Anthony Carnevale, professor and director of the Georgetown University Center on Education and the Workforce

America is ill prepared for the majority minority workforce projected by 2042

A Civic Caucus Focus on Human Capital Interview

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Present

John Adams, Dave Broden (vice chair), Pat Davies, Paul Gilje (executive director), Randy Johnson, Dan Loritz (chair), Dana Schroeder (associate director). By phone: Tom Abeles, Anthony Carnevale, Terri Cheney (Association for Talent Development), Sallie Kemper (associate director), Clarence Shallbetter.

Summary

By 2042, the workforce will be majority minority, according to Anthony Carnevale of Georgetown University. But he says we are doing nothing to prepare for the huge skill problem that transition will cause. We are not adequately preparing large numbers of African Americans, Hispanics, immigrants and low-income people for that new economy. In fact, he says, there is a growing stratification between higher income kids who've been raised in affluent neighborhoods and attended the "right" schools and those who haven't had those opportunities. The share of white students at elite colleges keeps increasing, relative to their share of the population, while minorities are more and more concentrated in two-year colleges and open admission colleges, where the outcomes are not as good.

Yet Carnevale points out that we spend over $1 trillion a year on the American system for human capital development. Beyond the $600 billion we spend on K-12 education, we spend $450 to $490 billion for postsecondary education and $415 billion to $515 billion for formal employee training and informal on-the-job learning.

Does the economy get enough of the skills it needs to justify this spending? Using the example of computer-based skills, Carnevale explains how employers first had to buy computer skill, because it wasn't available in schools in any sufficient quantity. As the demand for the skill continued to grow, training was passed back into the education system. But educational institutions have not responded quickly enough, he points out, so technology change has far outpaced our ability to respond on the skills side.

In the 1970s, 75 percent of workers had high school diplomas or less and were able to advance through on-the-job training. But in 1983, Carnevale says, there was a restructuring of the economy and employers started looking for higher skill levels in their entry-level employees. He contends that by 2018, 70 percent of the jobs in Minnesota will require some level of postsecondary education. While this forecast has generated some controversy, Carnevale stands by it, explaining that his measure of need for postsecondary education is whether workers can earn a living wage without it. He argues that they cannot.

Biography

Anthony Carnevale is research professor and director of the Georgetown University Center on Education and the Workforce, a position he has held since the Center was created in 2008. Between 1996 and 2006, he served as vice president for public leadership at the Educational Testing Service (ETS). While at ETS, Carnevale was appointed by President George W. Bush to serve on the White House Commission on Technology and Adult Education.

Before joining ETS, Carnevale was director of human resource and employment studies at the Committee for Economic Development (CED). While at CED, he was appointed by President Bill Clinton to chair the National Commission of Employment Policy. Carnevale was founder and president of the Institute for Workplace Learning (IWL) between 1983 and 1993. While at IWL, he was appointed by President Ronald Reagan to chair the human resources subcommittee on the White House Commission on Productivity between 1982 and 1984. Prior to founding IWL, Carnevale served as director of political and government affairs for the American Federation of State, County and Municipal Employees (AFSCME).

He has also served as a senior staff member in both houses of the U.S. Congress and as senior economist for the Senate Democratic Leadership Council. In 1993, President Clinton appointed Carnevale as chair of the National Commission for Employment Policy.

Carnevale received his B.A. from Colby College in Maine and his Ph.D. in public finance economics from the Maxwell School at Syracuse University. Before coming to Washington, D.C., he worked as a research economist with the Syracuse University Research Corporation. During that time, he coauthored the principal affidavit in *Rodriguez v. San Antonio*, a U.S. Supreme Court action to remedy unequal tax burdens and education benefits. This landmark case resulted in significant fiscal reforms in a majority of states.

Background

The Civic Caucus has released two recent statements on human capital: one in September 2014 laying out the human capital challenges facing the state today and in coming years and a follow-up paper in January 2015 offering recommendations for maintaining a high-quality workforce in Minnesota. The Caucus interviewed Anthony Carnevale of Georgetown University's Center on Education and the Workforce to learn about the Center's work. The Center has published two papers in 2015 on workforce education and training, both authored by Carnevale and Stephen J. Rose: *The Economy Goes to College* and *College Is Just the Beginning: The Employer Role in $1.1 Trillion Postsecondary Education and Training System.*

Discussion

By 2042, the workforce will be majority minority, but we're not preparing for it. According to Anthony Carnevale of Georgetown University, we know we have a demographic shift coming that is going to cause a huge skill problem, since so many African Americans, Hispanics, immigrants and others are not prepared. "But we're not doing anything about it," he said.

"Everybody will have to be involved," he said. "The ability of the players to work together is what will make the difference." He noted that lots of things going on are right on point: attempts to change systems and structures and attempts to improve the quality of output in many of our human capital development institutions. "All that's underway, but it's a very sloppy process," he said.

"It's very hard to move in the public space, and with good reason," he continued. "For example, we're betting everybody's future on the Common Core curriculum. Well, I hope we're right. There's going to be a certain amount of chaos with these attempts at change. It's also what's going to give rise to lots of innovation."

The economic value of learning has increased to the point where it is more and more driven by your income and your neighborhood. "We have a system now whereby the kids of people who go to college and do well get raised in the right neighborhoods with the right peers and the right schools," Carnevale said. "The kids who aren't part of that fall further and further behind. There's a growing stratification here. More and more, minorities are concentrated in two-year colleges and open admission colleges. The results there are just not as good. And the share of white students at elite schools relative to their share of the population keeps going up."

"The stratification is becoming more and more systemic and institutional," he continued. "It's very tightly tied to education now. That puts an enormous pressure on the education system."

The American system for human capital development costs over $1 trillion per year. Beyond the $600 billion we spend on K-12 education, we spend $450 billion to $490 billion on postsecondary education, over $115 billion on formal employee training, and $300 billion to $400 billion on informal learning on the job.

In the American economy and other economies, skill change is a two-way street between our education system and our employers. Carnevale said from the employers' side, skill change occurs in employer institutions through product change, technology change, organizational change and other factors. But, he said, we don't know if a change in skill requirements for particular jobs is going to grow to any substantial size. "You don't know which acorn is going to become an oak," he said.

He cited the example of the demand by employers for computer-based skills in the early 1990s. The demand for that skill rose very substantially. Initially, he said, employers had to buy the skill and develop it themselves, because it wasn't really available in the schools in any sufficient quantity. The installation of computer technology in the 1980s brought this huge skill demand, he noted, and also affected the skills of every other worker.

"If a skill change grows sufficiently, Carnevale said, "employers will first deal with it when an employee learns the skill change. Then other workers learn it and pass it on to others. When the volume of skill change gets large enough, it often gets dealt with in the employer training system. Then it tends to move into a gray area between employers and the education system. At some point, it doesn't make sense for employers to do the training, since that's not the business they're in. Then it moves into the training industry, which runs from community colleges to management training."

If the demand for the skill continues to grow, he said, it usually gets passed back into the education system. The education system now provides a fairly substantial share of the degreed and certified workers who do computer work. But since the 1980s, technology change has far outpaced our ability to respond on the skills side. "The pass-back to the education institutions is just not fast enough," he said. "It forces industries to build industry-based certifications and establish standards in skill development themselves." It has led to all types of entrepreneurial attempts to provide the skill, such as coding academies, he said. "It's a very dynamic system."

In the 1970s, 75 percent of workers had high school diplomas or less and were able to advance through on-the-job training. But starting in 1983, Carnevale said, there was a restructuring of the economy. Employers started looking for higher skill levels in their entry-level employees, because computer-based technology, connected to other technologies, automated anything that was repetitive.

"In many cases, it eliminated jobs for human beings, but more often it left a new set of nonrepetitive jobs for the humans involved," he said. This increased the skill levels required for the remaining jobs. American manufacturing productivity improved very substantially, Carnevale said, from $100,000 per production worker to $350,000 per production worker today. "But the production workers are different," he said. They tend to be people with some postsecondary training.

This shift was partly due to technology and partly due to a shift from a society that bought things, like cars, houses and food, to one that consumed services. "This had a fairly substantial effect," he said, "because jobs in high-wage services, such as finance and business services, education, health care and information, demand a set of skills not found on the manufacturing floor."

The standards for competition in the economy changed . Carnevale said the old economy competed on the ability to produce a higher volume of output, i.e,, goods or services, more and more cheaply. That was done by standardizing the output, which was easier to do with goods than with services.

Then new standards came on line, he said, as consumers started demanding quality, which was our principal failing in the 1970s. "Consumers began demanding quality, variety, customization and

convenience in consumer services," he said. "This new competitive environment required a worker with enough skill to deliver on that, irrespective of where they sat in the organization. The kinds of skills we demanded from the elite workers become more universally required among all workers."

The only institution we had to turn to in the U.S. was the education system. The old economy was anchored in the high-school workforce. But, Carnevale said, in the new economy, we wanted more skill, which meant we wanted workers with more than a high school education.

The value of a college education had fallen between 1970 and 1983, he said. It began to rise again when the economy restructured. The college wage advantage went from 29 percent over high school up to 84 percent by the middle 90s. We increased usable skills by one percent per year, when the demand was for three percent, which increased wages for college-educated workers.

It became clear in the late 1980s, he said, that there were wide differences in the financial returns on different college majors and fields of study. Carnevale said the labor market became much more specific in what it chose. "The differences in fields of study were huge," he said. "We've now arrived at a point where there are a number of certificates you can get in a year that will result in being higher paid than someone with a B.A." Those certificates tend to be technical and are mostly earned by males. "We ended up in a world where 30 percent of people with A.A. degrees earned more than those with B.A. degrees," he said.

A major movement in trying to better align education and the economy has been towards restructuring information systems. Carnevale said Virginia, Florida and other southern and western states have made the most progress on this. About 30 states, including Minnesota, have built out a structure using wage-record data, which comes from employers every quarter, matched with computerized college transcript information. He said that allows them to see whether, for example, students who study heating, ventilation and air conditioning at a particular community college will get jobs and whether the salary they earn will be worth their investment in education.

Congress has put out $800 million for states to build these information systems. Carnevale said he doesn't know what Minnesota is doing with its system. He said now that the states have this information, the question is what they are going to do with it.

In the end, he contends, what we'll know in states is whether people in a particular training program got jobs, how many hours they work and how much money they make. "That data system is being used to try to govern the for-profit colleges," he said. "But the public and nonprofit institutions face the same issues."

Another dimension in bettering the alignment of education and the economy is the degree of interaction between employers and the education system, which varies enormously over time.

Despite recent questions about Carnevale's earlier prediction that in three years, 70 percent of jobs in Minnesota will require at least some level of postsecondary education, he still believes his projection is correct. An April 27, 2015, article in the *Star Tribune* by reporter Adam Belz questioned Carnevale's 70 percent projection. The article included an analysis of Bureau of Labor Statistics (BLS) data that Belz said showed that only 35 percent of jobs in Minnesota require more than a high school diploma. In the same article, Steve Hine, a state labor market economist with the

Department of Employment and Economic Development (DEED), called the 70 percent number "pure fantasy."

In a May 4, 2015, *Star Tribune* letter to the editor (see second letter) Carnevale reported that 60 percent of Minnesotans already have some kind of postsecondary credential or degree and said that number is growing by one percentage point annually. He also argued that the BLS has said the data series Belz and Hine used to reach their 35 percent conclusion is not meant to be used that way. "The 35 percent number is not a legitimate number," he said.

"Do people need the postsecondary education?" Carnevale asked during the Civic Caucus discussion. He defined "need" as whether someone with more education will get hired and earn more money. In Minnesota, people who have postsecondary education earn an average of $50,000 per year, he said. "It's a success for them." People with only high school educations earn $27,000 per year. "Our measure of need for postsecondary education is whether you can earn a living wage without it," he said. "The answer is high school doesn't work. Basically, you need postsecondary. Minnesota demonstrates that. The earnings returns are actually there."

If only 35 percent of Minnesota jobs require postsecondary education, he said, there are 400,000 people in the state who have postsecondary education and earn, on average, $50,000 per year, who shouldn't be making that money. "The 35 percent number is just wrong-headed," he said.

"Minnesota is a very highly educated state," Carnevale said. "There will be room for 70 percent of the people in the state to have postsecondary education, given the employer demand and given that our standard is that you will make more money with that education." He said his analysis, unlike most others, includes people who get postsecondary certificates, as well as A.A. and B.A. degrees. That adds about five to seven percent more people to the ranks of those with postsecondary education.

"What's disturbing to me about the 35 percent number is that it sends the message both to policymakers and to individual families sitting around the kitchen table that college is not going to do them any good," Carnevale said. "That's just not true. The average person with a B.A. will make $1 million more over a 45-year career than a high school graduate."

What you take determines what you make. Carnevale conceded that the college majors students choose make a huge difference. "Psychology or humanities won't get you a job," he said. "Early childhood education will get you a job, but the wages are lousy."

At the B.A. level, he said, higher education is not unresponsive to the economy. Twenty percent of B. A. degrees are now in STEM fields; 27 percent are in business, including economics, accounting, finance, marketing, all the way to hospitality; 10 percent are in education. Carnevale said 80 percent of B.A. degrees are actually occupational, that is, they are aimed at preparing students for certain occupations. But, he said, there is not much alignment of those majors with the labor market to determine the availability of jobs for people with various majors.

The American commitment to general education is very strong, but there is a conflict between the specific and the general, between applied and general learning. "We value general learning for reasons that don't have much to do with the economy," Carnevale said. He pointed out that students take 40 percent of their courses in their majors and 60 percent in general education. That's

different from some other countries, he said, where students become lawyers or engineers three years after graduating from high school.

"On the general vs. specific issue, the trend is moving toward the specific, which feels very threatening to educators," he said. "More and more the demand is that you get labor-market value."

Carnevale said that's why people will build a coding academy, for example, which is a very specific piece of a larger degree in computer science. "It has immediate and quick value and high payoff at the margin," he said. "That tension is why the for-profit schools have come forward. The regular education system doesn't do that efficiently." He said this will be an ongoing issue.

We want to give people a certain set of competencies, but we're clueless on how to measure them. Carnevale said among competencies on the job, in addition to knowledge, problem-solving skills have very high value, personality matters a lot, as do work interest and work values. But these things are difficult to measure. "Measuring everything past knowledge is tricky," Carnevale said.

An interviewer commented that employers complain that when they hire people with B.A. and B.S. degrees, they're getting a mixed bag. Employers say they can't predict which of these people have the general ability, attitudes, values, behaviors, socialization, ambition, language skill, critical thinking or imagination to succeed.

"People who finish college bring some of that," the interviewer said, "so employers substitute the fact that people have college degrees for the real knowledge of how skilled people will be in these areas."

Value in a service economy extends well beyond productivity and people are willing to pay for it. People are willing to pay for services from qualified people, Carnevale said. "The fact that employers are in pain because they can't find workers is good news," he argued. "It means people are valuable. The notion that we're scratching around to get skilled people is a very happy problem."

The volume of people being educated is acceptable, but are we actually producing educated people whose education is of value? Carnevale said there is a mismatch problem between education and the economy. That results in 15 to 20 percent of people with B.A. degrees not earning B.A. wages. "The pressure is going to be on," he said. "We're going to have to produce more skills, but there's not enough money to get the job done. President Obama's goal to make ours the best higher education system in the world would require spending an additional $250 billion a year more on higher education. We simply don't have that."

"We believe educators are very valuable and we need to give them more money, but we don't have it," Carnevale continued. "We're giving it all to old people and we're gradually disinvesting in young people and workers. The bottom line is that we must get more efficient."

The 1983 *Nation at Risk* report resulted in a monumental effort to improve K-12 education, but, in the meantime, we threw away vocational programming, especially in the high schools. Carnevale said vocational education, now known as career and technical education (CTE), had a bad reputation. "It has improved a lot, but we've thrown it away," he said. "It's all shifted to postsecondary education, the industry-based certifications and A.A. degrees."

"We shifted away from vocationalism in the high schools, because it was tracking," he continued. "But if you do career and technical training in high school, it makes it more likely both that you'll want to improve your math skills and that you'll go on to college, often to a two-year college. But that option isn't open to us because it's tracking."

"The American narrative is high-school-to-Harvard," Carnevale said. "But if we're not going to do that for African American, Hispanic and low-income people, offering them CTE becomes tracking. People find that repulsive. As a political issue, it's a nonstarter. There are a lot of people who wish they could do this, but you can't get out of the political starting gate with this. It has to be postsecondary, because we sort of agree that once people get out of high school, it's OK for them to go on separate tracks and on separate paths, as long as they go to something called college."

The cultures of business and education don't mix well, because educators have a strong allegiance to the noneconomic value of education. "When employers and educators are in the same room, they're tolerating each other," Carnevale said. "I think it's a healthy tension." He noted that the European apprenticeship systems would be "unthinkable" in America, because they would be seen as tracking. Europeans are more comfortable with those systems, because they are not very diverse nations.