

Expanding the Scope of Workforce Development

By Kartik Athreya, Urvi Neelakantan, and Jessie Romero

Workforce development efforts often are geared toward adult workers. But examining workforce development from the perspective of human capital theory suggests that earlier interventions may yield high returns.

“Workforce development” encompasses a broad set of activities that generally may be viewed as trying to achieve one of three goals: providing for the economic security of an individual; creating a highly skilled workforce that will attract employers to a region; or ensuring that an organization has the workers it needs to remain competitive.¹ Workforce development programs are offered by a range of public and private organizations at the federal, state, and local levels. These programs may include skills assessment, job-search assistance, counseling, job training, or even lessons in “soft skills,” such as self-presentation and time-liness. Recipients include new entrants to the workforce, displaced workers, veterans, youth, and people with disabilities, among others.

This *Economic Brief* focuses on workforce development from the perspective of the individual worker, drawing both on economic research and on findings from focus group meetings organized by the Richmond Fed with educators and workforce development professionals in different regions of Virginia. More specifically, this *Economic Brief* examines workforce development through the lens of human capital theory, which studies individuals’ investments in knowledge or skills that contribute to their productivity. Human capital theory suggests that young people might be an important area of focus for workforce development programs. Arguably the most crucial investment in human capital—post-secondary

education—is typically made when people are young. But research suggests that many young people are not well-informed about the returns to educational or career paths. As a result, there may be significant gains from including information dissemination within the scope of workforce development to equip young people to make well-informed choices about this investment.

Workforce Development Programs

At the state and local levels, a significant portion of public funding for workforce development comes from the federal Workforce Investment Act of 1998 (WIA). This Act consolidated numerous programs into “one-stop” employment centers and sought to give more control to states and localities by creating workforce investment boards composed of local business, education, and labor leaders. The WIA funds programs for three main constituencies: displaced workers, economically disadvantaged adults, and young people from low-income families who face specific barriers to employment, such as being a parent, a high school dropout, or a juvenile offender.

Apart from a temporary increase in WIA funding through the American Recovery and Reinvestment Act of 2009, WIA appropriations have declined since the early 2000s, from \$3.3 billion in program year 2001 to \$2.5 billion in program year 2013. About two-thirds of the funding goes toward programs for adults, including displaced

workers, and one-third goes toward programs for youth. Money is allotted to each state according to a formula based on the state's unemployment rate and the number of economically disadvantaged people who reside there. In program year 2013, the Fifth District states and Washington, D.C., received a total of \$220 million.²

In addition to local workforce investment boards, eleven federal agencies offer dozens of different programs targeted toward specific populations, such as veterans or former offenders. Including WIA funding, the federal government spends about \$16 billion annually on employment and training programs.

In the private sector, in addition to providing on-the-job training, a growing number of employers are partnering with community colleges or other organizations to fill specific workforce needs. In Charlotte, North Carolina, for example, eight manufacturing companies offer apprenticeship programs in conjunction with Central Piedmont Community College. These programs train high school students for specific careers, such as welding fabrication or machining, while the student earns an associate's degree.³

Human Capital Theory

In the early 1960s, recognizing that people are not endowed with their full economic capabilities at birth, economists began formally studying the forces and decisions that lead people to differ in those capabilities. The knowledge or characteristics that make a worker more productive—the worker's set of marketable skills—can be thought of as a form of capital. Workers acquire this "human capital" by making investments, for example by attending school, getting on-the-job training, or even receiving medical care.⁴ Human capital is similar to tangible capital in that it is a durable asset that yields useful outputs over time, but unlike tangible capital, it can't be separated from the person in whom it resides in the same way a piece of equipment can be removed from a factory.

Human capital theory yields several insights that are particularly relevant for workforce development programs. First, optimally, intensive human capital formation in the form of formal schooling is

undertaken by the young because the earlier workers invest, the longer they have to recoup and profit from their investments. In addition, because income tends to be higher later in life, the opportunity cost of time spent in school is lower for young people. Human capital theory also suggests that higher education is necessarily correlated with higher wages, even if more education doesn't necessarily make a worker more productive. Because education is costly to acquire, it typically offers people a return on their investment in the form of higher expected wages. Finally, workers must consider the risks and rewards of human capital investment just as they would for any other investment.

Education and the Labor Market

Workers with different amounts of human capital, especially different levels of education, face very different labor market conditions. Following the 2007-09 recession, for example, the unemployment rate for workers with only a high school diploma peaked at 11 percent versus a peak of just 5 percent for workers with a college degree. Workers who had not graduated from high school confronted an unemployment rate of 15.8 percent. Currently, the unemployment rate for high school-educated workers, 6.3 percent, is about twice the rate for college-educated workers, 3.3 percent. (See Figure 1 on page 3.)

Education also has a significant effect on earnings. The median weekly wage for a worker with a bachelor's degree or higher in 2012 was \$1,165, compared with \$652 for a worker with only a high school diploma. Over a lifetime, the median worker with a bachelor's degree can expect to earn \$2.3 million, based on 2009 earnings data, compared with just \$1.3 million earned by the median worker with a high school diploma.⁵ The "college premium," as this earnings gap is known, has increased significantly since 1980. (See Figure 2 on page 4.)

It is important to note that lower unemployment rates and higher earnings are benefits that appear to accrue to students who graduate from college; the payoff obtained by those attending for only a few semesters without earning a degree is relatively low. While the unemployment rate for college graduates

is about 50 percent of the rate for high school graduates, the rate for students with some college but no degree is about 90 percent of the rate for workers with only a high school degree. And while students who have attended some college do earn about 15 percent more than high school graduates, on average college graduates earn 80 percent more. Despite the large payoff to college completion, however, the college dropout rate is around 40 percent.⁶

Completion is an issue at the high school level as well, even though workers who have not graduated from high school face high unemployment rates and low earnings. Nationwide, about 25 percent of high school students fail to graduate within four years; the rate is as high as 40 percent in some large urban school districts. About 7 percent of students nationally never earn a high school diploma or a certificate of high school equivalency.⁷

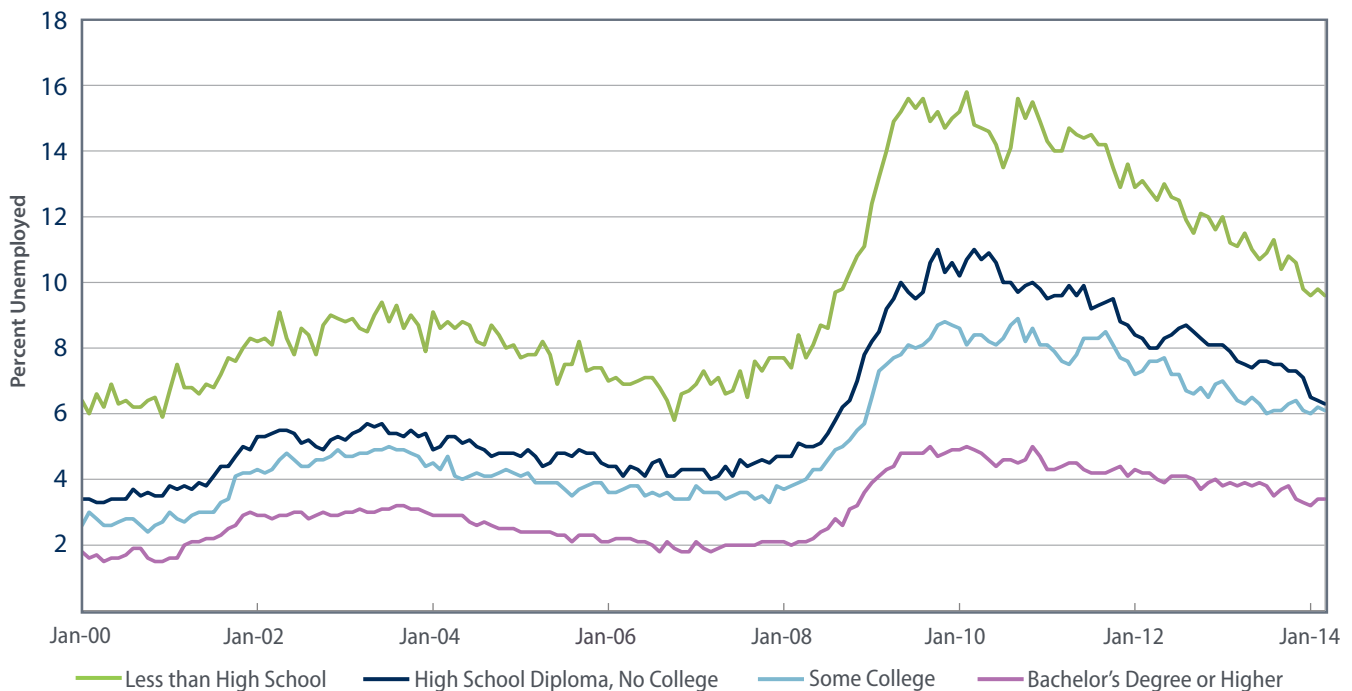
Implications for Workforce Development

Human capital theory suggests that human capital investment is likely to yield the highest return when it occurs early in life. In addition, human capital em-

bodies more than just years spent in school or on the job. Research suggests that non-cognitive skills—such as following instructions, patience, and work ethic—lay the foundation for mastering more complex cognitive skills later in life and may be just as important a determinant of future labor market success.⁸ These basic emotional and social skills are learned very early in life, and it can be difficult for children who fall behind to catch up. Gaps in skills that are important for adult outcomes are observable by age 5 and tend to persist into adulthood.⁹

Workforce development professionals at each of the locations visited by Richmond Fed researchers reported that a lack of soft skills is a major obstacle to employment for their adult clients. Employers who participate in the Richmond Fed’s industry roundtables also have shared that many job applicants do not have the necessary soft skills. This suggests that interventions well before adulthood—even as early as preschool—can reasonably be considered part of a comprehensive workforce development program. An early focus on critical non-cognitive skills may help improve labor market outcomes later in life.

Figure 1: Unemployment Rates by Education Level, 2000–2014



Note: “Some college” includes workers with associate’s degrees.

Sources: FRED Economic Data (Federal Reserve Bank of St. Louis), Bureau of Labor Statistics

There may also be large gains from including information dissemination in workforce development programs. Specifically, successfully transmitting information to high school students about different career and post-secondary education options and about the level of preparedness necessary for college success could improve the labor market outcomes of students at risk of dropping out of high school.

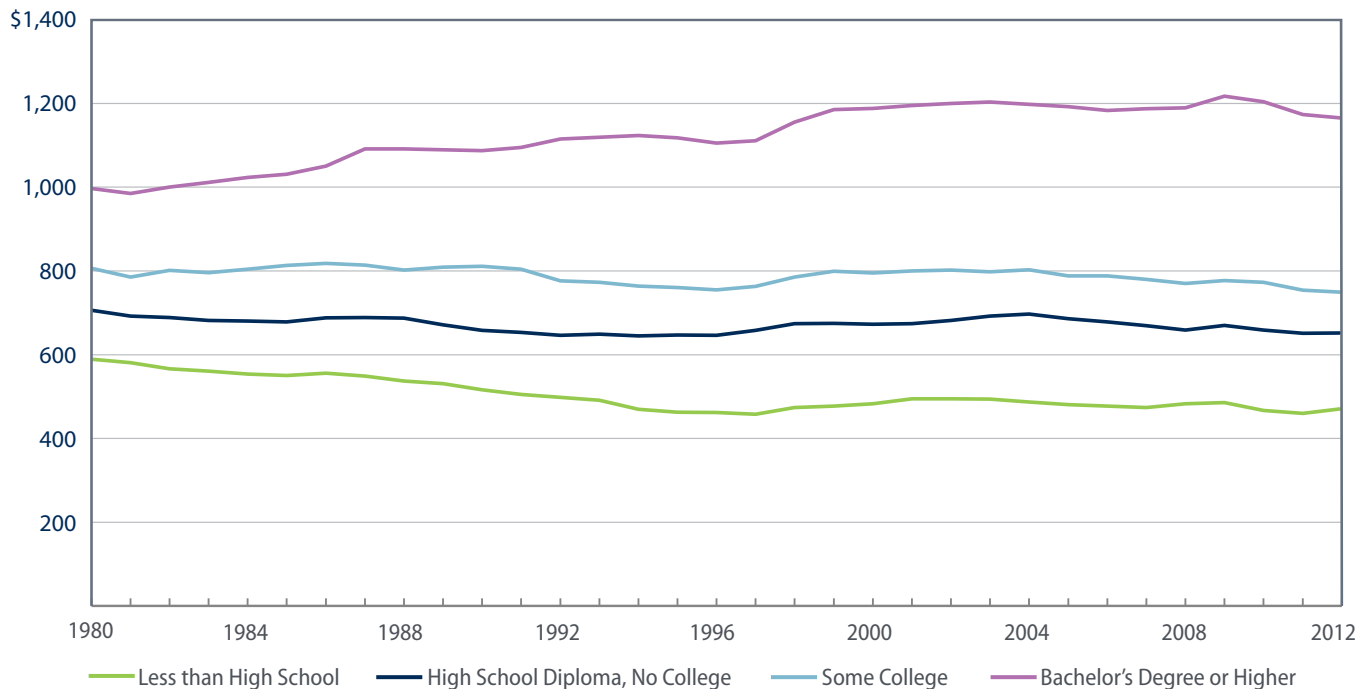
A host of socioeconomic variables influence the high school dropout rate, but one important factor may be the increasing focus of most high schools on college preparation, to the exclusion of other options. Some students may not wish to attend college or may perceive large barriers to doing so. If these students believe that the only reason to complete high school is to attend college, then they might not see much value in graduating. For such students, learning about alternative career and educational opportunities that also require a high school degree could increase the perceived value of high school completion.¹⁰

Many students also are likely to benefit from more information about the level of preparedness required

to succeed in college. Representatives from four-year colleges and community colleges in the Hampton Roads area noted that many students are surprised to learn upon entering college that they lack the basic math skills necessary for college-level work. High school teachers and administrators in counties in southern and northern Virginia shared that many students did not know how to self-direct or self-motivate, skills that are critical for college success. If students do not have an accurate assessment of their own readiness for college, they may be more likely to drop out after they get there.

Surveys have shown that this happens with some frequency. Entering college students say they are highly optimistic about their grades and that they intend to graduate within four years. But as they take classes and exams, they revise their assessments of future performance, and these updated beliefs play a large role in their dropout decisions.¹¹ As noted above, there is relatively little economic benefit to attending a year or two of college, but the costs can be large: the average debt burden among college dropouts who took out loans is more than \$14,000.¹²

Figure 2: Median Weekly Earnings by Education Level, 1980–2012



Note: "Some college" includes workers with associate's degrees. Earnings are in 2012 dollars.
Source: Bureau of Labor Statistics

These students could benefit from learning about options other than enrolling directly in four-year colleges. Community colleges, for example, are a venue where students can learn more about their interests and aptitudes and hone the skills that are required for success at four-year schools.¹³

In addition, there is a large difference between the average return to college and the return likely to accrue to any individual student. For example, not all college majors are created equal. The median salary for workers who majored in engineering is \$75,000, compared with \$42,000 for workers who majored in psychology or social work.¹⁴ And students may vary in other ways that affect their labor market chances irrespective of major. But many students do not seem aware of the difference between the average return and their own likely return, as college teachers and administrators in the Hampton Roads area noted. Their perception is supported by research that finds college freshmen are misinformed about earnings prospects in general and about the prospects for specific majors.¹⁵ Workforce development thus could include providing students with the information they need to weigh their relative risks and rewards of college attendance.

Other students might know that attending college is not their desired path. These students would benefit from learning about other post-secondary-education options that could improve their labor market outcomes relative to only completing high school or dropping out of college. For example, a growing number of vocational or apprenticeship programs offer specialized training in areas that are in high demand, such as health care and advanced manufacturing. Jobs in these areas may be less vulnerable to automation or offshore competition than many traditional white-collar jobs, although specialized training may increase the risk that workers will be less able to adapt to future technological changes.¹⁶

The flipside of providing information to students who do not wish to attend college, or who might not be prepared to attend, is ensuring that well-prepared students don't forgo college because of perceived obstacles such as cost or lack of knowledge about the payoff. At first glance, high-achieving students

who don't apply to college might appear myopic or impatient, unwilling to wait to realize a return on the investment. But many students, particularly low-income students, overestimate the costs of college and underestimate their opportunities for financial aid. Students also might face social norms that cause them to underestimate their potential benefits or their likelihoods of success. In these cases, what looks like impatience may simply be a lack of information.¹⁷

Northern Virginia and southern Virginia illustrate these different information needs. In northern Virginia, home to several high-income counties, administrators report that high school students receive little information about options other than attending a four-year college and that there is a stigma associated with technical or community college. But many of the students who enroll in a four-year school end up bouncing back into community colleges. Administrators say that these students needed more information about other options up front.

In rural southern Virginia, where several generations of workers earned good wages in textile mills that are now closed, school workers reported the opposite problem: many students do not believe that college is necessary or feasible for them. These students are likely to require more information about the potential returns to college attendance and the availability of financial aid and academic assistance.

Conclusion

As evidenced by the disparity in unemployment rates and earnings, the most-skilled workers are the most protected from both individual and aggregate shocks, such as job losses. Many workforce development efforts aim to provide adult workers with more skills after a shock has occurred, for example by retraining displaced workers. But examining workforce development through the lens of human capital theory suggests that workers will realize higher returns on their investments in human capital when those investments occur early. For this reason, programs directed toward young people, particularly programs that provide information about the risks and returns of multiple career and educational options, may be especially fruitful. ■

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Endnotes

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- ⁴ For foundational papers, see the *Journal of Political Economy*, October 1962, vol. 70, no. 5, Part 2: Investment in Human Beings.
- ⁵ See Carnevale, Anthony P., Stephen J. Rose, and Ban Cheah, "The College Payoff: Education, Occupations, Lifetime Earnings," Georgetown University Center on Education and the Workforce, August 5, 2011.
- ⁶ The National Center for Education Statistics defines college completion as earning a bachelor's degree within six years of matriculating. Graduation rates are calculated according to where students started as full-time, first-time students. Transfer students and students who return to college after an absence are not included.
- ⁷ See Cullen, Julie Berry, Steven D. Levitt, Erin Robertson, and Sally Sadoff, "What Can Be Done to Improve Struggling High Schools?" *Journal of Economic Perspectives*, Spring 2013, vol. 27, no. 2, pp. 133-152; and the U.S. Department of Education, *Digest of Education Statistics 2012*.
- ⁸ For example, the general educational development (GED) credential is supposed to be equivalent to a high school diploma, but people who have earned a GED tend to have much worse labor market outcomes than people who have graduated from high school. This may be because the same non-cognitive skills that are necessary to complete high school also determine labor market success. See Heckman, James J., John Eric Humphries, and Nicholas S. Mader, "The GED," National Bureau of Economic Research Working Paper No. 16064, June 2010.
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