees.

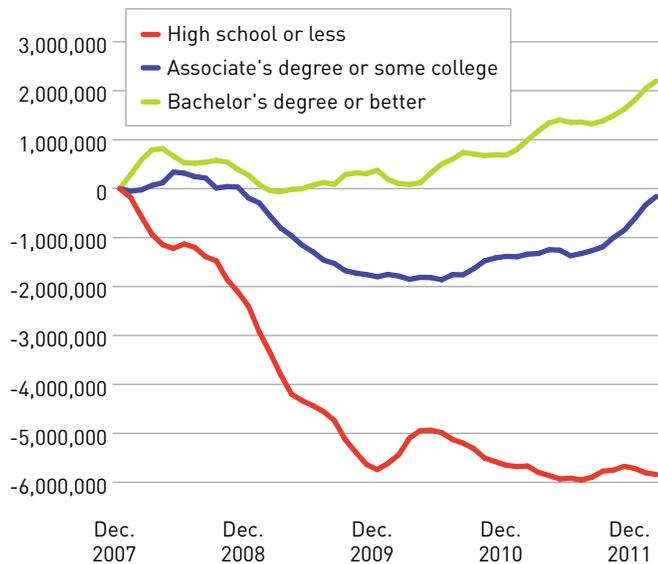
Postsecondary vocational certificates have been offered to many as a short-term stepping stone along the education pathway. For many, the road to a postsecondary certificate is not necessarily linear, and many may choose to revert to this credential after having earned associate's degrees or better. For those whose highest level of attainment is a postsecondary vocational certificate, however, the benefits of this credential often depends on gender.

Moreover, postsecondary vocational certificates are a mixed bag. Depending on the field of study chosen and whether or not you work within specific fields, some certificates can be quite profitable and lead to jobs that pay rates above the median earnings for workers with similar credentials. Vocational certificate holders acquire job-specific skills that can be rewarded in the labor market above and beyond their general academic skills. But a large proportion of certificates lead to jobs that pay low wages on average, particularly those certificates in fields that are dominated by women such as cosmetology and food services. These are professions where average earnings can be lower than those for workers with a high school diploma who have not completed a certificate—especially if they do not work in fields with a workforce overly represented by women.

FIGURE 7

Job growth in the recession and recovery

During the recession and recovery, only holders of bachelor's degrees experienced positive job growth. The steepest losses were felt by workers with a high school education.



Source: Anthony P. Carnevale, Tamara Jayasundera, and Ban Cheah, "The College Advantage: Weathering the Economic Storm" (Washington: Georgetown University Center on Education and the Workforce, 2012).

For many young people, choosing a postsecondary program is their first big investment decision, especially for the majority of students who will finance their postsecondary programs with loans. These students need to understand the risks and rewards associated with their choice of colleges and fields of study. As the cost of particular certificates and degrees grows and the labor-market returns shift, prospective students need more information to guide their choices and to insure high returns on their investments.

Vocational certificates are disproportionately held by students of color (15 percent of African American and 13 percent of Latino students, compared to 8 percent of white students enrolled in certificate programs). Three types of institutions are primarily responsible for awarding certificates: private for-profit schools, public nonprofit schools, and private nonprofit schools. Most of these institutions are classified as two-year institutions, and the majority of their student body consists of students of color.¹¹

Post-recession growth has favored workers with postsecondary education

Since the beginning of the Great Recession, historically high unemployment among recent college graduates has hidden the continued structural shift from an economy that provided good-paying jobs for high-school-educated workers to an economy in which the vast majority of good-paying jobs require at least some postsecondary education.

What is clear in the Great Recession, as in the last several recessions, is that most of the jobs lost were ones that required a high school diploma or less, and those jobs are gone and are not coming back. On the other hand, jobs that require at least some college will continue to recover and grow as a share of all jobs. To date, almost half of the jobs lost in the Great Recession have been recovered, and virtually all of those recovered jobs required some form of postsecondary education.¹²

The Great Recession also impacted wages as earnings declined for all workers since the beginning of the economic downturn. But college-educated workers' wage advantage over high-school-educated workers has remained high and has held mostly stable since the recession began. Moreover, the peak unemployment rate for college-educated workers in the Great Recession was 5.1 percent compared to 15.7 percent for high school dropouts. The current unemployment rate for college-educated workers is 3.7 percent, compared to 12 percent for high school dropouts.

Although the unemployment rate for all college-educated workers has been low, it has been a tough job market for new college graduates. But the job market has been far worse for those without a college education. In 2012, 7 percent of new college graduates were still unemployed and another 14 percent were underemployed in jobs beneath their skill levels.¹³ By comparison, the unemployment rate for new high school graduates in 2012 was 24 percent and 42 percent for those underemployed.¹⁴

Jobs that require a bachelor's degree have been the big winner, increasing by 2.2 million jobs since the recession began. Jobs that required some college or an associate's degree declined by 1.8 million in the recession, but 1.6 million of those job losses have been regained since the beginning of the recovery in 2010. At the same time 5.8 million jobs for those with high school or less have been lost since the recession began.¹⁵

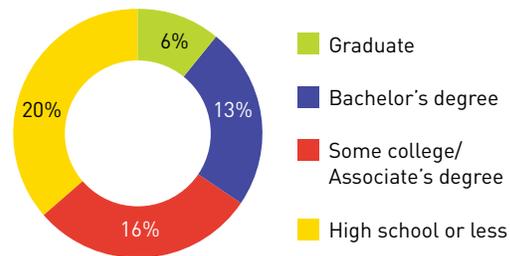
Demand for postsecondary education and training will continue to grow

Projections over the next 10 years show that if the recovery continues, there will be 55 million job openings, due to 24 million new jobs added to the economy and 31 million openings from Baby Boomer retirements. Two-thirds of these job openings—36 million—will require some education beyond high school, but we will not have enough workers to fill those jobs and will fall short by an estimated 5 million workers. (see Figure 8)

Figure 8

Job openings by education requirement, 2010–2020

Two-thirds of the job openings between 2010 and 2020 will require some postsecondary education.



Source: Anthony Carnevale and Jeff Strohl, "Separate and Unequal" (Washington: Georgetown University, Center on Education and the Workforce, forthcoming).

Table 1

Job changes by education level in the recession and recovery

Job gains by individuals with bachelor's degrees or better made up for more than a third of job losses by those with a high school diploma during the recession and recovery.

Educational attainment	Job change			Percent job change		
	Recession*	Recovery**	Net change***	Recession*	Recovery**	Net change ***
High school or less	-5,611,000	-230,000	-5,841,000	-10%	0%	-10%
Some college/ associate's degree	-1752,000	1,592,000	-160,000	-4%	4%	0%
Bachelor's degree or higher	187,000	2,012,000	2,199,000	0%	4%	5%
All	-7,176,000	3,374,000	3,374,000	-5%	2%	-3%

Source: Carnevale and others' 2012 analysis of CPS data. * Recession: The period from December 2007 to January 2010 ** Recovery: The period from January 2010 to February 2012

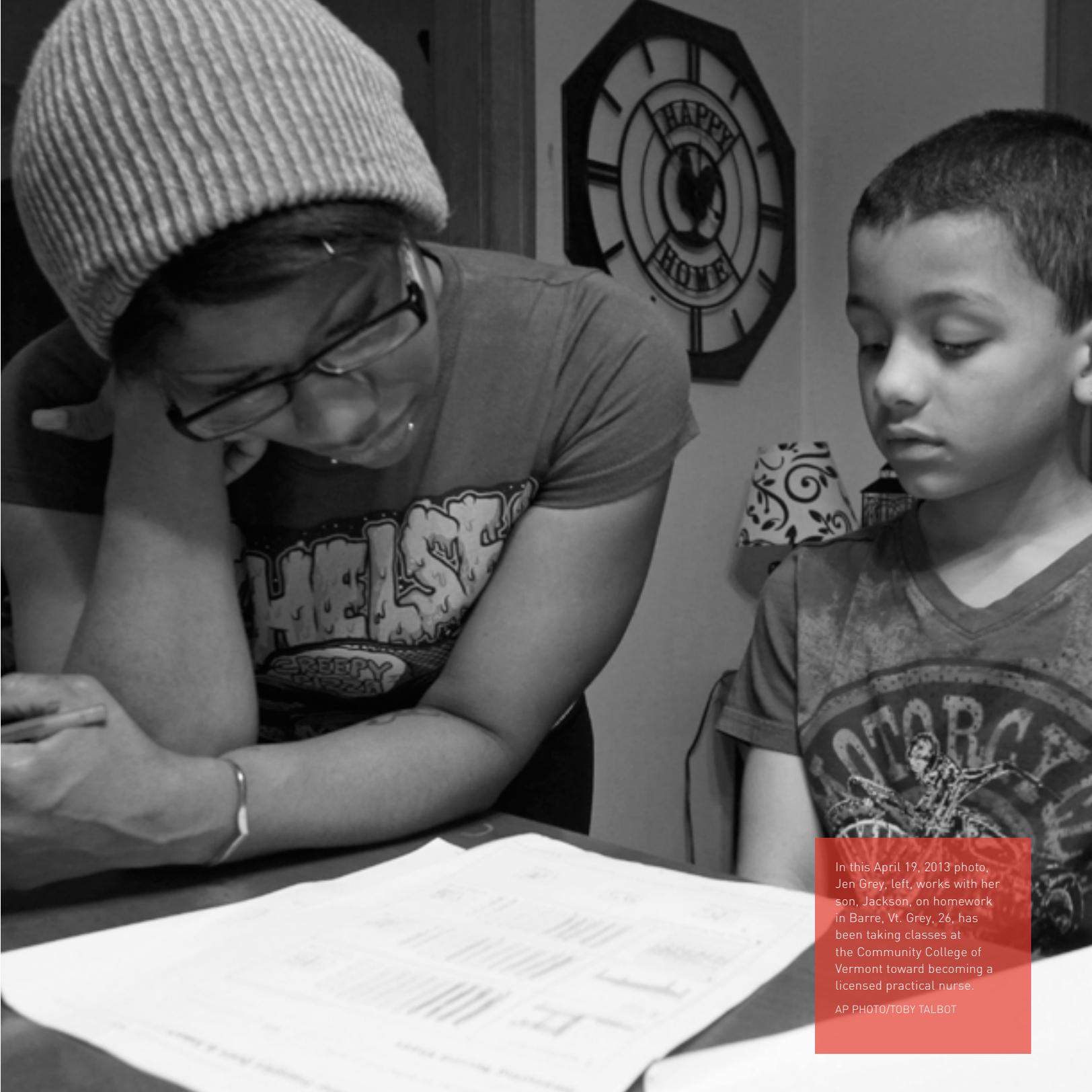
*** Net change: The period from December 2007 to February 2012

As access to postsecondary education determines earnings, college completion is a major source of the intergenerational transfer of privilege

In the United States, compared to other countries, the circumstances into which you are born play a greater role in where you end up as an adult. The United States ranks first in the extent to which parental education determines an individual's future educational attainment. That is, if a parent has a college education, it is very likely that his or her child will have one also. If a parent has a high school education, however, it is far harder in the United States than in other OECD countries for his or her child to obtain a college degree.

Conclusion

Our growing reliance on education as the arbiter of individual opportunity results from mutually reinforcing economic and cultural trends. Changes in the real economy have been reinforced by social trends that emphasize individualist and market biases in American culture and politics. Americans welcome our increasing reliance on education as the arbiter of opportunity because, in theory, education allows us to expand opportunity without surrendering individual responsibility. After all, we each have to do our own homework to make the grades and ace the tests, which seems fair in a society that prefers to reward individual merit and character. But is it fair?



In this April 19, 2013 photo, Jen Grey, left, works with her son, Jackson, on homework in Barre, Vt. Grey, 26, has been taking classes at the Community College of Vermont toward becoming a licensed practical nurse.

AP PHOTO/TOBY TALBOT

Not really, especially when students fail to receive the same preparation in advance of those tests and grades. In a society where people start out unequal, facing different circumstances and receiving varying levels of familial and societal support, educational success measured by test scores and grades can become a dodge—a way of laundering the found money that comes with being born into the right bank account or the right race.

We know that our future workforce will look different and have different needs. We also know, fortunately, that our population is growing in a way that could enable us to fill these needs. Yet unless we make the right investments today in preparing the next generation to take the jobs of the future, we

will lose out on this advantage, watch our workforce shrink, and fail to succeed in the global economy. Ultimately the economic role of postsecondary education, especially its role in preparing American youth for work and helping adults stay abreast of economic change, is central. The inescapable reality is that ours is a society based on work. Those who are not equipped with the knowledge and skills necessary to get and keep good jobs are denied full social inclusion and tend to drop out of the mainstream culture, polity, and economy.

With growth, productivity, and competitiveness at stake, America needs to work harder to improve the educational outcomes in our fast-growing communities of color. ■

Endnotes

- 1 D'Vera Cohn and Paul Taylor, "Baby Boomers Approach 65—Glumly" (Washington: Pew Research Center, 2010), available at <http://www.pewsocialtrends.org/2010/12/20/baby-boomers-approach-65-glumly/>.
- 2 As the share of whites declines, Hispanics and Asians pick up the slack, mostly due to the relatively higher birth rates of populations of color and predominantly white male baby-boom retirement.
- 3 Claudia Goldin and Lawrence F. Katz, *The Race between Education and Technology* (Cambridge: Belknap Press of Harvard University Press, 2010).
- 4 Anthony Carnevale and Stephen Rose, "The Undereducated American" (Washington: Georgetown University Center on Education and the Workforce, 2011), available at <http://cew.georgetown.edu/undereducated/>.
- 5 Ibid.
- 6 Anthony Carnevale and Jeff Strohl, "Separate and Unequal" (Washington: Georgetown University Center on Education and the Workforce, forthcoming).
- 7 Ibid.
- 8 Anthony P. Carnevale, Testimony before the U.S. Senate Committee on The Budget, "The Impact of Federal Investment on People, Communities and Long Term Economic Growth," February 26, 2013, available at http://www.budget.senate.gov/democratic/index.cfm/files/serve?File_id=1258374a-6445-40e0-ad29-4f794ed2b21c.
- 9 Carnevale and Rose, "The Undereducated American."
- 10 Anthony Carnevale, Nicole Smith, and Jeff Strohl, "Help Wanted, Projections of Jobs and Education Requirements Through 2018" (Washington: Georgetown University Center on Education and the Workforce, 2010), available at <http://cew.georgetown.edu/jobs2018/>.
- 11 Anthony Carnevale, Stephen Rose, and Andrew Hanson, "Certificates: Gateway to Gainful Employment and College Degrees" (Washington: Georgetown University Center on Education and the Workforce, 2012), available at http://www.insidehighered.com/sites/default/server_files/files/06_01_12%20Certificates%20Full%20Report%20FINAL.pdf.
- 12 Anthony Carnevale, Tamara Jayasundera, and Ban Cheah, "The College Advantage: Weathering the Economic Storm" (Washington: Georgetown University Center on Education and the Workforce, 2012), available at <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/CollegeAdvantage.ExecutiveSummary.081412.pdf>.
- 13 Ibid.
- 14 Ibid.
- 15 Ibid.

QUICK VIEW

America's Future Workforce



he demographics of our labor force are changing rapidly. Today Baby Boomers—those born between 1946 and 1964—are predominantly white, but these workers will exit the labor force by 2025. The replacement labor force, “Generation X”—those individuals born between 1965 and 1983—is also predominantly white today. But as “Generation Y”—those born in the mid-1980s through 2000—enters the labor market the American workforce will increasingly be comprised of people of color. Ultimately by 2050, if not sooner, people of color will be the majority in the American labor force.

Reading those facts and looking at the inequities that exist in America, the question arises: As a nation, are we taking steps to ensure that everyone has the opportunity to participate and contribute in the 21st-century global economy?

American jobs require ever higher levels of education and skills: Within a decade from now, two out of every three job openings will require some postsecondary education, and the number of jobs requiring a high school diploma or less will continue to decline. But while people of color are making great strides in education, they are still lagging behind in terms of educational attainment. Only 38 percent of Latinos and 58 percent of African Americans have some postsecondary education.

As America's diversity increases, we must speed up the educational progress for communities of color and expand opportunity to all Americans to ensure that the nation maintains global economic competitiveness. Smart investments in education and job training at the federal and state level will ensure people of color can access the best jobs, earn family-supporting wages, and contribute to a strong American economy. ■

Facts at a glance

- **42 percent:** The share of the workforce that African Americans and Hispanics will comprise in 2050, compared to 27 percent today
- **15 percent:** The percentage of the Latino/Hispanic population with a bachelor's degree or above in 2010, compared to 37 percent of the non-Hispanic white population and 24 percent of the African American population
- **66 percent:** The share of jobs, by 2020, that will require at least some postsecondary education
- **74 percent:** The wage premium for college graduates compared to workers who have only completed high school
- **\$1.6 million:** The expected median lifetime earnings of high school and community college graduates, compared to \$2.3 million and \$3.7 million for holders of bachelor's and graduate degrees
- **72 percent:** The increase in postsecondary access for Hispanics—compared to 68 percent for African Americans and 0.03 percent for whites—between 1994 and 2008 at two- and four-year open-admission institutions

Endnotes

- 1 Mitra Toossi, "Projects of the labor force to 2050: a visual essay" (Washington: Bureau of Labor Statistics, 2012), available at <http://www.bls.gov/opub/mlr/2012/10/art1full.pdf>.
- 2 Ibid.
- 3 Georgetown University Center on Education and the Workforce projections, forthcoming.
- 4 Anthony Carnevale and Stephen Rose, "The Undereducated American" (Washington: Georgetown University Center on Education and the Workforce, 2011), available at <http://cew.georgetown.edu/undereducated/>.
- 5 Anthony Carnevale and Jeff Strohl, "Separate and Unequal" (Washington: Georgetown University Center on Education and the Workforce, forthcoming).
- 6 Georgetown University Center on Education and the Workforce, "Analysis of Integrated Postsecondary Education Data System (IPEDS) data 1995-2009."