

# The Pursuit of Pathways

## Combining Rigorous Academics with Career Training



BY ROBERT B. SCHWARTZ

In February 2011, I, along with two colleagues, economist Ronald Ferguson and journalist William Symonds, released a report, *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century*, which was published by Harvard University's Graduate School of Education.<sup>1</sup> When we first began meeting to discuss the study that led to this report, we were mindful of the fact that 20 years earlier a commission established by the William T. Grant Foundation had issued a powerful report called *The Forgotten Half: Non-College Youth in America*.<sup>2</sup> As the title suggests, this 1988 report argued that public resources and support were disproportionately focused on young people headed for higher education, and that without a much more robust investment in preparing non-college-bound youth for successful transition into the workforce, these young people would be at significant social and economic risk. The jumping-off question for our study was: Is there still a “forgotten half” today, and if so, how do we make more progress in serving that population in the next 20 years than we’ve made in the last 20?

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On the face of it, it seemed unlikely that we would find a persisting “forgotten half” of young people in 2011. For one thing, the term “non-college-bound” has essentially disappeared from our vocabulary. Over the last 20 years, there has been growing public agreement that all young people need to be prepared for further education as well as careers. When high school students are asked today what they are going to do after high school, over 90 percent say they are going on to college or university. More important, over 70 percent of high school graduates do in fact go on to enroll in a higher education institution. But when we ask what proportion of young Americans have earned a college or university degree by their mid-20s, the answer is less encouraging: only 32 percent have graduated from a four-year institution, and another 10 percent from a two-year college.<sup>3</sup> We estimate that roughly another 10 percent have acquired a recognized one-year occupational certificate from a postsecondary education or training institution.<sup>4</sup> This brings us to just over half the population with a meaningful postsecondary credential by their mid-20s.

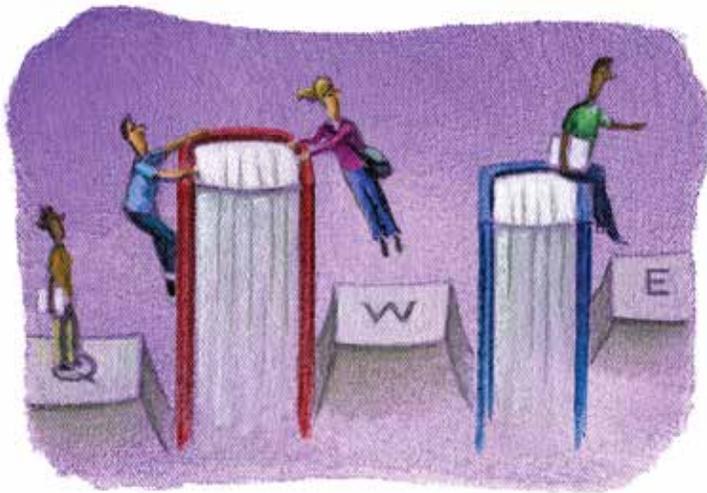
It may be an exaggeration to characterize the other half of the age cohort as “forgotten,” but in an economy in which the gap between those with postsecondary credentials and skills and those without is widening, the one young person in five who drops out of high school is especially vulnerable, but so are those who start some form of higher education but never finish. Our conclusion, looking at our high school and higher education dropout data, was that, if anything, the case for investing in developing a set of rigorous career and technical education pathways alongside the strictly academic pathway is even stronger today than it was 20 years ago.

This conclusion was buttressed by two sources of data. First, job projections from the Georgetown University Center on Education and the Workforce suggest that over the next decade, nearly a third of jobs will be “middle skill”—i.e., requiring some education or training beyond high school but not necessarily a four-year degree.<sup>5</sup> This projection challenges the widespread belief that our labor market is becoming increasingly bifurcated into high-skill and low-skill occupations, and that the only good jobs in our economy will require a four-year college degree.

The second source of data we found compelling comes from two recent studies from the Organization for Economic Cooperation and Development, *Learning for Jobs* and *Jobs for Youth*.<sup>6</sup> These two studies provide strong evidence that countries with the best-developed vocational education systems—especially the countries with the strongest youth apprenticeship programs—manage to equip a much larger fraction of their young people with skills and credentials to make a successful transition from second-

a separate system, organized and governed at the state level independent of academic high schools. It was not until the 1960s that there was federal support for vocational education programs offered inside regular comprehensive high schools.

Consequently, while vocational education mostly has taken place inside comprehensive high schools for the last half-century, its programs have been offered on a separate track from programs serving university-bound students. American high schools continued to function largely as sorting and selecting machines, identifying those students deemed to have the talent for higher learning and providing them with a rigorous academic education while expecting everyone else to enter the labor market directly upon graduation. Despite our rhetoric about the democratic purposes of comprehensive high schools, by and large these institutions were organized in ways that perpetuated existing racial and economic stratification, with low-income and minority students disproportionately concentrated in the vocational track.



The gap between those with postsecondary credentials and skills and those without is widening.

ary school into the workforce, thereby significantly reducing the proportion of young people at risk of sustained unemployment at the point of entry into the labor market.

### The Problematic Status of Vocational Education

When I talk with colleagues about the virtues of the Swiss or German apprenticeship systems—i.e., how these are mainstream systems, serving a broad range of students, preparing people for white-collar careers in high tech or banking as well as the traditional blue-collar trades—the first response is often, “But don’t they track students as early as age 10, something we would never condone?” Leaving aside for the moment the pervasive but subtle forms of tracking that characterize much of American education, the answer, at least for Germany, is unfortunately “Yes, they do track very early.” Given the history of vocational education in the United States, especially the perception that in large urban districts it has too often been a “dumping ground” for low-income and minority youth, this is usually a conversation-stopper.

To understand this reaction, one needs to understand something about the history of vocational education in the United States. Vocational education, in part because of the stimulus of a major piece of federal legislation in 1917, developed mostly as

With the rise of the standards movement, however, the name of the game changed. Driven largely by the dramatic changes taking place in the economy—the decline of manufacturing, the computing revolution, globalization, and outsourcing of lower-skill jobs—schools were now being asked to provide *all* students with a foundational level of academic skills that hitherto were expected only of those who were bound for college. With rising academic expectations came rising accountability for results, which meant increased pressure on schools to devote more time to core academics, especially those subjects being assessed for accountability purposes, and less time for electives, including vocational education. Consequently, the percentage of students taking three or more courses in a single vocational area has steadily declined over the last three decades, dropping from 34 percent in 1982 to 19 percent in 2009.<sup>7</sup> While the rhetoric in today’s policy environment is that all students should leave high school college and career ready, the reality is that almost everywhere career readiness is on the back burner.

### The New CTE

In the past two decades, new models of vocational education have emerged that demonstrate that it is possible to combine rigorous academics with career training in high-skill, high-demand fields.

In order to differentiate these kinds of programs from vocational education in the more traditional trades, the term “career and technical education” (CTE) has come into use. These models are best seen in a set of national programs that have acquired sufficient scale to become important players in the high school reform world. Our *Pathways to Prosperity* report profiles several such programs.

Perhaps the best-known model combining strong academics with career preparation is the career academy. Career academy programs typically enroll young people in grade 9 and carry them through high school graduation. There are roughly 3,000 career academies in the United States, 500 of which operate under the umbrella of the National Academy Foundation (NAF). NAF academies prepare young people in five career areas—finance, engineering, information technology, health sciences, and hospitality and tourism. A key feature of the NAF design is that all students are promised a six- to 10-week paid internship with one of 2,500 corporate partners.

NAF’s engineering academies utilize curriculum developed by Project Lead the Way, a national four-year pre-engineering program now enrolling 300,000 students in 3,500 high schools across

with rigorous academics. One very positive consequence of the standards movement has been that it has created pressure on school districts to close down the low-level, low-expectations math and science courses that vocational students were often assigned to. In a world in which all students are required to pass assessments in math and English based on challenging academic standards as a condition of high school graduation, there is no longer room for such courses.

An important common denominator that characterizes our strongest national and state CTE programs is that they are designed to leave open the option for successful graduates to continue on to higher education, and this is in fact what most of their graduates do. Over 90 percent of NAF graduates, for example, plan to go on to higher education, most to four-year colleges, and more than half graduate in four years (by contrast, the six-year graduation rate nationally is only 58 percent).<sup>8</sup>

A related common denominator is that these programs typically are designed to serve a broad range of students. These programs are not intended primarily for at-risk students or students with very low academic skills. The involvement of employers in program design and the provision of internships or other forms of work-



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the country.\* Students move through a sequence of increasingly challenging courses culminating in a capstone course in engineering design and development in which they work in teams to devise a solution to an open-ended engineering problem.

High Schools That Work (HSTW)<sup>†</sup> is another national network, including more than 1,200 schools in 30 states and the District of Columbia. Operated under the sponsorship of the Southern Regional Education Board, HSTW’s mission has been to ensure that vocational education concentrators are receiving rigorous academics, especially in mathematics and science, so that they are fully prepared to succeed in postsecondary education as well as the workplace.

In addition to these and other national networks, many states have revamped their old vocational programs or created new ones that combine instruction in more modern, challenging career areas

based learning create a set of behavioral expectations around attendance, punctuality, respectful communication, teamwork, and other “soft skills” that typically carry over into the classroom setting, creating a seriousness of purpose often missing from other high school classrooms serving similar students.

The challenge for the United States is not simply to scale up quality CTE programs like those described above, but rather to create a pathways system within which these and other effective program models can grow and flourish. This is why the experience of European apprenticeship countries is potentially so relevant for us. In Austria, Denmark, Finland, Germany, the Netherlands, and Switzerland, one can see coherent vocational systems designed to help most young people make a successful transition from secondary school to work. Although the design of these systems differs from country to country, there are some common elements. These systems all serve a broad range of students, between 30 and 70 percent of the age cohort. They all offer pathways leading to qualifications in a broad range of occupations, beyond the blue-collar trades that we associate with apprenticeships. They all combine learning at

\*For more about the National Academy Foundation and Project Lead the Way, see [www.naf.org/naf-academies](http://www.naf.org/naf-academies) and [www.pltw.org/about-pltw](http://www.pltw.org/about-pltw).

<sup>†</sup>For more about High Schools That Work, see [www.sreb.org/page/1078/high\\_schools\\_that\\_work.html](http://www.sreb.org/page/1078/high_schools_that_work.html).

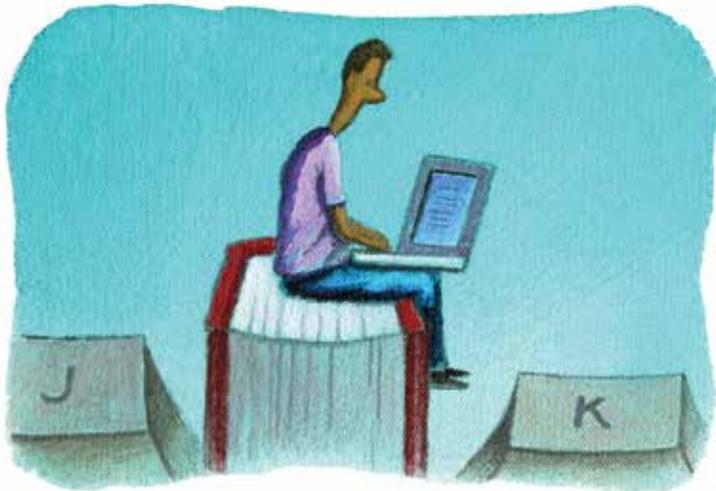
the workplace with aligned academic coursework in a classroom setting. They all have substantial employer involvement in curriculum design and standard-setting in order to ensure that the qualifications graduates earn will have currency in the labor market. And all of these systems acknowledge the need to create options for graduates to continue on to further education if they choose.

It is easy for American policymakers to tick off the reasons why such systems can't (or shouldn't) be built in the United States. These systems depend on early tracking. They expect students to make binding career choices at too early an age. They require a degree of centralized planning that we would never tolerate. They are built on trade and craft traditions that we don't share. Their employers have strong incentives to participate, and partner with unions, in part because their labor markets are more regulated than ours. The list goes on.

While all of these concerns have some basis in reality in one or more of these systems, they are by no means universal. For example, Finland and Denmark demonstrate that one can have a high-quality upper-secondary vocational system without early tracking. While Germany and Switzerland ask students to choose from a bewilderingly large list of occupations, Denmark asks students to

1. All students are provided the same core academic curriculum at least through grade 10 (age 16).
2. There is much-expanded investment in career information, counseling, and workplace exposure beginning in the middle grades and continuing through secondary school.
3. All career pathways are aligned with regional labor market needs, have significant employer engagement, and lead to a postsecondary credential with currency in the labor market.
4. All pathways provide continuing academic skill development—especially analytic reading, writing, communication, and quantitative reasoning—integrated with career and technical education.
5. Enrollment in a pathway is based primarily on student and family choice, not assignment by the school.
6. All pathways are designed to leave open the possibility of further education beyond the attainment of the initial occupational certificate or degree.

These principles can best be seen in operation in Northern European countries like Finland and Denmark. While these countries do not have as well-developed apprenticeship systems as



Our strongest CTE programs are designed to leave open the option for successful graduates to continue on to higher education.

choose initially from 12 occupational clusters, and only later do students zero in on a more specific occupation. While it is true that the German labor market is highly regulated, the Swiss labor market operates much like ours, and Switzerland's apprenticeship system is, if anything, even more impressive than Germany's. Switzerland also has the lowest youth unemployment in Europe. And I don't believe any of these systems treats the apprenticeship contract as irrevocable; in fact, about 20 percent of German apprentices switch occupations after the first year.

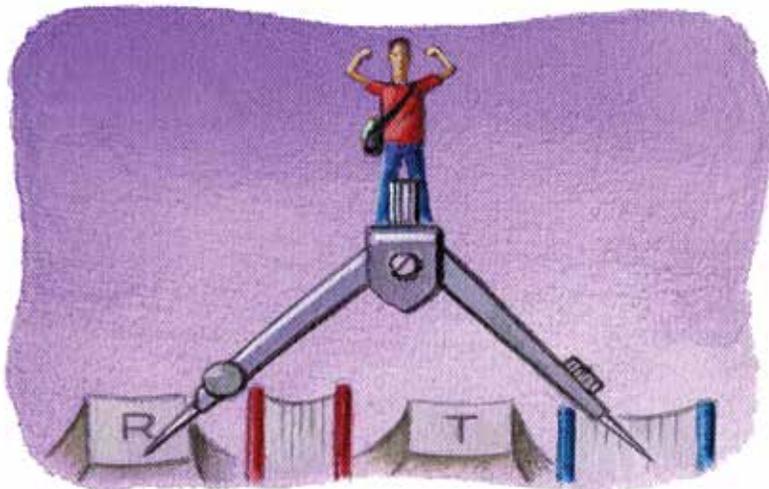
### An American Pathways System

So what would a U.S. pathways system look like—one that avoids the pitfalls of tracking and draws on the best features of the strongest European systems? Given our history and culture, is it feasible to imagine that the United States could ever build a vocational education system that has at least some of the attributes of the strongest European systems? I believe the answer is yes, but it would require an approach built upon the following principles:

Austria, Germany, and Switzerland, they do have the advantage of satisfying principles 1 and 5, critically important if this approach to secondary education is ever to take root in the United States. Finland is especially impressive in this regard. Finland has no tracking whatsoever through grade 9, at which point students choose between academic and vocational upper-secondary schools. The fact that over 40 percent of young Finns now opt for vocational education in a technology-driven economy suggests that it is possible to design a vocational system that can compete with the university-bound system on a level playing field for status and resources.

There are very substantial challenges that would have to be overcome in order to implement the principles enumerated above, especially the third principle. Many American high schools have benefited over the years from partnership programs with local employers. Such programs run the gamut from modest support for sports or other extracurricular activities to scholarships for graduates to more substantial career-related initiatives involv-

ing such things as mentoring, job shadowing, work-based learning, and summer internships. These latter opportunities are usually attached to career academies or other strong CTE programs with active employer advisory committees. In contrast with Northern European systems, however, U.S. employers do not engage with our high schools with the expectation that they are helping to identify and train entry-level employees for their firms, or even the next generation of workers for their industries. Rather, the overwhelming majority of CTE programs in our schools are designed to be exploratory, to expose young people to the world of work, and to motivate otherwise academically disengaged youth to understand why the acquisition of foundational literacy and quantitative reasoning skills matters in the labor market.



In New York City, where the small-schools strategy has been most fully implemented, there is powerful evidence that this strategy has significantly boosted student achievement and increased high school graduation rates, especially for disadvantaged students.<sup>9</sup> Even in New York, however, many of these small schools or academies have very weak or nonexistent employer engagement and are focused more on high school completion than on career preparation.

In its pure form, this option would require all students to choose a career area or theme around which their high school education would be organized. Twenty years ago, the state of Oregon adopted legislation based on this principle. High schools were to organize themselves into broad career majors—e.g., health, environment,

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A major cultural difference between U.S. employers and those European employers that participate in apprenticeship programs is that most U.S. employers are deeply skeptical that 16- or 17-year-olds can add value to their firms' bottom lines. This may be a chicken-and-egg phenomenon: schools don't ask employers to provide anything like European-style apprenticeship opportunities because they assume employers will refuse, and employers don't offer them because they doubt that high schools could organize themselves to support such opportunities by providing the rigorous, aligned academic work that could help students perform successfully in the workplace.

### Organizing a Pathways System: Three Options

Given these challenges, how might a pathways system be best organized? I see at least three major options. The first, which is already being implemented in some large urban high schools, is to universalize the career academy model. In cities like New York, Chicago, Boston, and Philadelphia—thanks in large measure to support from several national foundations—buildings that formerly housed large, dysfunctional tracked high schools with astronomically high failure rates now house several smaller schools or academies, each with a career or thematic focus. These small schools, typically serving 300 to 500 students, are deliberately designed to integrate academic and career preparation. They often are organized in partnership with one or more community-based organizations and almost always provide their students with internships or other forms of work or service-learning opportunities.

technology, arts, and media—each designed to serve a broad range of students, and each incorporating readings, problems, and examples drawn from its sector into the delivery of the core academic subjects. For a combination of reasons, including funding, implementation challenges, and political resistance from families focused only on university admissions, Oregon's career major program never got fully off the ground. This suggests that attempting to weave career preparation into the secondary education experience of all children, at least in the U.S. setting, may not be viable politically.

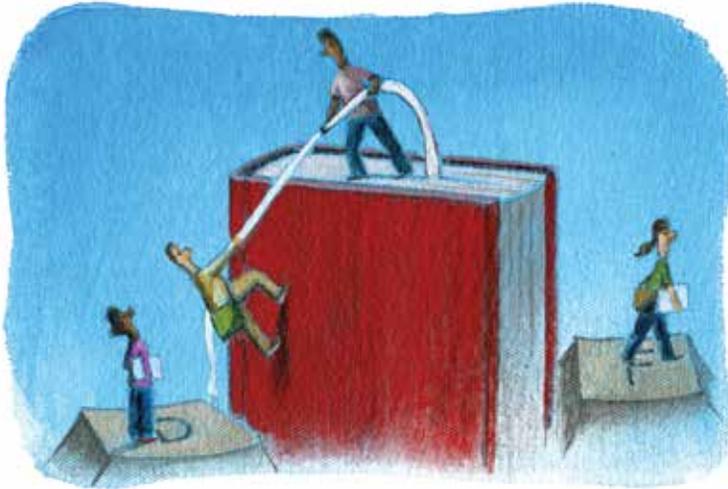
A middle-ground option that would not require schools to take on the political challenge of tampering with the academics-only university pathway is to build out a set of four-year career-focused pathways that would coexist alongside the academics-only pathway. Again, the NAF career academy provides a useful model. If all students other than those on the academics-only path could choose among a limited set of career academies (e.g., health, finance, information technology, engineering, tourism), all of which provided integrated career preparation and academics and genuinely prepared people for higher education as well as employment, this would not only ameliorate the concerns of parents wanting an academics-only program, but it would also reduce the anxieties of those who fear a return to tracking.

This is the strategy being pursued by an ambitious California program called Linked Learning. With funding from the James Irvine Foundation, Linked Learning is developing career academies in such major California industry sectors as building and environ-

mental design, biomedical and health sciences, and arts, media, and entertainment. Each academy is designed in such a way as to meet the academic course-taking requirements for admission to California's four-year universities as well as to provide advanced technical preparation in a career area.\*

The third option would be to follow the example of Northern Europe and move toward a system in which there is a sharper distinction between lower- and upper-secondary education. This would defer the choice of a career area until grade 10 (age 16), enabling schools to concentrate on ensuring that all students acquire a solid foundation of academic knowledge and skills, especially in reading, writing, and mathematics. This would not

largely to the Gates Foundation, we now have a national network of 270 "early college high schools" (ECHS),<sup>†</sup> serving approximately 80,000 students, mostly low income and minority. These schools all have formal relationships with a two- or four-year college or university. The idea behind early college is to accelerate the learning of these students by placing them in college-level courses so that by the time they graduate from high school, they have already accumulated at least one year of college credit. More than one-quarter of ECHS students are now graduating with a two-year associate's degree and nearly half with at least one year of college credit.<sup>10</sup> Although most of these schools are not explicitly career-focused, in many instances the college courses students take are in



The core premise of the Pathways Network is that all young people need to be prepared for careers and further learning.

preclude schools from using career interests and themes, and applied learning strategies, to deliver core academics in the lower-secondary grades, but it would allow for two more years of full-time academics.

In order for the United States to develop a version of vocational upper-secondary education at all comparable to the strongest European systems, we would have to link the last two years of high school with an additional year or two of postsecondary education or training, typically at a community college. This approach, while creating the significant logistical and funding challenges associated with programs that cross institutional boundaries, has one major advantage: U.S. employers are much more likely to be willing to participate in occupational certificate or degree programs organized by postsecondary institutions than those organized by high schools. In this option, one would begin by establishing an agreement between the postsecondary provider and an employer group, mapping backward from the certificate requirements in a particular field and then building a three- or four-year pathway starting in the 11th grade. Such a pathway would include paid internships and summer employment opportunities while students are in high school, with the appropriate sequence of academic and technical courses leading to a certificate or degree.

Programs that span secondary and postsecondary education are increasingly popular with families in the United States, partly because the costs of higher education continue to rise. Thanks

career and technical fields, and there is considerable interest within the ECHS network in creating more formal CTE pathways leading to occupational certification or a technical two-year degree.

### Building a Pathways Network

Despite the challenges inherent in the third option, this is the one that I and a set of colleagues at a Boston-based nonprofit, Jobs for the Future, decided to pursue in response to the extraordinary interest generated by the *Pathways to Prosperity* report. In 2012, we invited a small set of states to join us in forming the Pathways to Prosperity Network.\* The Pathways Network is designed to ensure that many more youth complete high school and attain a postsecondary credential with currency in the labor market. Each state is engaging educators and employers in building, for grades 9–12 on up through community college, a system of career pathways in such high-demand fields as information technology, healthcare, and advanced manufacturing. Such pathways are intended to launch young people into initial careers while leaving open the prospect of further education. In 2014, participating states include Arizona, California, Delaware, Georgia, Illinois, Massachusetts, Missouri, New York, Ohio, and Tennessee. Jobs  
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<sup>†</sup>For more about early college high schools, see "The Early College Challenge: Navigating Disadvantaged Students' Transition to College" in the Fall 2011 issue of *American Educator*, available at [www.aft.org/pdfs/americaneducator/fall2011/EarlyCollege.pdf](http://www.aft.org/pdfs/americaneducator/fall2011/EarlyCollege.pdf).

\*For more about the Pathways to Prosperity Network, see [www.jff.org/initiatives/pathways-prosperity-network](http://www.jff.org/initiatives/pathways-prosperity-network).

\*For more about the Linked Learning model, see [www.irvine.org/grantmaking/our-programs/youth/linked-learning](http://www.irvine.org/grantmaking/our-programs/youth/linked-learning).

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for the Future and the Harvard Graduate School of Education recently released *The Pathways to Prosperity Network: A State Progress Report, 2012–2014*, which documents the progress that states in the network have made in the last two years.

If the core premise underlying the old tracking system was that some young people needed to be prepared for college and others for careers, the core premise of the Pathways Network is that all young people need to be prepared both for careers and for further learning. Further learning need not necessarily take place in a higher education institution, but all young people will need the foundational skills and intellectual dispositions to acquire new knowledge and adapt to changing circumstances over a working lifetime. A narrow, occupationally focused education is unlikely to equip young people with those skills, which is why it is critical to ensure that all students leave school with a solid academic foundation.

I want to close by returning to the lessons the strongest European systems offer for us. For all of their differences, countries like Austria, Denmark, Finland, Germany, the Netherlands, and Switzerland teach us that it is possible to build secondary education systems on the premise that all young people need to be educated for a vocation or calling, that all vocations are worthy of serious preparation, and that the best preparation comes out of a well-organized, well-defined partnership among educators, employers, and employee associations. While some vocations require university preparation, most don't, but all require a mix of classroom-based and workplace-based learning. Unless and until we are prepared to invest in building rigorous, robust pathways across the occupational spectrum that can prepare all young people

for a life of satisfying work and further learning, and to give young people the academic support and information needed to make appropriate choices among pathways, we will never overcome the legacy of a two-tiered, heavily tracked education system that predictably replicates social and economic inequality from one generation to the next. □

#### Endnotes

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