

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

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Overview

The nation's current economic conditions call for job creation in a variety of sectors. To ensure that today's secondary and postsecondary students are prepared to meet the needs of the labor market, it is critical that stakeholders at state and local levels work to align economic needs with educational outcomes. A recent report by the Georgetown University Center on Education and the Workforce, *Help Wanted: Projecting Jobs and Education Requirements Through 2018*, projects both a supply and demand problem; not only will there be a diminishing number of jobs available in the U.S. over the next decade, but also a shortage in the number of skilled workers available to fill them. According to that study, by 2018, the U.S. will require 22 million new college degrees and at least 4.7 million new workers with postsecondary certificates. These estimates would require American colleges and universities to produce 10 % more degrees annually between 2008 and 2018.

A new report by the Center on Education and the Workforce, *Career Clusters: Forecasting High School through College Jobs 2008-2018*, expands upon the previous report to look more specifically at labor market changes and how skilled workers will fit into the new economy. The report estimates that two-thirds of new jobs will be accessible only to those with postsecondary degrees. In addition, job opportunities available to people with a high school diploma or less, while already limited, will continue to decline, particularly for certain subgroups. *Career Clusters* discusses professional opportunities for workers in 16 nationally-recognized career clusters.

AYPF Executive Director Betsy Brand gave framing remarks and introduced each of the presenters for the forum discussion. Forum speakers included:

- James Stone III, Director, National Research Center for Career and Technical Education, University of Louisville (KY);
- Anthony Carnevale, Director, Center on Education and the Workforce, Georgetown University (DC);
- Katharine Oliver, Assistant State Superintendent, Division of Career and College Readiness, Maryland State Department of Education; and
- Bryan Albrecht, President, Gateway Technical College (WI).

Presentations

The forum was designed to bring together several distinguished panelists to discuss labor market projections and their implications for career and technical education (CTE).

James Stone, Director, National Research Center for Career and Technical Education, University of Louisville (KY) began the discussion by describing the mission and work of the National Research Center.¹ Stone described the mission of the National Research Center as to improve the engagement, achievement and transition of high school and postsecondary CTE students. It does so through the provision of technical assistance to states, professional development to CTE practitioners, and the dissemination of scientifically-based research.

Because the National Research Center is committed to "good science," Stone said, the organization has been pleased to work with Georgetown's Center on Education and the Workforce. He emphasized the importance of engagement in his organization's work, noting that if students do not enroll and complete certificate and degree programs, all of these policy conversations are moot. Stone also added that the National Research Center's work with CTE practitioners and dissemination of research were consistent with U.S. Secretary of Education Arne Duncan's call to move best practices into schools.

Anthony Carnevale, Director of Georgetown University's Center on Education and the Workforce, continued the forum by highlighting some key findings of the *Career Clusters* report, which was released that day. He discussed shifts in the labor market and their implications for certain subgroups of the population. Noting that discussions about CTE most often concentrate on postsecondary education, Carnevale began his presentation with a discussion about job market opportunities for workers with a high school diploma or less.

The first key finding of the report is that while job opportunities for high school graduates still exist, they are declining quickly. According to data for 2008-2018, only 37% of jobs in the United States will be available to high school graduates. However, there are three important caveats to this analysis. First, only about one-third of high school graduates have access to these jobs. Currently, only one-third of high school graduates are in jobs earning between \$35,000 and \$50,000, which the report classified as income that is "minimally adequate". (Carnevale noted that earners at the top end of this range are usually those in supervisory positions.) Second, these jobs tend to favor men over women because they are in fields traditionally dominated by men, such as manufacturing, construction and hospitality. Carnevale emphasized that it is increasingly

¹ The Center is a consortium of several organizations, including: the Universities of Minnesota and Louisville, Clemson University, Cornell University, Southern Regional Education Board, National Occupational Competencies Testing Institute, FHI360, National Association of State Directors of Career and Technical Education Consortium, and Association for Career and Technical Education.

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

difficult for women to make a living wage with only a high school degree. Third, the 37% figure is likely overstated because it includes both full- and part-time jobs, rather than career positions. This sector of the labor market also tends to include people who are employed in transitional jobs.

Carnevale further explained that in today's labor market, high school graduates are now less likely to achieve middle class status than they were 40 years ago. For example, in 1973, about one-half of high school graduates could obtain jobs with wages and benefits sufficient enough to enable them to live in the middle class. Today, however, the middle class is increasingly made up of people with some college.

The second key finding of *Career Clusters* is that workers with postsecondary middle skills (i.e., those with some college or an associate's degree) make up a large group of workers with varied wage payoffs. By 2018, 29% of jobs will be available to people in this subgroup. In this sector of the economy, opportunities begin to open up for workers, particularly women. "At this point, we begin to see career ladders. People begin to get traction. Women get traction," said Carnevale. However, he added that despite these increased opportunities for women, they still earn less than men with high school diplomas and that the best opportunities to earn a living wage with middle skills are still in career clusters dominated by men.

The third key finding of *Career Clusters* is that a bachelor's degree or higher essentially guarantees workers access to all career clusters. Jobs for this subgroup are growing the most quickly and will comprise 34% of all jobs by 2018. Not surprisingly, the report found that education is strongly correlated with higher incomes. For example, people with graduate degrees are concentrated in the nation's top three income deciles. "The system still operates on a hierarchy of education," noted Carnevale.

Carnevale concluded by noting that although education still determines wages, the occupational field also matters. Noting that the current labor market is more textured than it was decades ago, he explained that there is great variation among jobs by gender and curricula, making the type of degree one obtains matter less than the subject matter and courses one takes. The *Career Clusters* report ranks career fields according to their wages, suggesting that clusters such as STEM, Information Technology, Law & Public Safety, Business and Health Sciences tend to offer better opportunities for workers to earn a living wage. While most new and replacement jobs will be in Hospitality and Tourism in the coming several years, the report also noted that wages in Business, Management and Administration are growing the fastest.

For instance, 28% of associate's degree or certificate holders earn more than those with bachelors' degrees. This change is due in part to changes in entry level skill requirements, which have risen to the point where people have to have preparation to obtain an entry level job.

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

Carnevale recommended that certification preparation be a component of career-readiness programs. "The trick in current system is that it is very difficult to move your way up without substantive preparation in particular knowledge areas, but this preparation yields huge returns in terms of keeping a job," he added.

The forum's next speaker was Katharine Oliver, Assistant State Superintendent, Division of Career and College Readiness, Maryland State Department of Education. She distributed materials that highlighted Maryland's vision for CTE, which Oliver said was rooted in data and incorporated the perspectives of both local practitioners and state policy leaders.

Noting that the mission of her office is to make CTE a part of high schools throughout the state, Oliver gave an overall profile of CTE in Maryland. The state has 117,300 CTE students scattered throughout the state's 24 local school systems, which house 16 CTE centers and 9 comprehensive CTE high schools. According to state data, CTE programs typically include a sequence of four courses between grades 10 and 12. About one-half of students in these grades enroll in a CTE course, and about 19 % of students who graduated in 2011 completed a CTE program of study. In addition, the state has 67,800 CTE students in its 16 community colleges, which represents about 41 % of the state's overall community college enrollment.

According to Oliver, CTE in Maryland is a partnership between the workforce and economic development sector and education systems. Maryland's 10 career clusters provide the structure for 81 different career pathways, which are aligned with the state's labor market. Labor market data have informed career development throughout the state as well as the design of Maryland's 48 CTE programs of study. Oliver's office encourages local school systems to adopt the programs of study and the state provides professional development and consistent curricula as incentives.

The alignment between the state's economic needs and educational opportunities has proven to be attractive to both business and postsecondary institutions as well, and the state boasts a wide range of CTE partners from both the public and private sectors. "We have a deep allegiance to the economic needs of the state and are committed to the alignment between secondary and postsecondary education," said Oliver.

Oliver further explained that for CTE linkages to work in Maryland, locally developed programs must adhere to the following policies and procedures. They must:

- emphasize career and college readiness;
- include early college credit and industry certifications;
- have program advisory committees; and
- be approved with input from a state level CTE program review panel.

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

She added that there are additional incentives for CTE program adoption, including funding from the Perkins Reserve Fund, state grants, and employer-funded grants and emphasized the importance of local advisory committees, which are required under state statute and are jointly approved by local school boards and community college governing boards.

Oliver also described the importance of state-level partnerships in linking CTE with labor market and economic development demands. She said that Maryland's Governor's P-20 Council has been enormously helpful as a partner because it "brings people to the table who are the end users of the state's CTE programs." For example, postsecondary partners and industry associations help convert the expectations and needs of business and industry into CTE curricula. The partnerships, she said, also underscore the value of state longitudinal data systems in informing their work. For example, the state would like to know how well CTE students are performing after they complete the programs and longitudinal data could provide that information.

Oliver concluded with defining the big picture policy implications for CTE in Maryland. They are to:

- define career readiness;
- understand career pathways and use career clusters, educational demand and labor market forecasts to help organize and inform them;
- support focused programs of study that are delivered in a consistent way;
- promote industry certification; and
- establish and mine state longitudinal data systems.

Oliver emphasized that the last two policy implications are important policy levers. In particular, she said longitudinal data systems "inform the work that we do. The data help us to support students, improve program implementation and prioritize our work."

The final presenter of the forum was Bryan Albrecht, President of Gateway Technical College in Wisconsin. He congratulated the authors of the *Career Clusters* report, calling Carnevale a "leading voice" in economic research.

Albrecht noted that although Gateway was nationally recognized for stimulating economic growth in its surrounding areas, it is representative of most community colleges across the country. A 100-year-old institution, Gateway was founded during a time when the economy was changing and lacked skilled workers. At that time, Wisconsin needed workers with new skills to support the manufacturing economies in the region. Gateway Technical College serves 25,000 students on three campuses and through six technology centers.

Albrecht described the local economy near Gateway, explaining that the manufacturing sector is still driving the economy today. Nearby Racine has an unemployment rate of 14%, despite an

abundant 1 million jobs in the region created by several world class businesses in the region. Albrecht attributed the lost opportunities for local employment to a gap between the skills taught in Wisconsin high schools and colleges and the skills required by local employers. "We have to decide how to use local resources to meet the needs of our employers. We need to link our graduates' skill sets with employers' needs to keep these companies in town and make it possible for our residents to compete for these jobs," he said.

To address this gap, Albrecht said that Gateway was creating "pathways of opportunity" for high school students. He described a program at Lakeview High School/College, in which high school students have the opportunity to earn postsecondary credits while still in high school. The school, which focuses on the manufacturing sector, shares faculty between the high school and college. "Students need to be able to visualize their pathways," said Albrecht.

According to Albrecht, Gateway has experienced double digit growth in student enrollment. Several programs are particularly fast growing, and these mirror the high growth areas of local businesses. To meet increased demand, Gateway is delivering new services through its technology centers and innovative kinds of campuses. For example, at SCJ Corporate College, employees can take classes at their worksite. Professors hold classes there, serving as a great catalyst for employees to further their training. He also cited Gateway's Horizon Center, HERO Center, Center for Sustainable Living/TRANE, and Boot Camp and Smart Start Training Programs. Through these efforts, Gateway is able to offer a variety of certifications and trainings designed to increase students' employability and skill sets.

Question & Answer Period

Forum attendees had an opportunity to ask the presenters a few questions. The first question asked whether the presenters had information about increasing the rate of women entering jobs offering a higher living wage, and whether "green" jobs offered particular promise for this group.

Albrecht said that the engineering field holds a great deal of promise for women, in part because the field has become increasingly diversified in recent years, including toward green industries. Oliver added that Maryland strives to increase postsecondary completion rates for women, but that encouraging women to enter nontraditional fields holds greater promise for raising their wages.

According to Carnevale, there is some good news about women in education and in the labor market. Women's math performance is on the rise, and they are increasingly majoring in mathematics and statistics. Currently, Carnevale noted that 42% of math majors are women, and that they make up the majority of statistics majors. However, women also tend to turn these "valuable" majors into less profitable careers like teaching and working in nonprofits. He added that women on the whole obtain more education than men but still earn less.

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

The next question from the audience addressed the connection between CTE programs and dropout rates. Specifically, a participant wanted to know whether CTE programs were producing higher graduation rates than traditional high schools and whether these programs were attracting vulnerable students who may have otherwise been dropouts.

Stone reiterated that engagement is a primary focus of the National Research Center. He pointed to a forthcoming study based on national data that examined CTE and a student's likelihood of completing his/her education. The study found that the second strongest predictor of high school graduation is whether a student takes a significant quantity of CTE courses. Stone added that CTE programs play a critical role in getting many young men, in particular, through high school. "We've a got boy issue. We're losing them," he said.

Although the state has not fully examined the data, Oliver noted that CTE students in Maryland are graduating at higher rates. "CTE demonstrates holding power. It offers relevance for students," she explained.

Carnevale echoed these sentiments, emphasizing that CTE programs in high schools help keep kids in school by giving them marketable skills. However, the nation's reluctance to promote career tech in high school is increasing the high school dropout rate. He explained, "Politically, it's an anathema to offer career tech when we're pressuring students to be academic. However, if you don't give students a sellable skill, many of them won't make it through college."

Noting that Maryland has been leader in CTE, Brand asked presenters to highlight strategies used at both state and local levels to improve CTE.

Oliver explained that although Maryland was an "early game changer," enrollments in CTE programs and completion rates have recently declined, although concentrator rates have held steady. She attributed the decline to the pressures being placed on students to take more academic courses, a problem to which Carnevale also referred. "We continue to have an issue with students not being guided into CTE programs. Students are being bombarded with opportunities to take other courses. But we appreciate what CTE can do for students. To that end, we have broadened our programs to meet students' needs, met with stakeholders to support comprehensive services and are examining data to see how our graduates have been successful," said Oliver.

Albrecht pointed to a bill in Wisconsin that seeks to replace some math and science requirements with vocational education classes. He said that Gateway is opposed to it because the college thinks that students need more math and science—not less—to compete in the labor market. Stone added that, nationally, the dropout rate for CTE is about 30 %. He also noted that determining what kind and how much math one needs for the labor market is not simple. "It is not a unitary construct. What is the point of doing Algebra XXV? Even language arts majors

AYPF Forum Brief: Career Pathways to Employment: Aligning Career and Technical Education to Labor Market Predictions, November 14, 2011

need at least one math course. We want to be cautious about driving kids out through too many requirements," he added.

The next participant queried how many states require local districts to do CTE, noting that the Perkins Act of 2006 requires states to implement at least one CTE program of study. Brand turned to Kim Green from the National Association of State Directors of Career and Technical Education Consortium, who was present at the forum and has collected that state-level data. Green reported that about one half of states had instituted requirements for local districts, but that these mandates were impeded by diminishing local capacity. She added that states are increasing their support to districts to help them define CTE programs.

The final question pondered how the presenters engage employers to identify specific job skills and ensure that these are aligned with curricula. Albrecht emphasized the importance of local advisory panels. He described a process in which he solicits feedback from CEOs and HR directors and asks them to identify the skill sets or certifications they are looking for.

Oliver explained that many of these conversations also happen at the state level, where stakeholders can bring industry and education representatives together to identify the entry skills students need. In turn, the state can create a program of study based on these needs. She said that some industry partners also work directly with teachers to help train them to provide students with the skills needed to be successful in that industry.

According to Carnevale, the relationship between employers and education providers is highly textured. He called for postsecondary institutions to work with state and national wage record data to ensure that the cost of education is aligned with their chosen field. For example, if a student takes a course at a community college and is working in particular industry, the cost of education should be in line with the wage differential. "Education shouldn't cost more than the wage. It should be worth it to the student," he added.

Stone concluded with a quick plug not only for the importance of research, but also for the expediency with which stakeholders should move forward. "While some questions can be answered by research, others can be answered by industry themselves. Some companies are not going to wait around. They are starting their own programs. They are moving ahead without us," he cautioned.