FORUM BRIEF: Employer-Driven Innovations in CTE: Promise, Practice & Opportunities for Policy

October 20, 2017

Background

According to projections, in order to stay economically viable, our country will need to dramatically increase the working-age population that earns a high-quality postsecondary credential to meet future workforce needs. A growing body of research shows that high-quality career and technical education (CTE) pathways prepare students to be successful beyond a high school diploma in both postsecondary education and the workforce. In order to meet the growing demands of our workforce needs, our country must provide students with more exposure and opportunities to pursue sequenced CTE coursework in technical and career fields that provide students with an industry-recognized credential or credits towards a postsecondary degree.

The American Youth Policy Forum partnered with MDRC to host a Capitol Hill Forum to present leading research on CTE and analysis of the evolving workforce needs which have influenced the development of innovative CTE strategies. The panel was composed of diverse perspectives and areas of expertise. Presenters included:

- **Mary Visher**, Senior Associate, MDRC
- **Stanley Litow**, President Emeritus, IBM International Foundation
  Vice President Emeritus, IBM Corporate Citizenship
- **Cate Swinburn**, President, YouthForce NOLA
- **Van Ton-Quinlivan**, Vice Chancellor, Workforce & Digital Futures, California Community Colleges

Presenters provided an overview of the research and innovative strategies in CTE at both the secondary and postsecondary levels that have strong employer partners and are informed by research.

Panelist Presentations

Mary Visher, Senior Associate, MDRC

Visher's presentation focused on the overarching trends of innovation in CTE models and programs in research. She began by acknowledging four reasons behind CTE's "dramatic resurgence" in the last five years: 1) a skills shortage, in which employers in certain sectors are looking for skilled workers and looking to high schools as areas to foster talent, 2) the increased stature of sub-baccalaureate credentials in the labor market that allow students to enter the workforce faster and with less student debt, 3) a reduction in the stigma surrounding CTE as only for low-achieving students, and 4) CTE has drawn bi-partisan attention at the federal, state, and local level, particularly due to the pending reauthorization of the Perkins Act.

According to Visher, the "new CTE" addresses three issues that have led to its increased popularity. First, within career and technical education programs, there is a new emphasis on engaging employers to

provide students with the skills that they need to succeed. Second, CTE is no longer an alternative to postsecondary education, as it used to be, but rather CTE programs and models focus on preparing students for both careers and college, and many CTE programs are part of career pathways that lead from secondary to postsecondary education. Third, CTE programs and models are increasingly aligned with preparing students for high-paying jobs within high-paying sectors.

Visher proceeded to list various CTE models and programs, including career academies, early college high schools, and apprenticeships, underscoring the need for multi-faceted approaches. "There are many barriers to success," she explained, "so there can be many strategies to succeed." Some programs are developed to meet the needs of employers (i.e. shortage of skilled workers), others focus on the needs of students (i.e. reengagement in school, graduate from high school, pursue postsecondary education), and many strike a balance between the two.

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> *- Mary Visher*

Although there is an abundance of innovation occurring in CTE programs, Visher noted that rigorous evaluations to measure the impact of these programs are yet to be developed. While presenting both promising and strong evidence within about the research base, Visher highlighted that most research examines only one or two components of CTE models, such as project-based learning or dual enrollment. Measuring the impact of CTE programs involves calculating the difference between outcomes achieved by students in the programs and the outcomes achieved by a similar group of students not enrolled in the program. To explain this mechanism, Visher referenced a rigorous evaluation of career academies by MDRC. The study randomly selected a group of 1500 students. Half of the students were enrolled in the career academy while the other half formed the control group. The students were studied for twelve years. Results demonstrated that students in the career academy earned more than the control group, and the difference between their earnings grew overtime. There was no significant difference in educational outcomes between groups, although more men of color were graduating from the career academy than among the control group. This, according to Visher, implies that the earning gains made by career academies "came about without adversely affecting educational attainment outcomes."

Stanley Litow, President Emeritus, IBM International Foundation
Vice President Emeritus, IBM Corporate Citizenship

Litow's presentation focused on the P-TECH 9-14 School Model co-developed by IBM. Litow began by explaining the high demand for middle-skill jobs and the lack of qualified employees to fill them. Although the economic recession prompted school reform in New York City, very few reforms connected students to jobs and economic opportunity. Given that college completion was low in an economy that increasingly required some postsecondary education and training, that many high school graduates would have difficulty getting competitive jobs at IBM or other companies in the STEM field, and that IBM and other industries were struggling to find applicants with appropriate skillsets, was the impetus behind forming the Pathways in Technology Early College High School (P-TECH) initiative.

P-TECH is an innovative and integrated school model for grades 9 through 14. It blends high school, community college, and workforce training to transform U.S. education and strengthen America's economic competitiveness by connecting education to jobs. Jobs at IBM and among other employers, Litow explained, can no longer be classified as white collar or blue collar, but as "New Collar." Students at P-TECH are not trained to enter a particular job. Instead, they are encouraged to develop a set of skills in a career area based on their individual interests and potential to grow. Upon graduating from P-TECH, students receive a high school diploma and an associate's degree in a STEM field and are first in line for jobs with industry partners.

P-TECH's curriculum combines a strong academic program with substantial work experience. It integrates high school and college coursework with the goals of college completion and career readiness. Students are given the opportunity to take part in mentoring, workplace visits and paid internships. Students enroll in college courses as soon as they are ready, which can be as early as the summer after their freshman year of high school. Litow noted that P-TECH's student body is overwhelmingly comprised of low-income students and students of color. Additionally, P-TECH schools are open enrollment and the college degree is provided for free.

Since its initial launch in 2011 in Brooklyn, P-TECH has expanded to seventy schools across six US states, Australia and Morocco. By 2018, Litow noted there will a hundred P-TECH schools across at least eight states and more schools in international locations.

To demonstrate P-TECH's direct impact on school districts, Litow cited Newburgh, a district with the highest drug rate in New York State, where despite their environment students are succeeding. P-TECH completed the full six years of the model for the first time last June at the flagship school in Brooklyn. More than half the students in the first cohort graduated with their associates degree, a rate more than four times the on-time national community college rate of 13%.

Cate Swinburn, President, YouthForce NOLA

Swinburn described YouthForce NOLA, an evolving system-based solution to address the lack of workforce success among high school students in New Orleans. A brainchild of eighteen partners across education, business, and government, YouthForce NOLA was established in 2015. The program was created to address two key observations. First, that 70,000 high-paying jobs will become available in the region within the next ten years and companies are recruiting candidates from elsewhere in the United States and around the world because they cannot find the talent in local schools. Second, there is a gap between academic performance and real-life success despite the extensive education reforms in New Orleans since Hurricane Katrina. YouthForce NOLA aims to make New Orleans graduates the most sought after talent for high-paying jobs. In order to do so, it strives to create career pathways to provide the greatest economic opportunity for the largest number of young people.

The developers of YouthForce NOLA decided to focus their programming on career readiness, as they observed that local schools were providing rigorous academics, yet students still required additional abilities in order to be successful in real life. These additional abilities include job-specific skills, work experience and soft skills. YouthForce NOLA helps students earn industry certifications, Associate's degrees, and certifications in technical fields. YouthForce NOLA also organizes a rigorous paid internship program in high-wage industries to provide young people with work experience and enable them to internalize soft skills. By earning these credentials and skills, students are able to directly enter the work force and earn a living wage.

In order for students to internalize soft skills, there needed to be a uniform definition for soft skills. Swinburn explained, "When people talk about soft skills, they usually mean different things." YouthForce NOLA worked with its partners in K-12 education and the workforce, as well as MHA Labs, to identify six key soft skills: *personal mindset*, *planning for success*, *social awareness*, *verbal communication*, *collaboration*, and *problem solving*. YouthForce NOLA also developed a soft skills network that informs schools and internship programs on ways to incorporate soft skills into their curricula. Additionally, the launch of a soft skills teacher fellowship incentivized educators to undergo soft-skills training and come up with plans to include soft skills in their classes.

The implementation of programming requires YouthForce NOLA to identify and target four key stakeholder groups: schools, employers, training providers, and families and communities. Swinburn noted "We recognize the stakeholders we need to partner with, the ones we need to change, and/or the ones that can help accelerate our work."

To engage schools in their work, YouthForce NOLA helps open-enrollment public high schools develop career pathways. Swinburn noted that they initially received pushback from certain high schools that believed CTE was unnecessary given that most of their students plan to attend college. "We tell them that this is not about college or career readiness, it's about college *and* career readiness," she explained. "[Schools] have a bigger responsibility and they need to do more. This is about life success." YouthForce NOLA organized site visits so schools could share best practices and draw inspiration from successful CTE models. The organization also provides grants to allow for the professional development and staffing of CTE models.

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YouthForce NOLA ensures that all of its programs are aligned to the evolving skill demand and employer expectations. The organization works with employers to help them conduct work-based learning experiences for students. Swinburn pointed out that, "Running a work-based learning experience is not a normal skill set…so we work with employers to help them understand what it means to have a powerful, impactful internship program." YouthForce NOLA also helps employers develop externship programs, which places teachers and leaders from schools into companies for a five-day immersion.

YouthForce NOLA aims to engage training providers to help students develop the technical skills and soft skills that they need to meet workforce expectations. Training providers, according to Swinburn, are hybrid partners that invest extensively in community colleges and traditional colleges to offer students high-quality technical skills training. Third-party providers, a type of training provider, are independent organizations with industry expertise and skills, ranging from software development to carpentry. YouthForce NOLA helps third-party providers partner with schools and enroll students into their training programs.

Swinburn explained that young people do not make decisions regarding their education in a vacuum. Rather, they make their decisions in partnerships with their parents and families. As a result, engaging families and the community is an important aspect of YouthForce NOLA's implementation strategy. In collaboration with The Urban League of Louisiana, YouthForce NOLA developed a [family engagement toolkit](#) to help schools partner with families.

In order to assess the progress of their programs, YouthForce NOLA is partnering with MDRC to develop an implementation study. The organization also plans to conduct more policy and data work to prevent their work from being siloed. Currently, YouthForce NOLA is on track to meet its goal of 20% of the graduating class of 2020 in New Orleans earning technical and work-based credentials.

Van Ton-Quinlivan, Vice Chancellor of Workforce and Digital Futures, California Community Colleges

Ton-Quinlivan described how [networks of community colleges](#) in California are tackling CTE. She explained that the need for a college education is more crucial now than ever before. By 2020, 65% of job openings in the United States will require some form of postsecondary education training. Additionally, 6.3 million job openings are predicted between 2010 and 2020 in California and 30% of job

openings will require 'some' college or an Associate's degree. Postsecondary education, whether a four-year program or not, has become the new gateway into the workforce.

The challenge, according to Ton-Quinlivan, is getting a state of California's size to ensure that students are moving from high school to college, earning the required credentials, and entering the workforce. California has 114 community colleges, 7 regional economies, and over 2,000 high schools. Additionally, it's a state of not one economy, but many regional ones that may specialize in specific industries. Among the top industry sector priorities across California's fifteen regions are health; information and communications technology and digital media; global trade and logistics; advanced transportation and renewable energy; energy, construction and utilities; life sciences and biotechnology; agriculture, water and environmental technologies; small business; retail, hospitality and tourism; and advanced manufacturing. The nature of community colleges allows them to specialize in training based on the prioritized industry sector.

The California Community Colleges system is developing well-functioning career pathways by fostering an "ecosystem of intrapreneurs," developing tools to make data more accessible, and scaling innovations. Intrapreneurs are people "on the ground" who serve as points of contact for employers, connecting them to the community colleges specializing in relevant sectors. This enables employers to navigate the complicated community college system.

Additionally, rather than have colleges compete against each other, the California Community Colleges developed regional clusters of colleges to foster development. Regional clusters as a whole can adopt CTE programs like P-TECH. This organizational method promotes greater collaboration across colleges and enables CTE programs to operate at a larger scale.

Ton-Quinlivan, like Swinburn, brought up the lack of a clear definition of soft skills or 21st century skills. Upon being tasked to address employer complaints of skills shortages in areas such as adaptability, collaboration and communication, ten community colleges developed a list of the top ten 21st century skills required for success in the workplace and a curriculum to incorporate them in the classroom. The result is the _New World of Work_ program. Since the program's implementation, multi-national corporations like Apple are looking to partner with community colleges to deliver these essential skills.

> _"Employers are coming to us, wanting to co-invest in a way that they never have before."_
> _- Van Ton-Quinlivan_

Ton-Quinlivan remarked, "Employers are coming to us, wanting to co-invest in a way that they never have before." MDRC is in the process of evaluating this program. Additionally, the development of makerspaces in California's community colleges to foster these 21st century skills has gained the attention of the media on a national level.

The successful practices of the California Community Colleges, along with the education system, has transformed CTE from an afterthought to a policy priority. State-investment in career education has risen from $100 million to $900 million. The integration of related programs such as the apprenticeship program and adult education program has generated more funding.

Key Themes

The Importance of Skills

All of the presenters highlighted the importance of both technical and soft skills. Although the language and context used to describe these skills differed as well as the labor market demand for them, the

development of those identified skills is imbedded in each organization's programming. Through consultation of national research and partnership with MHA Labs, YouthForce NOLA explicitly defined what soft skills were necessary for workforce success and aligned them across partners. During the school design process at P-TECH, skills and competencies for key job areas are identified and mapped into curriculum by the employer partner, school district, and local community college. In California, employers can badge students when they demonstrate the top ten 21st century skills within the *New World of Work* program during their internships.

Blending Academic Rigor and Workforce Preparation

Similar to Visher's characterization of the new CTE programs as increasingly focused on preparing students for not only careers, but also postsecondary education, the other panelists emphasized that their CTE programming bolsters academics, rather than detracts from it. Litow explained that at the core of P-TECH schools is a rigorous academic program aligned with college and career readiness goals. Rather than silo academics and workforce preparation, Litow explained that as an employer you want "essential skills" useful in the workplace like communication and writing, "to be developed as part of the education system,

> *"[You want] essential skills…to be developed as part of the education system, not distinct from it."*
> *- Stanley Litow*

not distinct from it." Swinburn acknowledged that none of YouthForce NOLA's goals included academics, explaining that was an intentional choice. While high schools in the city were already providing a strong academic program, the developers identified it was the program's responsibility to "layer in the other pieces" of career readiness to better prepare students for a successful life.

The moderator, Jennifer Brown Lerner, asked panelists in their closing remarks to describe in one word how educators need to begin thinking about how to create experiences that blend academic rigor, development of soft skills, and technical skills. The panelists replied that accountability, collaboration, empowerment, and context were necessary components to consider in efforts to balance and blend these goals.

Reauthorization of Perkins

Litow, Swinburn, and Ton-Quinlivan all emphasized the importance of Congress reauthorizing the Carl D. Perkins Career and Technical Education Act. Litow stressed the importance of federal legislation in guiding how programs go to scale and expressed that the reauthorization of Perkins would signal to P-TECH and other similar programs to continue their work in the field of career and technical education. Litow also emphasized a few key areas that he would like to see addressed in the reauthorization. First, federal funding should discourage programs from training students for low-wage jobs. Second, Perkins should encourage greater collaboration between K-12 and college programs. Third, Perkins should encourage participation by local employers, and finally, Perkins should focus on supporting programs that provide career exposure and work-based learning.

Swinburn noted that Perkins funding is critical to YouthForce NOLA and other career readiness initiatives in New Orleans. Approximately $700,000 of Perkins funding goes to the city of New Orleans, and millions more are distributed to the state. Swinburn asked attendees to consider how Perkins is awarded at the state level. In Louisiana, Perkins is awarded competitively, based on programs aligned to regional industry demand and other criteria.

Ton-Quinlivan underscored key areas in which Perkins should support state efforts to implement CTE. First, she advocated for Perkins metrics to align with the Workforce Innovation and Opportunity Act (WIOA) metrics, as many states are already tracking outcomes like certificates, degrees earned, and wage

gains under WIOA. Second, Perkins should reinforce industry sector strategies and regional collaboration. Third, the reauthorization should encourage and support dual enrollment and work-based learning strategies.

Audience Q&A

How do you convince employers on a mass scale to hire employees based on skill rather than based on a four-year degree?

Litow replied that IBM collaborated with its human resources department to repurpose job categories where the criteria was a Bachelor's degree and change it to an Associate's degree. He postulated that if a company was able to develop a model where the entry-level wage was decreased and the candidates were more diverse and qualified then other companies may be inspired to incorporate the model into their own human resources departments.

Swinburn mentioned that employers use a four-year degree as a soft-skills checkpoint, and conversations should be had to change that. She proposed "resetting our conversation to be about skills" rather than degrees.

How do you quantify what industries are "high demand" without leaving out specific industries like art and entertainment?

Litow explained that there exists more mobility in the workforce than ever before and that preparing for a career in one field does not prevent students from branching out. Twenty-five percent of P-TECH students that IBM has hired have already been promoted, he said, and some of them would probably leave the company and go elsewhere. Litow explained that was not an issue because the goal of P-TECH is not to prepare students for a particular job or a specific industry, but to cultivate skills that would be applicable across sectors. Additionally, Ton-Quinlivan noted the importance of linking secondary and postsecondary resources to meet common goals.

What can schools and colleges do to overcome gender segregation and barriers in the labor market? How have your programs addressed this issue?

Swinburn replied that although YouthForce NOLA is nascent and is still collecting data about the gender composition of its programs, the organization plans to direct explicit work to help young women see themselves in higher wage fields.

Visher added that there is more intentionality now than ever before to make sure that girls have access to pathways that they did not have access to before. She mentioned MDRC's replication of the study conducted on career academies, to include gender ratio as an additional measure. Ton-Quinlivan further highlighted the need for effective tools to collect and analyze data to understand and create effective solution to gender biases.