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More College Graduates Needed

October 13, 2010, 5:07 pm

By [Kevin Carey](#)

It was released three months ago but if you haven't yet you really should read Anthony Carnevale, Nicole Smith, and Jeff Strohl's comprehensive-yet-accessible [Projection of Jobs and Education Requirements Through 2018](#). Their top-line conclusion is that conventional Bureau of Labor Statistics forecasts systematically underestimate the number of future jobs that will require college degrees:

Compare, for example, the results of a simple test pitting our methodology against the Bureau's. In its 1998 forecast, which covered a 10-year timeline through 2008, the Bureau under-predicted how many workers in the U.S. labor force would have Associate's degrees or better by 19 million. That projection was off by 47 percent. Our methodology, for that same period, over-predicted postsecondary educational demand by about 2 million workers—an error rate of just 4 percent.

Unfortunately, the poor quality of the official projections cascades downward through state and local data systems into the hands of policy makers. These numbers are not the only factor that determines policy, but they are the only data available on the economy's demand for postsecondary education. Because the official data consistently underestimate the demand for postsecondary education, they encourage a consistent bias against investing in postsecondary education and training.

Carnevale et al project that the U.S. is on track to under-produce postsecondary graduates by 3 million by 2018. The lost opportunities for those millions will be significant, because:

Education, workplace training, and workplace technology tend to be sequential and complementary in producing productivity and earnings. Higher levels of formal education not only increase access to jobs that provide further training, they also increase access to technology that complements, rather than replaces, skills....Postsecondary education has become the threshold requirement for a middle-class family income...while it is true that the middle class is declining, a more accurate portrayal of the American class dynamic would be to say that the middle class is dispersing into two opposing streams of upwardly mobile college-haves and downwardly mobile college-have-nots.

The recent great recession is going to accelerate this trend. In the middle of the 20th century, many workers got their jobs back during economic recoveries—plant shuts down, plant opens back up again. Starting with the 1981 recession, that changed. If the plant opened up again, it was overseas. The new jobs grew in different places and required higher levels of skill. So:

For many, a full recovery [from the latest recession] will be a hollow accomplishment. Hundreds of thousands of low-skill jobs in manufacturing, farming, fishing, and forestry have been permanently destroyed because the recession has further prompted employers to either automate those positions or ship them offshore to take advantage of cheap labor. Overall, we project 637,000 jobs in the Manufacturing and Natural Resources industries will meet such fates by 2018. The jobs that replace them will be very different kinds of jobs, requiring very different kinds of workers—and very different kinds of preparation.

By 2018, the economy will create 46.8 million openings—13.8 million brand-new jobs and 33 million "replacement jobs," positions vacated by workers who have retired or permanently left their occupations. Nearly two-thirds of these 46.8 million jobs—some 63 percent—will require workers with at least some college education....This growth in demand for postsecondary education dovetails with two major trends. First, the fastest-growing industries—such as computer and data processing services—require workers with disproportionately higher education levels. Second, over time, occupations as a whole are steadily requiring more education.

The second point is crucial, and also the source of the Bureau of Labor Statistics' problems with underestimation:

Over the past several decades, about 70 percent of the increase in requirements for postsecondary training has stemmed from upgrades in skills demanded by occupational categories that previously did not require higher education. What we called a "foreman" or "manufacturing supervisor" in the 1960s, for example, has since morphed into new occupations that now require postsecondary education, including the modern manufacturing engineer.

Some argue that that the cart is pulling the horse here—that public policies subsidizing and encouraging college participation have produced new college graduates that companies would have hired anyway. But this ignores other profound changes in society over the same span of time:

What is driving this transformation of the American economy? In a word: technology...the economic history of the United States is one of lock-step progression between technology and educational attainment. Integral to this trend is a concept borrowed from labor economics, known as "skill-biased technological change." This simply means that technological development and the organizational changes that come with it favor workers with more education because they have the expertise needed to handle more complex tasks and activities. Demand for these workers, in turn, grows across the board as the technology spreads throughout the economy. In this case, the technology in question is information technology. Like electricity in the industrial age, the computer is a general purpose technology that works across industries and in the larger society....

The penetration of information technology also has fueled a fundamental change in how businesses are organized. The industrial economy featured two dominant organizational formats—the rigid top-down hierarchies of mass production, and the chaotic atomization of professional services, such as healthcare, education, or business services. The top-down behemoths could deliver standardized goods at low prices, but had little flexibility; service industries provided variety, but little consistency. Now, though, the top-down structure of manufacturing and the fragmented structure of the services sectors are converging in a new format that tries to minimize the weaknesses of each, meld the strengths of both, and add some new twists.

The new format emphasizes flexible networks accountable to common performance standards. As a result, production processes are now just as likely to use goods and services produced by other organizations as those produced in-house. Meanwhile, service and professional industries are often aligned by such standards, pointing everyone toward well-defined outcomes. In medical fields, for instance, health maintenance organizations (HMOs) have helped standardize the delivery of care.

These flexible networks, which now dominate the knowledge economy, require communication and information technologies that allow organizations to connect easily with one another and with their customers. Here, then, is where skill-biased technological change goes to work. Increases in organizational complexity lead to an ever-increasing bias toward skilled and educated workers, because they need more knowledge and training to handle that complexity. Increases in educational attainment, in turn, result in efficiency and productivity gains when better-trained workers are paired with the technologies that make the networks possible. The result is predictable—demand for better-prepared workers goes up.

On the flip side, information technology can depress demand for workers with only high school diplomas or less. Available evidence shows that information technology tends to substitute for the narrow and repetitive work tasks that require low-skilled workers in many industries—which is why many lower-level jobs tend to disappear forever in recessions.

The report projects how all of this will break out among different occupation types and levels of credentialing. The growth in jobs requiring a college degree comes from three places: huge employment sectors like blue collar and food services that are relatively education non-intensive but not *entirely* so, and thus create a significant number of college jobs because of sheer scale; smaller but fast-growing and highly education-intensive occupations like STEM, healthcare professional, and education; and the giant “Sales and Office Support” category which more or less splits the difference.

There’s a lot more, read the whole thing.

An interesting aspect of this debate is the fact that elements of both the left and the right have an interest in understating the demand for college credentials. The right critique consists of a loose mishmash of Charles Murray-esque genetic determinism, old-fashioned class bias, and a general antagonism toward the powerful claims that higher education subsidies have on the public treasury. Basically, rich people pining for the days when their servants were inexpensive and not clamoring for a taxpayer-subsidized college education. On the left, labor unions read “college degrees are in demand and will get you a good salary” and hear “and therefore you don’t need a union to get you a good salary.” This is tangentially related to the “[helping poor students learn keeps them poor](#)” school of thought; both begin with some defensible observations about the limitations of education before quickly proceeding to paranoia and outright anti-educationalism.

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The Chronicle of Higher Education 1255 Twenty-Third St, N.W. Washington, D.C. 20037