

## Innovating to Strengthen Youth Employment

The financial crisis of 2008 exposed serious weaknesses in the world's economic infrastructure. As a former aide to a mayor of New York and as deputy chancellor of the New York City Public Schools (the largest public school system in the United States), my chief concern—and a significant concern to IBM and other companies interested in global economic stability—has been the impact of global economic forces on youth employment. Across the United States and around the world, youth unemployment is a staggering problem, and one that is difficult to gauge with precision. One factor that makes it difficult to judge accurately is that many members of the youth population have yet to enter the workforce, making it hard to count those who are unable to get jobs. What we do know is that the scope of the problem is overwhelming. Youth unemployment in countries such as Greece and Spain is estimated at over 50 percent, while in the United States the rate may be 20 percent, 30 percent, or higher in some cities and states. Why is this problem so daunting? Why does it persist? And, most important, how can communities, educators, and employers work together to address it?

### THE ROOTS OF YOUTH UNEMPLOYMENT

While we can take some solace in the fact that U.S. high school graduation rates are higher than they were 10 or 20 years ago, this good news is tempered by the reality that the high school diploma alone is no longer adequate preparation for a middle-class career. Young people who enter the workforce with only a high school diploma are expected to earn no more than \$15 per hour, and many will earn less. The foundation of the problem is that America's school systems—largely controlled by states and local school districts—have not evolved their education models sufficiently to keep pace with the new demands of the global, knowledge-based economy. There is no “silver bullet” in the effort to improve education. Investments in early childhood education, expansions and restructurings of the school day, and

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efforts to improve teacher quality all have been important. But some specific, focused, and targeted efforts directed at high schools are long overdue.

As local, national, and global economies have changed, fewer “living wage” jobs have been created or sustained for those who have only high school diplomas. Today’s reality is that young people need postsecondary education (either a two-year or a four-year degree) and the requisite skills to be prepared for the jobs of the 21<sup>st</sup> century. The high school diploma is now the *first* step toward career readiness—not the last.

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ondary success rate of their graduates, and the statistics are not encouraging. Currently, only 25 percent of young people who possess a high school diploma and register for community college will successfully complete their “two-year” degrees within six years. That means that 75 percent of community college registrants leave without their degrees and enter the competitive global workforce with neither the credentials nor the skills to earn a living wage. In some locales, the failure rate is even greater, as community college graduation rates hover in the single digits. And so the question becomes, why do so many

American young people with high school diplomas fail to complete a two-year postsecondary degree?

An examination of one community college freshman class using IBM data analytics yielded some intriguing insights. Chief among them was that nearly 100 percent of community college freshmen who required two remedial courses—with one of them being math—failed to complete even one postsecondary semester. More than 50 percent of these students dropped out of community college within two months of matriculation. This drives home the point that unless a high school program is academically rigorous—in addition to being economically relevant—it is inadequate preparation for either the demands of postsecondary education or the training required to participate in the 21<sup>st</sup>-century economy.

#### WHERE THE JOBS ARE

According to the U.S. Department of Labor, there currently are 29 million “middle-skill” jobs (jobs requiring more than a high school diploma but less than a four-year degree) in this country. The Labor Department expects the economy to create 14 million additional middle-skill jobs over the next 10 years. These reasonably high-paying middle-class jobs will require specific skills and postsecondary

credentials. Young people who are able to attain the relevant credentials and skills—and who, in some cases, will go on to get four-year degrees and more—will benefit from an expanding economy in which their services will be in high demand. But those without the requisite training will be left behind in an uncertain world with limited and diminishing prospects.

Let's compare the numbers. As noted earlier, wages for high school-only graduates typically will max out at \$15 per hour—often for less than full-time work without overtime, vacation pay, retirement savings, or medical coverage. By contrast, those with postsecondary training in critical areas can expect to occupy middle-skill jobs with starting full-time salaries approximating \$40,000 per year and more. Studies show that disciplinary focus can be more important to earnings than the number of years of training. For cities and states struggling with budgetary cutbacks, diminishing tax revenues, and fraying social safety nets, the benefits (calculated in improved tax revenues) of improving high school completion rates, along with the rigor and relevance of those programs, are immediately clear.

Rigorous and relevant high school programs will result in a growing, wage-earning, tax-paying middle class that will return rich dividends on state and city investments in education. Meanwhile, locales that focus on quantity over quality when it comes to graduating young people from high school with the ability to attain postsecondary skills will remain mired in a world of dwindling opportunity—unable either to attract or retain employers, or maintain their tax base.

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#### INNOVATION IN EDUCATION

We must improve the quality of education and equip high school graduates with the skills they need to obtain the credentials required to participate in the 21<sup>st</sup>-century economy. Taking steps to evolve and improve education is nothing new. In fact, educational investments and structural changes to meet the needs of changing economies have been made before in U.S. history.

As this country became more urban, the nature of work shifted from farm to factory. With this shift, the basic skills provided of an eighth-grade education (the minimum American educational standard prior to World War II) were no longer enough for a growing and increasingly industrialized nation. After World War II, the United States emerged as a global industrial power and updated its educational standards to keep pace with a new world economy by making high school mandatory. Upgrading the minimum national educational requirement from 8<sup>th</sup> grade to 12<sup>th</sup> grade was a game-changing innovation that resulted in more than 50

years of economic growth and middle-class prosperity. Just as influential was the creation of the Servicemen's Readjustment Act of 1944 (the GI Bill), which expanded higher education opportunity to veterans and resulted in a significant increase in the number of Americans with a postsecondary education.

Now, in the second decade of the 21<sup>st</sup> century, we stand at a similar crossroads with a similar set of requirements and opportunities. It is time for the United States to revise the traditional 9-12 high school model upward into a new and more rigorous, relevant, and integrated approach that includes grades 9 through 14. This will give every graduate both a high school diploma and the two-year postsecondary training they will need to compete successfully for middle-skill employment in a 21<sup>st</sup>-century job market that will continue to grow over the next decade. Such an innovation in education is as significant as developing a new product that revolutionizes the marketplace. The grades 9 through 14 model is an innovation that reengineers education at its core as it ushers in a new era in which educators and employers work together to connect training directly to jobs.

#### PATHWAYS TO PROSPERITY

As part of developing an innovative approach to integrating secondary and postsecondary education with workplace learning to connect training more directly to employment, IBM focused attention on the data that provide growing evidence of a skills gap in the American economy. In our monograph entitled *STEM Pathways to College and Careers Schools: A Development Guide*, we note that many young adults (including those with only high school diplomas, and those who have completed some college) lack the academic knowledge and workplace skills to succeed in the 21<sup>st</sup>-century economy. As completion rates for four-year colleges improve, undereducated young people are subjected to downward market pressures as they are replaced by college graduates (or those who have completed some college) and pushed out of the middle class.

*Mobility Makers*, the 2011 study by the Center for an Urban Future, indicates that, even though young people understand the need to acquire skills and education to qualify for jobs in today's global economy, a stunningly high percentage of them still fail to finish their college degree. The two most significant factors driving down college completion rates are inadequate academic preparation and lack of guidance and support.

These low graduation rates come with substantial financial implications for students and taxpayers alike. For example, the study indicates that each community college dropout costs New York City more than \$17,000 in federal, state, and city aid and funding. Furthermore, those without college degrees typically earn 85 percent less than their college-educated peers over a lifetime. The study concludes that a mere 10 percent increase in community college graduation rates in New York City would increase earnings for that graduating class by \$631 million in the first year alone, and by \$3.4 billion over a 30-year career—with profound implications for the city's tax base.

Meanwhile, the 2011 *Pathways to Prosperity* report by researchers at the Harvard Graduate School of Education advances the thesis that American schools have been too restrictive in their homogeneous approach to preparing *all* graduates to attend four-year colleges. The authors write that “preparing for college and preparing for a career should not be mutually exclusive options.” This is because 60 percent of Americans do not earn a four-year degree by their middle twenties, and more than 70 percent of two-year college students in large cities fail to earn their degrees even after three years. With half of new middle-skill jobs over the next 10 years expected to require a two-year college degree, America’s low degree-completion rates represent a huge missed opportunity to reduce youth unemployment.

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To help bridge the gap between where we are and where we need to be, IBM partnered with the New York City Department of Education, the City University of New York, and the New York City College of Technology on the Pathways in Technology Early College High School (P-TECH). New York City plans to expand the P-TECH model over the next several years. The model has already been replicated in Chicago and is spreading throughout New York state under the leadership of Governor Andrew Cuomo, who has announced plans to create new P-TECH schools in each of the state’s 10 economic development districts.

This innovative approach to connecting education to jobs is a three-way collaboration among a school system, a community college, and a corporate partner. Workplace skills such as knowledge acquisition, teaming, problem-solving, and verbal and writing skills are embedded in the curriculum. Courses use project-based learning to enable students to work in teams, solve problems, create business plans, and learn presentation skills. Structured workplace visits to a P-TECH model school’s corporate partner are part of the academic program. In addition, every student has a mentor from his or her school’s corporate partner and has the chance to visit a workplace, learn through an internship, and take regular college courses (not high school advanced placement courses) as early as the 10<sup>th</sup> grade.

This is not to say that we don’t incorporate innovative uses of technology into the P-TECH model. First of all, to enhance the value of the mentor/protégé relationship, we developed the MentorPlace website to make mentor activities more substantive and more connected to academic standards and learning goals. We also created a site called Teachers TryScience, which provides educators with access to the best science lesson plans, videos of board-certified teachers teaching

them, and collaborative tools to allow teachers to assist each other in incorporating science into the classroom in exciting ways. Finally, to assist students who have lower reading skills, IBM researchers used voice-recognition technology (pioneered by IBM Research) to develop a learning tool that helps address reading deficiencies. These tools are available to P-TECH-model schools, to other schools that work with IBM, and to NGOs engaged in literacy education. That said, the key to the P-TECH strategy is not a piece of technology or a software tool. Rather, the true innovation of the P-TECH model is the integrated six-year program that creates a clear pathway from school to career via curriculum restructuring and the addition of two years of instruction.

The results have been impressive. In these public, non-charter, open-admissions schools serving culturally and economically diverse populations, academic achievement and attendance have been exceptionally high. If this model were broadly replicated under existing Carl D. Perkins Vocational and Technical Education Act funding, hundreds of thousands of young people could benefit from the increased opportunities to participate more fully in a growing middle-class economy. The results for these young adults, their families, and their communities would include shrinking unemployment levels, along with a growing and stable tax base.

The prospects for a long-term and sustainable “return on investment” in our young peoples’ education have never been more promising. In his February 2013 State of the Union Address, President Obama stated that every student should be given the P-TECH opportunity: to be motivated, to learn, and to apply their skills in a meaningful and rewarding career. In response, the U.S. Department of Education and other key federal government entities are developing plans to build on P-TECH’s success, and to offer the program to many more students.

#### WHERE WE SHOULD START

More than \$1 billion in funding for innovation in American education already exists under the Perkins Act, but our funds-deployment protocol—which largely follows population-based formulas, with few demands for metrics or accountability—needs to be restructured to incorporate three critical components:

- There must be a clear requirement that career and technical education (CTE) is connected to labor market data so that graduates are prepared for present and future jobs.
- CTE programs must be structured as public-private partnerships between educators and employers to ensure that curricula are both academically rigorous and economically relevant.
- Community colleges and four-year institutions must be included in the design and implementation of CTE programs as part of a concerted effort to prepare young people for careers. In addition to restructuring their curricula, postsecondary institutions must help reshape work opportunity programs such as Federal Work Study so that students can gain relevant workplace experience

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(versus cafeteria or library jobs unrelated to career preparation) during their academic training—essentially offering an American version of the successful European apprenticeship model.

Together, the Carl D. Perkins and Federal Work Study programs provide more than \$2 billion in support to states, districts, and schools for education and training. We need to be much smarter about how we allocate these resources to states and localities, and we must insist on accountability for performance. Repurposing existing funding to support broad replication of the P-TECH model could go a long way toward reducing youth unemployment; reenergizing communities with new hopes, new growth, and new tax revenues; and reinforcing America's ability to compete on the global economic stage. By adopting true innovation that affects both how and what we teach—and ensuring that our young people receive education that is both academically rigorous and relevant to the demands of the global marketplace—we can close the “skills gap” in our economy, overcome the challenges of youth unemployment, and reap the economic benefits for decades to come.