

Accelerating Advancement in School and Work

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Current efforts to reform the American high school face a number of complex realities. Among the most significant are the far-reaching economic and demographic changes in the United States over the past several decades. The restructuring of the economy has made some education beyond high school the new prerequisite for middle-class jobs, raising the bar for what levels of skill all students must acquire. At the same time, demographic changes mean that the most rapidly growing segments of the student population—now and into the future—are those whom the education system serves least well.

High schools today must meet the dual challenge of preparing all students to function at higher levels and performing better for those least well served. Their task is not simply to help most students graduate with a minimal level of competence, but also to ensure that all students leave high school college-ready (that is, able to enter college without needing remediation). This is true both for students who will enter college immediately after high school and for those who will enter the work force but need ongoing education over time to advance economically.

The standards-based reform movement provides a strong foundation for meeting these challenges, especially because of its emphasis on setting higher and clearer expectations for what students need to know and be able to do. Although standards-based reforms have steadily raised achievement at the elementary and middle school levels, they have not yet succeeded in significantly improving outcomes for the increasingly heterogeneous students who stay in high school, let alone for the many who drop out before earning a diploma.

The problem is not just a failing of high schools but also of the secondary

education system in general, whose large, one-size-fits-all high schools and underfinanced second-chance programs are ill equipped to deal with the diverse circumstances of high school youth. The secondary education system has to serve, among others, ninth graders reading below the sixth-grade level and needing accelerated literacy acquisition, low-performing youth taking general track courses that do not prepare them for college or work, students whose primary language is not English, out-of-school youth needing a way to get into college and onto career paths, students who desire advanced technical education, students of all income groups ready for more advanced academic challenges, and average students trying simply to get by. Too many young people drift anonymously through this system—bored, alienated, and unsure of their future direction.

A one-size-fits-all institution designed for the twentieth century cannot serve the different needs of all young people well in a new era. Meeting the twenty-first century's challenges will require more than tinkering around the edges of high schools as they currently are configured. It will require a fundamental restructuring of the secondary school system, both within schools and between schools and the world around them.

Yet most current high school reform efforts remain narrow, working backward from high school graduation and focusing on the experience of students within the four walls of the school. State accountability measures encourage this narrow focus, stressing student performance on high school exit exams, while ignoring the equally important question of how well young people fare in their lives and in the labor market several years out from high school.

In *Transforming the American High School*, a 2001 report from Jobs for the Future and the Aspen Institute, former assistant secretary for elementary and secondary education Michael Cohen argues for a more radical approach.

The current education system, including high schools, provides students with a constant amount of time and a single approach for learning—and produces unacceptably large variations in student performance. The only way to get all students up to common, high performance standards is to flip this formulation on its head. We must provide students with multiple learning options and pathways and varied lengths of time to complete high school and gain the skills necessary to enter post-secondary education without remediation.¹

In many ways, this argument calls for a return to the original intent of standards-based reform efforts in the early 1990s, when leading advocates

saw higher standards and varied lengths of time in which to achieve them as part of an integrated reform agenda. The National Center for Education and the Economy's report *America's Choice*, for example, argued strongly for a competency-based system of multiple pathways in which time would be the variable and the achievement of a core set of academic and applied learning standards would be the constant.² Students would have the opportunity to move into apprenticeships, college-level classes, or other postsecondary options upon reaching a basic standard.

Yet these strands were separated as the reform efforts progressed. Defining standards and assessments in core academic disciplines became the dominant focus, and many now argue that state assessment and accountability systems are creating greater standardization of educational approaches. Efforts to achieve greater academic rigor through more relevant approaches to teaching and learning and to include work-based internships and apprenticeships as an alternative, high-status route to college and careers have evolved into a separate movement that includes Tech Prep, school-to-work, service learning, and similar initiatives. Varying the time and pathways to college and careers has proved to be the most difficult dimension to change.

The policy debate about high school reform needs to reengage these ideas. As one step in that direction, this paper has three purposes: first, to demonstrate why improving young people's transition to college and careers must be central to high school reform efforts, and how achieving this will require a fundamental restructuring of the secondary education system toward more deliberate variation in pedagogy, time, and institutional arrangements; second, to identify emerging strategies for such a restructuring; and third, to highlight the policy challenges involved in bringing such approaches to meaningful scale.

What this paper advocates must be read against a backdrop of discouraging research findings about the limited impact on high school performance of a variety of highly touted reform efforts, including recent experiments such as comprehensive school designs and charter schools. The proposals must also be seen in the context of resistance to the centralized standards and clearly articulated pathways that distinguish the secondary systems of the nations of Europe and Asia. There is no silver bullet. Yet the question remains: What is the best way to proceed in the American context—and what strategies worth trying have the best chance of succeeding?

Improving Transitions to Postsecondary Education and Work

Education beyond high school is critical to economic and individual success. The economy has changed. Most jobs require education beyond high school, and the skills required for jobs that can support a family are the same as those required for college.³ Among others, these skills include the ability to read at high levels, solve semistructured problems, communicate effectively orally and in writing, and work in diverse groups.

The economic returns from gaining a postsecondary education are clear. A college graduate earns 70 percent more than a high school graduate, and the growing income disparity in the United States relates closely to educational attainment. Even one year of postsecondary education increases lifetime earnings.⁴ Conversely, the unemployment rate for high school dropouts is four times the rate for college graduates.⁵ A person who enters the work force with little education will find it difficult, if not impossible, to catch up.

In effect, two years of postsecondary education has become the minimum that young people must achieve if they are to enter jobs that pay enough to form and sustain a family. While not all young people will or should enter college directly after high school, all will need some postsecondary education at some point if they are to progress in the labor market.

Despite the importance of some postsecondary education to labor market success, too few youth make it to or through college. While three-fourths of high school graduates now go to college, over half fail to complete a degree and one-third never see their sophomore year. This number does not include the unacceptably large, and growing, number of young people who drop out before graduating from high school—the 5.4 million out-of-school youth in America.

Urban areas face particularly urgent challenges. Close to half the schools in the thirty-five largest U.S. cities have weak promotion power (that is, the capacity to hold and promote students from ninth through twelfth grade). Nearly 50 percent of the students in these schools do not graduate in four years.⁶

Serious problems also exist with completion at the postsecondary level. Only half of those who enroll on a four-year campus receive a degree within six years.⁷ The numbers are worse at two-year colleges, where half of all young people enroll. Of students who entered public two-year postsecondary institutions in 1995–96, only 31 percent completed a certificate degree within three years of enrollment.⁸

College completion rates are especially problematic for low-income and minority youth. A young person whose family income is under \$25,000 has less than a 6 percent chance of earning a four-year college degree.⁹ This even pertains to those who are academically strong. A national study of the factors determining college success found that, while three-fourths of upper-income students who scored in the top 20 percent on a basic skills test earned four-year degrees, only 36 percent of low-income students who achieved the same high test scores earned a degree.¹⁰

The statistics are equally dismaying for young people of color. Nearly 29 percent of Hispanic youth and 12.6 percent of black youth age sixteen to twenty-four have dropped out of school, compared with 7.3 percent of whites.¹¹ The Education Trust reports that African American and Latino seventeen-year-olds read at the same level as white thirteen-year-olds. Marta Tienda's longitudinal study found that only 6 percent of youth from these groups complete a four-year college degree.¹² Part of the reason is that minority youth are substantially more likely to be enrolled in two-year post-secondary institutions. In 1991, 55 percent of Hispanics enrolled in higher education and 43 percent of blacks were in community colleges.¹³

A significant contributing factor to low college completion rates is the large numbers of freshmen entering college in need of remediation. In 1995, 29 percent of all college freshmen and more than 40 percent of those in colleges with high minority enrollment were required to take remedial courses in math, reading, or writing and, as a result, were more likely to leave college without completing a degree.¹⁴

Young people without strong skills or postsecondary credentials are struggling in the labor market. Large majorities of employers report that high school graduates are not well prepared for work in their companies. And young people face a tough struggle in the labor market. Andrew Sum and his colleagues report that "in 1998, nearly three out of ten families headed by a person under the age of 30 were poor or near poor, versus only 10 percent for those families with a head 30 or older." The recession of the early 2000s only exacerbated these difficulties, with young adults accounting for 95 percent of the net loss of employment in the country in 2000.¹⁵

Again, these problems are particularly acute for minority and low-income youth. One-fourth of young African American men and one-third of African American women age sixteen to twenty-three experience prolonged periods of disconnectedness in the labor market (that is, for twenty-six weeks out of any calendar year, they are not enrolled in school, not

employed, or not in the military, and they are not married to someone who is employed, in school, or in the military). In comparison, less than 10 percent of white youth experience a period of disconnectedness. Individuals who are disconnected are ten times more likely to be poor later in their lives as those who were never disconnected.¹⁶

The changing demographics create a strong imperative to do better. The United States is experiencing one of the biggest demographic shifts in its history, and much of the growth is in school-age population. By 2015, the traditional college population (eighteen to twenty-four years old) will increase by over four million. White youth are projected to remain the majority, growing by 800,000, or 4 percent, but minority youth are expected to grow by 3.5 million, or 40 percent. Hispanic youth alone will account for about half the coming boom in this age group.¹⁷ According to the Hudson Institute's *Workforce 2020* report, almost all of the net new labor market entrants over the next two decades will be children of color.¹⁸ If current education attainment levels persist, a large percentage of minority youth will not complete a postsecondary credential.

Taken together, these trends indicate a problem with youth transitions to postsecondary education and careers. At a time when high schools should be a pathway to opportunity for all students, they are routes to nowhere for many. Too many young people leave high school ill prepared for the demands of adulthood in an increasingly complex economy and spend their next decade drifting in and out of postsecondary education and low-end jobs.

Creating a Better Framework

Defining the goal for high school performance in terms of the numbers of students who pass high school exit exams, as most states and districts currently do, is far from sufficient if the broader problem of educating young people beyond high school is to be addressed effectively. What if the objectives were to double the numbers of young people who complete postsecondary education and to close the gap by income and race? How would a system designed to accomplish these objectives differ from the existing system?

Part of the answer lies in the structure of the education system itself:

strengthening the relationship between secondary and postsecondary education and reconfiguring the use of time within and between the two. One overarching principle to guide efforts to build a more effective secondary system should be to encourage multiple pathways to and through college. The objective should be to create a high-performing system of multiple pathways that presumes all students will learn to a set of commonly agreed upon high standards—but through different pedagogical approaches, by different institutional arrangements, and in different amounts of time. The system would create deliberate variability to attain greater consistency in the results. It would recognize the differences in student needs and encourage customized approaches to meeting them—using learning in and out of school to engage and motivate students. It would promote competency, not seat time, as the currency for academic progression.

Continued implementation of standards-based reform efforts is central to this objective. A system of multiple pathways without a common standard risks recreating or perpetuating the equity problems that plague the systems today. But, the work of building multiple pathways to college should not wait until the United States is closer to achieving a standards-based education system. A key short-term priority should be linking the multiple pathways that already exist much more tightly to college; that is, to the academic standards required for entry into credit-bearing, college-level courses in technical or academic subjects.

A second principle is to accelerate advancement through high school and the first two years of college, especially for young people who are poor and of color. At a minimum, this means ensuring that the transition happens better (fewer youth fall through the cracks and more enter and complete postsecondary education) and helping the progression happen faster (so that most young people have completed a first postsecondary credential by age twenty-six). Accomplishing this will require rethinking the use of time in the education system, with grades eleven and twelve and the first two years of postsecondary education being particularly fertile ground for change.

The transition of young Americans from high school to postsecondary education and work takes too long. Young people are stuck in an education system built on the assumption of seat time measured in Carnegie units—four years of high school leading to two or four years of college—which they presumably will complete sequentially, although increasingly they do not.

This is problematic for both low- and high-performing youth. For example, if a young person drops out before graduating from high school, she essentially loses access to some or all public funding for her education. If she reenrolls in an alternative school or a general equivalency diploma (GED) program, she often must do so at her own expense, at education centers that are desperately under-equipped compared with the public schools, and her progress is likely to be painfully slow. Worse still, the existing second-chance system does not act as a feeder into postsecondary institutions; the two are disconnected.

At the other end of the spectrum, the transition time is also too slow for students who are on track in school and can achieve high school exit-level competence in the tenth grade, the year when most states first administer the assessments that determine high school graduation. The senior year in the United States is largely wasted, with colleges essentially accepting students for admission on the basis of their junior year transcript and students typically completing most of their required coursework in their junior year.

Many questions remain to be answered if high school reform efforts are to incorporate the principles of multiple pathways and accelerated advancement, including: Will the standards movement, as currently being implemented, ensure the combination of choice and equity that must exist? How can the academic progress of students who start high school with low levels of literacy and math proficiency be accelerated? Can students remediate and accelerate at the same time? If a goal is to have students graduate from high school college-ready, what does that mean for the level of rigor and intellectual challenge their high school education must entail? If the system is to allow young people to move on to college or work after having demonstrated competency as early as the tenth grade (the level at which most state high school exit exams are set), what should the subsequent four years of schooling look like? Should grades nine to twelve and the first two years of postsecondary education, or eleven and twelve and the first two years of postsecondary education, be permanently collapsed? At what point should students be encouraged to choose specialization? Do changes in the economy mean that a universal system of fourteen years of public education should be instituted? What reconfiguration of time and routes would be necessary to finance such a system, given the cost constraints of state and federal budget deficits?

Toward Effective Schools or Learning Environments

Historically, the United States has dealt with the challenges of preparing high school youth for adulthood through a tracked education system: college prep, general track, and vocational education. The dominant trend over the past few decades has been to eliminate the general track and try to raise the academic quality of vocational education and college prep courses. In general, the results have been mixed.

In part because of the standards movement, emphasis on college prep has grown—increasingly defining the standard that all students must achieve. New York State’s recently imposed requirement that all students must take Regents exams to graduate from high school is an example of this.

Efforts to abolish the general track are progressing slowly but surely. Attempts to increase the academic rigor of vocational education are also progressing slowly, and they have produced uneven results to date. Much of traditional vocational education remains resistant to change, and the current emphasis on the academic disciplines severely constrains the time and resources available for vocational classes. In addition, changes in skill requirements mean that much specialized technical education now takes place at the postsecondary level, leaving unresolved the question of what vocational technical education at the secondary level should entail. Facing declining enrollments, many districts have cut back vocational course offerings and, as a consequence, a valuable option has been reduced.

The tendency now is to address the challenges of academic preparation and youth transitions through whole school change efforts, not tracks. High school reform efforts in this regard can be grouped into three strands. Some districts have embraced whole school reform to improve the performance of existing high schools (regardless of their size) through the implementation of standards-based curricula, upgrading the academic core, and so on. Others have reconfigured existing schools—often by breaking large high schools into smaller units and by developing specialized themes or focuses for each of these units. A good example of this kind of change are career academies—specialized houses or schools within bigger high schools that group students together for intensive academic and experiential preparation within broad career clusters. At the same time, many small, new high schools have been created by state charter legislation, citywide initiatives such as Boston’s Pilot School and Chicago’s Small Schools Initiative, and

foundation leveraging of public and private dollars such as New York City's New Century Schools Initiative. The schools are more costly in per pupil expenditure, but not necessarily in cost per graduate.¹⁹ Often all of these reforms can be found in the same district.

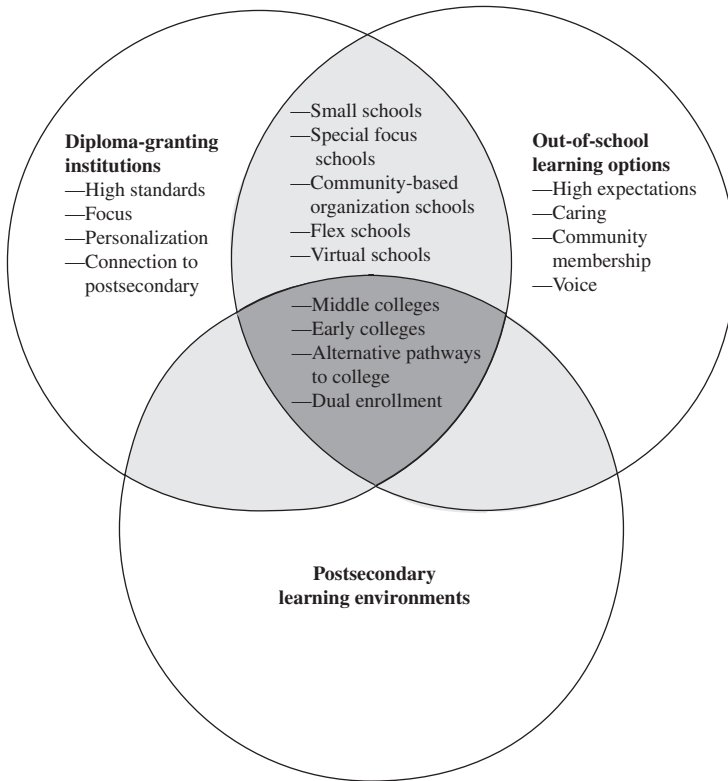
A fourth strand of reform deserves greater attention—a movement toward what might best be called blended institutions. These schools have moved further than most traditional high schools to create specialized approaches in response to particular needs of specific populations. They have embraced different pedagogies, instructional environments, and uses of time to help their students advance toward the completion of college credentials and positive life outcomes.

In discussing these effective learning environments, I draw on research I and my colleagues conducted since 2000 through the Jobs for the Future's From the Margins to the Mainstream Initiative.²⁰ The schools and programs we explore fall into three basic categories. Some are diploma-granting institutions, such as small or alternative schools. Others identify themselves as contributing to positive youth development and include a range of arts, internship, community development, and service learning programs that young people look to for sanctuary and challenge in their discretionary hours. A smaller group bridges grades eleven and twelve and the first two years of postsecondary education, offering college credits (and potentially a two-year degree or credential), usually in combination with a GED or high school diploma program (see figure 1).

These categories, however, are far from distinct. Many of the most promising are blended institutions that cross boundaries most high school reform discussions do not acknowledge—between secondary and postsecondary, between in-school and out-of-school time, and between school and work. While such models are far from the dominant breed of high school, they are important as high-quality options for some schools and for what they suggest about reforming the rest.

Multiple Pathway Learning Environments

In the schools profiled below, which have highly focused, rigorous learning environments, the young people are known well, engage in work that matters to them, and demonstrate their learning through performance and

Figure 1. Categories of Effective Learning Environments

competency-based assessments in addition to more traditional forms of assessment. Several key features about their design stand out—important not only because they contribute to the schools’ success in raising student achievement, but also because they are features that the current policy environment at the district and state levels does little to encourage. In fact, many argue that current policies and incentives do the opposite. In particular these schools offer high cognitive challenge through teaching that balances remediation and acceleration; creative use of time and learning outside of schools; more kinds of opportunities and supports for young people, especially in urban environments where youth lack access to the kinds of experience that middle-class children are more likely to receive as a matter of course; and improved linkages to postsecondary education.

These high schools, like many other urban high schools, work with students who enter ninth grade far behind in their literacy and math skills. Yet the schools handle students' need for remediation by giving them complex cognitive work to do at the same time as working to improve their basic skills. The Fenway High School in Boston, Massachusetts, is a good example. The Fenway achieves impressive results for urban students by combining a rigorous curriculum, learning outside of school, and relationships with adults.

Now in its nineteenth year, the Fenway sends 90 percent of its diverse student body to college, and its students excelled on the 2001 Massachusetts Comprehensive Assessment System (MCAS) tests. Eighty-eight percent of Fenway students passed the English portion, and 79 percent passed the math portion on their first try. These results exceeded the statewide average pass rates and were higher than any other urban high school in the state that accepts a broad range of students, including charter schools such as City on a Hill. In addition to exceeding all their urban peers, Fenway students as a group scored higher than many of those at suburban schools in the state.

One of Boston's pilot schools, the Fenway enjoys significant flexibility in its budgeting and staffing. It allows students to choose a theme-based learning family, which serves as their intellectual and personal home for four years, and provides an integrated curriculum, a strong advisory system, and extended learning opportunities in the community, including external panel reviews of student work. The Fenway provides rigorous intellectual work for its students, regardless of their starting point. For example, it requires all freshmen to take a humanities seminar built around essential questions such as, What does it mean to be human? In addition, all freshmen take a fundamentals of literacy course in which they build vocabulary and learn the strategies of good readers.

In contrast, the high school remediation efforts that many urban students usually encounter return to tried-and-true traditional approaches to teaching that ignore much of what the last several decades of cognitive research has shown about how development and learning occur. Traditional learning theory called for starting with basic skills and then moving to more complex ones. But cognitive science research has shown that learners become engaged by tackling cognitive challenges. Many high schools defer hands-on experience on principle (and out of concern about helping students pass state tests), moving to specialization after a foundation of general knowledge has been formed. Yet, for many young people, only the process of spe-

cializing, of going deeply into something, makes school relevant. This suggests a need for approaches that pursue both rigor and relevance—remediation and acceleration—at the same time.

The Fenway is not alone in demonstrating positive results from this strategy. Reformers are learning that part of the problem, particularly with youth who are seriously alienated from school, may be that they are underchallenged. The American Youth Policy Forum conducted an extensive review of programs that have succeeded in closing the achievement gap between races.²¹ Three of the most common characteristics of successful programs are that they provide students with small, personal learning communities; demand rigorous, high-quality work; and give students extensive supports. High Schools That Work, with its emphasis on providing career-bound students with an upgraded academic core, and Talent Development High School, with its emphasis on accelerated literacy acquisition provided through extended time during and after the school day for ninth graders, are considered successful programs.

Another good example is Advancement Via Individual Determination (AVID), which targets underachieving young people with grades of “C” or below for participation in Advanced Placement courses, providing them with study skills, tutoring support, and role models. AVID has grown from thirty-two students in one high school to more than sixty-five thousand students in more than twelve hundred schools in twenty-one states and fourteen foreign countries. Over 92 percent of its students enroll in college, a figure nearly one-third higher than national averages.

The Met, in Providence, Rhode Island, is designed to change the nature of the learning experience by utilizing many resources outside the school to foster students’ cognitive and personal development. Founded in 1996, the Met is small and personal, with two schools of 110 students each. The Met has one-third the dropout rate, one-third the absentee rate, and one-eighteenth the suspension rate of other Providence high schools. Of the first graduating classes, 85 percent went directly to college and 82 percent were still in college two years later.

The school has radically redesigned the use of time and resources to allow a highly individualized, learner-driven education. With input from their parents and a teacher-adviser, each student designs a personal learning plan, reviewed and revised quarterly, to plot progress toward the skills, knowledge, and personal qualities required for postsecondary success. Starting in the ninth grade, Met students spend two days per week at internships

that they select according to their interests. Internships are based on the premise that adolescents learn best when they are deeply engaged in real-world settings. The goal is to create motivated learners, not to prepare students for specific careers.

Students study fewer topics but in far more depth. They work closely with adults, instead of learning only with same-age peers. They do not take tests. They give public exhibitions of what they have learned, and they receive detailed narratives written by their teachers, not letter grades.

Despite the effectiveness of strategies such as these, the ways in which states and districts are implementing standards makes it difficult for many high schools to organize learning outside the classroom. Many districts and some states have increased course requirements in traditional academic disciplines. In most cities, few after-school or out-of-school learning experiences are available, and they are not well coordinated with school-based reforms. Although recent years have seen increasing recognition of the ways in which community resources can help strengthen learning and youth development during the school day and in the hours when young people are not in school, these efforts have been slow to grow, especially at the high school level.²²

Nevertheless, in a few places, public-private partnerships, such as the 21st Century Community Learning Centers, and citywide initiatives, such as the New York Beacons and Chicago Afterschool Matters, are bringing new resources into youth development initiatives. Accumulating evidence shows that participation in community-based youth programs promotes positive outcomes for all age groups.

Boston is organizing work-based learning experiences for young people on a large scale, through the efforts of the school district and the Boston Private Industry Council (PIC), which has played a leadership role in supporting a major restructuring of all fifteen comprehensive high schools in the city along school-to-career principles. The PIC has organized hundreds of employers, with the number of employer partners engaged in the most intensive partnerships, career pathways, rising from forty-six in 1995–96 to more than two hundred in 1999–2000.

Students participating in these school-to-career programs have structured work-based learning plans that allow for formal feedback on their progress toward broad performance competencies such as critical thinking and teamwork. Students' performance at the work site is linked to a database at the district so that the PIC and the Boston public schools can track the impact of

students' participation in school-to-career activities on their academic performance. The data suggest that students who participate in intensive school-to-career experiences have better attendance and college-going rates than their peers and that they do as well as or slightly better than non-school-to-career students on the state MCAS and district Stanford Achievement Test, Ninth Edition, assessments.

The Boston public schools and the PIC also jointly sponsor three summer programs that give students work experience and intensive academic coaching through internships at companies such as Verizon and the Federal Reserve Bank. These show significant success in engaging students, including those who are most at risk of not passing state standards, with an average learning gain in seven weeks of 1.2 grades. This is a promising way of organizing community resources outside the school to achieve more time for reaching standards and to provide urban youth with access to work experience and supportive adults.

The schools profiled here encourage a different kind of relationship between secondary and postsecondary institutions. The Fenway and the Met take direct responsibility for whether their students go to college and how they do there. The schools provide intensive support to their graduates at least through their first year in college and have jointly hired an evaluator to do a detailed, longitudinal analysis of how their graduates do once they leave. Washtenaw Technical Middle College (WTMC) and Portland Community College (PCC) go further—representing new kinds of institutions that blend high school and postsecondary education. Linkages between high school and postsecondary education are critical for the goals of multiple pathways and accelerated advancement, and these linkages have been growing over the past decade.

Washtenaw Technical Middle College, in Ann Arbor, Michigan, illustrates successful strategies for raising student achievement and accelerating their acquisition of postsecondary credentials. Housed at the campus of Washtenaw Community College, it is the only public secondary school in Michigan to be chartered through a community college as a result of the state's charter school legislation. WTMC has combined high school and college courses so that graduating students can earn a high school diploma and a certificate or an associate in arts (AA) degree simultaneously.

Once enrolled at WTMC, students move through five phases, from four high school core classes to credit-level Washtenaw Community College courses and career pathways. Students, who must have at least five high

school credits to enroll in WTMC, begin by taking core transition courses—English, math, science, and social studies. In addition, they enroll in Career Focus, a series of seminars developed by WTMC to help students meet the requirements for technical programs and credit courses offered at the community college in answer to the high failure rate (43 percent) of WTMC students in college courses during the school's first year of operation. An analysis of the failures revealed that students did not lack ability but needed specific skills and behaviors to make a successful transition to college-level courses.

The curriculum has brought results. WTMC students are now the best-performing group on campus. Their pass rate in college-level courses has improved to 80 percent.

Portland Community College, in Portland, Oregon, is another example of an institution that links secondary and postsecondary education in new ways. More than two thousand students enroll at PCC, making it the largest high school in Portland. PCC's multiple entry points allow students with as low as third-grade reading and math skills to enroll in noncredit and developmental (remedial) education courses that link directly to credit-based career education programs. Eighty percent of the out-of-school youth who enter PCC's high school completion program continue their education in the program, earn a diploma or a GED, return to a high school program, or obtain employment while simultaneously gaining college credits.

Attempts to strengthen the connections between secondary and postsecondary education also include significant work to align these two systems better at the state level. One of the most promising efforts is the P-16 movement, led by organizations such as the Education Trust and the Education Commission of the States and foundations such as the Pew Charitable Trusts. The assumption here is that aligning the practices of, and relationships among, educational institutions at various levels will expand the numbers, qualifications, and diversity of those who go on to college. Over a dozen states now have formal P-16 partnership efforts.

The experience in New York shows the potential impact on young people of increased alignment between high school and college. The state now requires all young people to take state Regents exams to qualify for a high school diploma and has eliminated all remedial programs at the four-year postsecondary level. Fueled in part by policy changes at the state level, New York City has built partnerships between district high schools and postsecondary institutions. For example, tens of thousands of students in New York

City are engaged in the College Now Program, a partnership between the public schools and the City University of New York (CUNY). The CUNY system gives its placement exams for credit-bearing courses to eleventh graders in schools participating in the program. Students who pass those exams can immediately enter a dual-enrollment program and start to take credit-bearing courses in any CUNY institution. As a result, they leave high school much further along, reducing the time and cost of a postsecondary degree. Eleventh graders who take those exams and fail know it at the beginning of eleventh grade and can immediately start taking remedial education courses. They can take those course not just in their high schools, which may not have very good resources and have not done very well by them but also in the CUNY system. All 17 CUNY campuses and all 161 high schools in the city are participating. College Now is reaching thirteen thousand students, of whom more than ten thousand are registered for dual-credit courses. College Now students accumulate credits more quickly, have better attendance rates, and outscore their peers on the state Regents exams.

Advanced Placement courses and dual enrollment are also strategies for helping students achieve postsecondary credentials. Increasing numbers of states and some districts enable students to enroll simultaneously in high school and college courses and to receive credit for both. Some are expanding Advanced Placement offerings. Such programs save money for families and reward students who meet performance standards. New York, Utah, and Washington have extensive postsecondary-option programs. For example, Utah's New Century scholarship program offers a 75 percent scholarship to a four-year state college or university to students who graduate from high school with an associate in arts degree.

High school students enrolled in Washington state's Running Start program do very well upon transfer to the state college and university system, and the state estimated a savings of \$36.9 million during the 1999–2000 school year, with students saving an additional \$13.6 million in tuition costs.

So far, data from dual-enrollment programs suggest two things. First, dual enrollment does not necessarily accelerate degree completion. Young people who can earn college credit while in high school still must make sense of a confusing array of courses at both the high school and college levels, and often the credits they earn do not transfer fully. Second, dual-enrollment programs appear to benefit primarily students from rigorous high schools and from middle- to upper-middle-class families. Yet acceler-

ated advancement may have the greatest economic and educational benefit for the students for whom it is least accessible.

In the spring of 2002, the Gates, Carnegie, Ford, and Kellogg Foundations announced a \$40+ million, five-year initiative designed to test that possibility. It will create seventy early college high schools—small high schools from which students leave with a diploma, a two-year associate in arts degree, or sufficient college credits to enter a four-year liberal arts program as a sophomore or junior. By changing the structure of the high school years and compressing the number of years to the AA, early college high schools have the potential to improve high school and college graduation rates and to prepare students better for entry into high-skill careers. At these schools, no transition will take place between high school and college. Students can earn an AA within the same small institution in which they do high school work.

More than most school start-up projects, these early college high schools cross into relatively unexplored territory: They are based on the notions that learning can be accelerated for adolescents and that high school and college—two separate and often incompatible learning environments—can be combined. While the schools face a challenging task, some experience exists on which to build. For example, Bard College has expanded from the success of its affiliated high school, Simon's Rock in Great Barrington, Massachusetts, to initiate an early college high school in New York City. The Bard Early College High School has restructured the four high school years and the traditional curriculum so that every student can graduate with a two-year associate in arts degree or enough college credits to enter a four-year, liberal arts program as a sophomore or junior. This school accepts highly motivated students, selected on the basis of their transcripts, writing samples, and interviews. It emphasizes advanced writing and thinking skills through a series of workshops and core seminars. With the assistance of the Woodrow Wilson National Fellowship Foundation, the Bard model is being expanded to create nine schools.

Another partner in this national project, the Middle College High School National Consortium, will start eight new early college high schools on community college campuses and redesign twelve existing middle colleges. Situated on community college campuses, the more than thirty middle colleges around the country target low-performing youth and offer, among other things, a combination of rigorous coursework, extensive supports and personalization, and internships in the community. Cece Cunningham, prin-

principal of LaGuardia Middle College High School, describes the “power of place” to raise student achievement and aspiration.

Based on the successful middle college model, the new early college high schools will have a maximum of one hundred students per grade and a teaching environment that stresses small learning communities and student-teacher interactions. Students will follow an accelerated path leading to a high school diploma and an AA degree in five years. The ninth- and tenth-grade years will entail high school courses, with intensive support in literacy and math; the eleventh- and twelfth-grade years will blend high school and college-level courses; and the next year will be solely college-level courses. Students will be taught by both high school and community college faculty.

Implications for Public Policy

Many barriers remain to moving from a smorgasbord of options to a system of multiple pathways to college held to a common standard of performance and available at a scale commensurate with the need. The schools highlighted here are fragile and experience failure as well as success. Too often, they operate at the margins of their systems and attract skepticism or even hostility from other schools and district leaders. Few school districts have either a strategy or effective mechanisms for learning from their innovative and promising experience. As a result, even the most successful schools often serve more to release pressure for broader systemic reform than to inform and help accelerate change. The strategies for which this paper argues are not prominent either in practice or in current debates about education policy.

At the community level, most schools are hampered in their ability to create better supports for young people and are burdened by a lack of financial resources, inefficient organizational structures, and poor communication channels with other institutions. It is rare to find academic, after-school, summer, and youth development programs aligned in ways that enable them to collaborate efficiently. Cognitively challenging and engaging projects offered by youth development programs, for example, are ignored in favor of more traditional forms of homework help in after-school hours. Little discussion is held about how learning outside the school building might count for high school credit. Postsecondary institutions and high schools also remain poorly connected. Often district and state policies fail to encourage

the continuity across schools, postsecondary institutions, and youth providers that would produce greater effectiveness and scale. Few states have implemented comprehensive strategies for encouraging multiple pathways through high school into college.²³

In light of these realities, any serious effort to build a system of diverse pathways to college and careers will have to address complex issues regarding standards, accountability, and governance if it is to achieve significant impact.

Standards, Assessment, and Credentialing Learning

Building a system of multiple pathways for high school students will require recalibrating views about standards and assessments. A pressing task is the need for closer alignment between high school exit requirements and exams and the entrance requirements to credit-bearing college courses of study and career jobs.

Unfortunately, most current state assessments have been designed to test student mastery of subject matter content in the high school academic disciplines. They are not aligned to college entrance and work requirements. The American Diploma Project—a collaboration between Achieve Inc., the Education Trust, the National Alliance for Business, and Fordham University, in partnership with the states of Indiana, Kentucky, Massachusetts, Nevada, and Texas—is beginning to take on this task. It is working to identify the literacy and math skills necessary for entry into credit-bearing college courses and work at high-performance workplaces.

Oregon was the first state to adopt competency-based certificates of initial mastery (CIM) and certificates of advanced mastery (CAM) as part of an overall comprehensive vision based on the 1990 National Center on Education and the Economy *America's Choice* report. That publication urged the development of a system in which young people were able to leave high school as early as grade ten, providing they had reached the CIM. Partly in response to this vision, the state university system moved to a competency-based admissions process, the Proficiency-Based Admissions Standards System (PASS), under which the state colleges and universities would admit students by their performance on assessments for the CIM and CAM. While adopting these new approaches, the state also kept its standard high school graduation requirements and the high school diploma in place, creating inevitable problems that the state is currently moving to address.

Another pressing task for states as they review and improve their standards and assessment systems is the need to develop more competency-based or performance-based assessments that can help move away from the construct of seat time. Effective assessments should be multiple and authentic, and they could allow significant flexibility in how performance is demonstrated in subjects other than literacy and math, including upgraded course requirements and end-of-course exams.

Credentialing will also need to reward learning inside school and out. The Minnesota Credits for Learning statute, for example, requires schools to offer students credit for work completed outside of school that demonstrably achieves state academic standards. Most states have a long way to go before their standards and assessments encourage project-based learning and other strategies proven to engage young people and to reflect real-world application of knowledge in the new basic skills.

Financing

By definition, the kinds of blended institutions that cross traditional boundaries between high school and postsecondary institutions, and between learning in school and out, raise complex issues about financing. Some of the blended schools profiled here have combined several different funding streams. For example, by serving youth and adults, Horizonte in Salt Lake City can draw on both district per pupil budgeting and the unusually high level of state dollars available for adult high school completion and English as a Second Language. As a dropout recovery and prevention program, the alternative pathway at Portland Community College gets average daily attendance money for its students. As students move into college coursework, they become eligible for Pell grants as well.

However, financing schools in this patchwork way consumes valuable time and energy on the part of school leaders. Some districts allow schools to have more control and flexibility in their budgets. Part of what the Fenway, for example, has been able to achieve stems from its status as a pilot school, part of a network of schools created in 1994 through the Boston teachers union contract to promote increased options within the school district. The pilot schools are public schools, not charters, but they differ from traditional Boston public schools in that they receive significant autonomy over budget, staffing, school day and school year calendar, curriculum, and governance.

Wisconsin and Minnesota have allowed state money to follow vulnerable youth through children-at-risk statutes that enable public school districts to contract with private, nonprofit, nonsectarian agencies to educate children who meet the statute's criteria for being at risk. Enacted in the mid-1980s, these statutes create a more stable funding stream for private, nonprofit agencies or community-based alternative schools. Districts with large numbers of dropouts and youth who meet the statute's criteria for being at risk are required to let students choose alternative education environments. Contracted providers are considered partnership schools under the Milwaukee public school system and receive per pupil funding at 80 percent of the average per pupil expenditure. In Milwaukee today, alternative education programs are responsible for 20 percent of the high school graduates. Similarly, about thirty community-based alternative schools operate within the Minneapolis public school system under this legislation, also reported to be responsible for 20 percent of high school graduates.²⁴

Despite unresolved controversies over vouchers, more experimentation must be encouraged with flexible funding at the high school level, particularly for those youth who have dropped out or who are trapped in consistently underperforming high schools. In addition to allowing money to follow students, public policy should provide incentives to encourage students to enroll in learning environments that have proven their effectiveness with young people, either because they incorporate productive design elements or because they demonstrate convincing evidence of success.

Ultimately, the implications for the financing and structure of a system of multiple pathways are much bigger.

As more students cross the boundaries between once completely separate systems, and as learning takes place more frequently in different institutional settings (e.g., workplaces, youth development organizations, on-line), often with different cost structures, states will need to reexamine how these various systems are financed and the nature of incentives being created for both students and for systems.²⁵

Curriculum and Teacher Capacity

An effective system of multiple pathways must address issues of curriculum and teacher capacity. The quality of teachers and the rigor and coherence of academic curriculum are among the few strategies consistently shown to work in raising the academic achievement of high school students.

The multiple pathways agenda brings some unique opportunities and challenges in this regard to improve curriculum and teaching.

On one hand, the kinds of blended institutions profiled here have the ability to draw on a much greater range of teachers than do traditional schools, from the college faculty associated with early college high schools to the community and business partners involved in expanding out-of-school learning opportunities. On the other hand, this approach to teaching will face many barriers to adoption, including resistance from teachers unions and fundamental changes in how schools of education function.

Accountability

Creating multiple pathways in the routes to college will require redefining state accountability measures (at both the secondary and postsecondary levels) accordingly. States should consider supplementing existing accountability measures (how students perform on state tests and high school graduation requirements) by looking at how well students do in their transitions to work and further education. How many students went on directly to college? How many of them needed remediation? How many returned after freshman year? How many have completed a postsecondary degree? How many graduates are employed? What are their wages?

In New York, New Visions for Public Schools is partnering with CUNY to commission the creation of a unified database that will collect information on remediation, course taking, and other measures of student success by school. Its goal is to get high schools to think about and feel responsible for the success of their graduates. Sixty percent of New York City high school graduates who pursue college do so at CUNY, and the same percentage of the teachers and school leaders in the city's public schools come from CUNY. Because most students attend publicly funded postsecondary institutions in their states, it would be possible to do a similar analysis elsewhere.

The larger issue of how accountability for institutions of postsecondary education gets defined matters greatly to the ideas proposed here. Few incentives currently are offered for postsecondary institutions to involve themselves with high school reform or to change their practices to succeed better at helping an increasingly diverse student population complete college degrees. As greater numbers of students expect access to college, state legislators are likely to exert more pressure on postsecondary institutions for improved performance.

A number of additional issues must be resolved if states are to move toward accountability measures that cross the boundaries between high school, college, and work. How can states hold these different systems mutually accountable? How can they determine adequate yearly progress when students may take courses offered by local colleges or online providers? Answering some of these questions will require states to collect longitudinal data on students. Many states have the technical ability to do this through tracking student records and unemployment insurance records, but only a handful (including Florida, Illinois, and Texas) have begun to do so.

Some would argue that in the U.S. market-based system, data can become a *de facto* standard; that is, if sufficient data about institutional performance are collected and reported over time, consumers' choice will be rationalized. There is no reason not to begin tracking longitudinal data about students in a much more concerted way. An additional priority should be developing systems that allow for data to cross state lines to track students who graduate from school in one state and are employed in a neighboring one.

Finally, the issue of accountability raises the challenge of the limits and extent of state responsibility for public education. Given the changes in the nature of economic opportunity, should public education be universal through the first several years of postsecondary education? Would such a shift be affordable without fundamentally reconfiguring the delivery system and the time and ways to earn degrees? States such as Georgia and Maryland have begun to consider this question.

Governance

The ideas put forward here also challenge the notions of governance. If states align high school exit requirements with the entry-level requirements for college work and career jobs, will they need an overarching board that aligns education from kindergarten through four years of postsecondary education? If districts encourage deliberate variation in the kinds of secondary options available to students, how should this system be governed?

Paul Hill and his colleagues argue for consideration of several new models for governance of school districts, including three that would be relevant to the multiple pathways agenda.²⁶ The first envisions a structure in which a strong chief executive officer manages a portfolio of distinctive schools, each of which has made a contract with the district around a particular school design and specific anticipated results. This structure would encour-

age multiple pathways. The second calls for a superintendent and school board to create a diverse system of public schools through contracts—the diverse providers model. These could include arts organizations, community organizations, other nonprofits, and so on. The third urges experimentation with community partnerships. In this model, the entire educational resources of the community would be available to the children: internships, service learning opportunities, museums, community-based organizations. A community education board, instead of a school board, would be responsible for mobilizing all community resources—in schools, community organizations, workplaces, the faith community, postsecondary institutions, and so on—on behalf of the children.

Conclusion

The past decade has seen explosive growth in diverse learning options for young people, including new schools, vouchers, charter laws, and distance learning and dual-enrollment options that are blurring the lines between secondary and postsecondary institutions. The ways in which students move across and between the institutions of work and learning differ dramatically from what the systems originally assumed. One could argue that the United States already is creating multiple pathways to adulthood for its adolescents. A system is lacking that ensures that this expansion of options is occurring in the best way possible if the long-term goal is equity and the improved performance of the system for all young people.

If the challenges of reform continue to be defined solely as a problem of improving the existing high schools, a major opportunity will be missed to reconfigure the secondary schooling system for the demands of the twenty-first century. The conversation must be expanded so that it is truly about what is next—the transition to college and careers.

Comment by Sheila E. Murray

A long-standing consensus exists that traditional comprehensive high schools no longer prepare students for the world that has changed around them. Policymakers and parents point to poor student performance on stan-

standardized exams and rising educational costs; employers are concerned that recent high school graduates do not have the skills to be productive in technologically advanced markets; recent high school graduates require remedial mathematics and English courses; and students regularly complain that school experiences are trivial, contrived, and meaningless. Despite the widespread agreement, research and efforts to reform high schools have been slowed by the view that reform should begin with children just entering the educational system because changes at the high school level come too late for struggling students.

Hilary Pennington recommends a restructuring of secondary and post-secondary education through a system of multiple pathways to college. In addition, she maintains that this restructuring must be accompanied by clear, uniform standards for all pathways that prepare young people well for college or careers and must build upon reform strategies such as personalization, relevance, and flexible time for graduation.

The strategies proposed in this paper are substantial; they require major changes in institutions and in behavior. The stakes, as Pennington suggests, are high. For many at-risk adolescents, high schools are a pathway to nowhere. Thus, it is important to look critically at the available research evidence and to take advantage of insights gleaned from other major reforms.

Rigorous Evaluations of Small-Scale Programs

The paper describes several reform experiments currently under way that have been successful in improving college matriculation for disadvantaged students. As informative as the successes have been, many reasons can be cited that a few innovative experiments are not a sound basis for transforming high schools. For example, multiple reform strategies are going on at the Fenway High School. Isolating which strategy works and which does not or why is difficult.

Education policies are often critiqued on the basis of the strength or weakness of the research behind them. Policies with high stakes must be based on rigorous research. This would suggest a more substantial research effort for reform, including independent, third-party evaluations using the most appropriate research design. The research for many of the strategies in this paper (for example, standards, personalization, relevance, and flexible time) is based on newly implemented policies (standards) or small-scale experiments (for example, small learning communities and flexible time).

The research on these programs is largely descriptive, as many of the reforms were adopted without an evaluation component that followed students well beyond high school graduation through college and into their early labor market experiences.

In addition, little of the research supporting these programs incorporates an evaluation of their cost-effectiveness. No indication is made of the costs associated with implementing these programs on a larger scale. Teacher shortages after the implementation of the California class-size reduction suggests that small-scale experiments can easily run into constraints when they are implemented quickly on a large scale.

Lessons from Other Major Reforms

Changes in the behavior and tasks in any organization are difficult. This is especially true as pathways to college and career are changed because of the many sectors of the economy that would be affected. Not only would curriculum, management, and financing of the high school change in Pennington's proposal, but the behavior and tasks of universities, employers, and federal, state, and local governments would as well. More important, the proposed changes would require parents and students to take additional risks with newly organized schools and degrees. This would require substantial buy-in from each participant and important safeguards for students.

As research on comprehensive reform suggests, buy-in is difficult to achieve. Many changes advocated by design teams in the New American Schools program, for example, met considerable resistance and were heavily dependent on support by districts and principals. More important, a high level of coherence was necessary. All participants needed to understand how changes in their tasks and behavior fit within the design of the reform.²⁷

Political buy-in at the state and local level is also important. The proposed reforms rely heavily on the willingness of states to target resources toward poor schools. Experience from over three decades of school finance reforms suggests that effort to redistribute education resources from wealthy to poor school districts met with considerable political opposition. For example, W. N. Evans, S. E. Murray, and R. M. Schwab find that school finance reforms that are initiated by legislatures have no effect on the disparity of resources between districts.²⁸ Instead, only redistribution at the behest of the courts is successful in reducing within-state inequality in total education spending.

As Marc Tucker points out, change in the system would require well-established structures that are “simple enough and stable enough to be understood and negotiated by everyone, everywhere.” This is particularly true for students and employers. The countries cited by Tucker have well-established skill standards and certificate programs. Because these are not in place in the United States, much of the risk for a nontraditional program will be borne by the students. This imposes a cost to the student and should be considered when comparing programs to the status quo.

Finally, the proposal suggests using standards to ensure that students are learning. Unfortunately, the experience with standards-based reform is relatively new, and much confusion and controversy surround the use of these standards. For example, to receive Title I resources the 1994 and 2001 amendments of the Elementary and Secondary Act require states to adopt content and performance standards, to align assessments to these standards, and to inform schools and districts. Compliance with these provisions in Title I schools alone has been slow.²⁹ In addition, content standards have not been uniform. In Kentucky, where the state legislature was required by the courts to provide an adequate education, curriculum changes to adhere with the content standards were voluntary and thus schools vary widely in their curriculum. Moreover, Kentucky and other states regularly revise their standards and assessment systems. Thus additional safeguards seem to be needed to ensure that students do not suffer from weak programs.

Conclusion

The proposals put forth by Pennington to restructure the U.S. system for secondary education are important new directions for policymakers, employers, educators, parents, and students. The movement to transform the American high school has been forwarded considerably by the positive examples Pennington cites. As these experiments are taken to the next level, serious discussions about transforming the high school experience are necessary because, as Pennington’s examples suggest, experiences in high school are not too late to help struggling students.

Comment by Marc Tucker

Hilary Pennington does a fine job of laying out the current state of high school reform in the United States from the perspective of the transition from school, on the one hand, to postsecondary education and careers, on the other.

She describes a fascinating collage of experiments, in which many kinds of distinctions start to blur. High schools offer college programs. Colleges offer high school programs. Academic and vocational goals are combined in the same programs and course. Programs are offered by some things that look like schools and others that do not. And so on.

This picture is both exciting and disturbing. It is exciting because it gives one the feeling that the wraps are at long last being taken off. A system that has patently failed is being challenged as it needs to be. People with interesting and appealing ideas for its rebirth and renewal are being given funds and scope to try out their plans and proposals. It is disturbing because what is most needed is a system and this rampant experimentation and the blurred boundaries could produce something that feels like bewildering chaos to its participants. By way of explaining what I mean by a system, I will provide a composite sketch of the way a number of other advanced industrialized nations organize education for the years in which U.S. students attend high school.

In those countries, all students take more or less the same curriculum for their first nine or ten years, set to the same standards, and then they go their own way. Until recently, those ways were typically very separate, but, in the last few years, that has been less and less true. Now students who have elected gymnasium (the route to university) for their upper secondary path are increasingly making a lateral move afterward to pick up a vocational credential. Similarly, governments are making it much easier for students who start in the upper secondary vocational curriculum to add enough demanding academic courses to qualify for university exams, formerly open only to gymnasium students. Some nations also are creating new paths to the university entrance exams that are just as demanding as the traditional gymnasium but composed of courses that in many cases are built around problems and projects.

These countries are responding to the same pressures the United States is—the drying up of low-skill jobs and the enormous resulting political

pressure to provide postsecondary education to virtually everyone—but they have some important advantages.

First, many of these countries have done a much better job than the United States has in the first nine or ten years of the education process. The effects are most visible in the bottom half of the distribution, where students typically achieve at far higher levels than the U.S. lower half. That means that they are better prepared for gymnasium and for a vocational education that requires serious intellectual effort.

Second, in most of these countries, a national school leaving exam serves also as a college (they would say university) entrance exam. There are very few private universities, so it is clear how well a student has to do to go to university, thereby providing a powerful motivation to achieve. In the United States, one can go to most institutions called colleges with no more than a high school diploma, the requirements for which are typically minimal.

Third, these countries have a much stronger tradition of vocational education, typically accompanied by a national system of occupational skills standards and strong employer participation. In most of northern Europe, students who do not meet the skills standards simply cannot get a job in their chosen occupation, so students planning to enter the work force after what the United States calls high school have strong incentives to take tough courses and work hard in school. Employers play multiple roles in the process of training students for their chosen occupations, assessing them against the standards and, in many other ways, easing the transition from school to work.

One other feature of these other systems is important to note. When students go from gymnasium or its equivalent to university, they are not entering the equivalent of the American college. They are entering professional school. These students have finished their general education (including the experience American students are supposed to get in the first two years of college) in gymnasium. Gymnasium typically begins in the tenth or eleventh year of schooling and lasts three years. Thus university typically begins in the thirteenth or fourteenth year, whereas, in the U.S. system, professional education can begin anywhere from the junior year of college to the first year of graduate school. From the standpoint of system efficiency, these other—mostly European—nations have managed to create a system that produces the same or better outcomes while saving the cost of one to three years of expensive university education.

Systems so constructed have many advantages. They are, among other things, (1) effective, in terms of producing a total population that is as highly skilled as that of any other nation and, no less important, able to learn quickly what it needs to learn to adjust quickly to changes of all kinds as they come; (2) flexible, in terms of enabling people to pursue enormously varied objectives and to change their minds along the way; and (3) admirably efficient, in terms of the total cost in time and money needed to produce a person with a given qualification.

Certain features of these systems are worth noting. They depend on having clearly demarcated parts of the system and on clear, universal standards that serve as gateways for moving from one part of the system to another—in particular from lower secondary education to upper secondary education, from upper secondary education to university, and from upper secondary vocational education into the labor market. The existence of these gates provides strong incentives for students at every level of the system to take tough courses and study hard, so they can reach their goals, which can only be won by doing exactly that.

Second, these systems invest heavily in assessment, which is typically done by having real people examine the extended work product of the students and comparing it with the standards.

Third, the countries that use systems of this sort are paying more and more attention to guidance, finding ways to help students understand their options and identify those that suit them.

Fourth, though these systems are dynamic, undergoing constant change, they are not an endless amorphous experiment. The governments that use such systems believe that it is important to have structures that guarantee similar opportunities for students throughout the whole nation, structures that are simple enough and stable enough to be understood and negotiated by everyone, everywhere.

The United States should not copy the system of any other nation and probably could not, even if it wanted to. But when you have fallen a long way behind the leaders, it is not out of order to take a look at the way that leaders get results before going off in another direction. No doubt, some Americans will take umbrage at the idea that the United States is not the leader, but the evidence is too overwhelming to ignore. The Third International Mathematics and Science Study studies showed not only that U.S. high school students are far behind the pack in general science and general math, but that they are even further behind in advanced math and science.

The more recent Program for International Assessment studies place the United States, at best, in the middle of the pack, far behind the leaders. American graduate schools are the best in the world, attracting students from every quarter of the globe, but as many as half of the lower division of U.S. college students would not qualify for admission to postsecondary educational institutions in much of the rest of the industrialized world. And no one I have ever met believes that the United States is competitive in vocational education.

So I would like to offer a modest proposal for an American adaptation of the international system I have described. It is intended to enable the United States to reach the goals related to quality, flexibility, and efficiency. The National Center on Education and the Economy, of which I am president, devised this schema to organize its America's Choice high school design, but the proposal could also be adopted by a state as the basis of its formal kindergarten through postsecondary education policy.

The first step would be to create a state standard for entrance into the bottom tier of the state higher education institutions: ready to take credit-bearing courses. In particular, and at a minimum, meeting this standard would certify that the person has the skills in reading, writing, and mathematics needed to do college-level work in those and other subjects. States would issue a certificate to students who meet this standard. The expectation would be that this standard would be met by the time a student was sixteen years old or at the end of the tenth grade. There are two reasons to do this. First, most other advanced nations expect their students to complete the common curriculum by this age, and there is no reason that it should take longer to do that in the United States than elsewhere. Second, if most students are expected to reach this goal by the end of their sophomore year, that will leave two or more years for students who have not reached that goal by the end of their sophomore year to do so before they have to leave high school. The aim, as Pennington noted in her paper, is to set a fixed standard, a standard that some students may take longer to reach than others.

The second step is to develop assessments adequate to make this determination. This is no small step. The only way to find out whether someone has the skills and knowledge to write an essay that meets the standard of college-level work is to ask that person to write such an essay and read it and critically evaluate it. This is so when it comes to the way students taking the Advanced Placement tests are assessed, tests that cost \$75 per student per subject to take, but not when it comes to the typical state assess-

ments at the tenth-grade level, on which much less is spent. Furthermore, virtually all experts on the subject agree that high-stakes systems of the sort that I refer to here should be based on multiple modes of assessment. The Cambridge University examination system includes not only end-of-course and end-of-sequence exams, but its scores are also based on teacher grades on teacher-assigned work that are checked by professional assessors. These tests do not cost as much as the Advanced Placement tests, but they are much more expensive than the typical state high-stakes tenth-grade test.

The third step is to create the tools, policies, and support systems that will enable U.S. high schools to get their students to the standard just described. This will entail identifying schools whose students are in danger of failing to meet this standard and requiring those schools to use a comprehensive school reform program that includes a standard curriculum and a soundly conceived program of technical assistance and professional development needed to implement that curriculum as well as all the associated safety net programs the students in those schools probably need.

By standard curriculum, I mean a single curriculum in which most of the courses are required and are designed to get the students to the standard. This means no general track, no vocational track, no career academies (that is, a program with a career education focus), and no distractions. It may mean the use of career themes or work-based learning for some students, not for the purpose of providing technical skills, but for the purpose of providing a motivation to continue their academic studies. These programs may employ a traditional pedagogy or a highly innovative one, but they exist for one purpose only—to get their students to the certificate standard just mentioned.

Notwithstanding the success stories in Pennington's paper, experience teaches that getting virtually all U.S. high school sophomores to this standard will take a Herculean effort. Astonishingly little research has been done in the last fifty years on the problems of low-performing high school students and even less on developing curriculum for them that works. The nation needs to greatly increase the effort it is making on this front to get results on the scale needed.

The next step is to carefully define in policy the options that are available to students who reach the new certificate standard. Those at the National Center on Education and the Economy who have been working on this problem over the last twelve years are convinced that qualifying students should then begin some form of college. If the standard that a student has

met qualifies him or her for college-level work, then why not send that student to college?

But, as Pennington's paper points out, students need not leave high school to embark on college, though they should have that option. Students who get their certificate and want to pursue a program leading to a two-year technical degree or certificate ought to leave the high school and go straight to a community or technical college offering such a program. Everything from programs in welding and auto mechanics to programs in software systems management, hotel and restaurant management, cardiovascular technology and technical, graphics and design fall into this category. Few high schools in the United States can afford the equipment (which has to be constantly updated) and the faculty needed for such programs. The institutions that should have these programs are the community and technical colleges and that is where students who want to pursue such programs should be sent.

States that elect to go down the path I am suggesting may turn around, however, to discover that their community colleges (many states do not have separate systems of technical colleges) are jettisoning their technical programs in favor of their general education programs, which are cheaper to operate, do not require that students have strong reading, writing, and math skills (though they should), and lead to a more prestigious position on the academic pecking order. The implication is that many states may have to strengthen the capacity of their community colleges to offer strong two-year technical programs to make this aspect of this proposal work.

What is missing and badly needed in the community and technical college system are national standards for the technical occupations and assessments to gauge when those standards have been met. The National Skill Standards Board, chartered to develop such a system, apparently will not do so before it sunsets. Some states are working on them, but state standards are no substitute for a national system. Absent these standards, the colleges set their own standards, which vary widely, producing a situation in which employers do not know what degree and certificate holders can do and degree and certificate holders have a hard time marketing themselves to employers for the same reason. Standards are the key to a successful school to work transition in all the nations in which such standards are in use.

But what about the students who do not choose to leave their high school to pursue a technical program at the local community or technical college? How many options these students have and the nature of the options will

depend on the size and location of the school and the preferences of the community, but the common feature would be that all of the options would represent some form of going to college in high school. Among the examples of such programs would be the International Baccalaureate (IB) program. It was conceived as the embodiment of a European gymnasium program set to a high European standard. Even the most selective of American selective colleges admit IB diploma holders as college sophomores. Another alternative would be a demanding program that is based on the admission requirements of the highest level of the state university system and that includes a substantial number of Advanced Placement courses, another way to enter college with a head start. A third option would be a program set to a high academic standard but employing a pedagogy heavily based on problems and projects. The National Center on Education and the Economy will be working on the development of such a curriculum over the next few years. Other options are described in Pennington's paper. Some high schools may be able to offer only one such option. Others might be able to offer many. Most options will take advantage of the faculty resident in the school, but others might be virtual, available from the World Wide Web.

All of these programs will terminate in examinations, too. Some are designed as an integral part of the upper secondary program the student is participating in. Others will be given by the institutions the student intends to attend next. But the states could contribute greatly to a smooth transition if they developed assessments for the purpose of establishing standards for transferring into the sophomore or junior year of the state university system. Then all high schools would make sure that their students were prepared for those examinations and assessments, as a minimum standard for the end of the upper secondary programs. These standards would apply to students who took their upper secondary program in community or technical colleges as well as those who took their program in the high schools, and so all students would be on an equal footing, no matter what path they had chosen. Individual postsecondary institutions and individual programs within those institutions could impose additional requirements, but the core performance requirements in the public institutions would be known by everyone and common across the board.

Students electing to stay in a high school to participate in its upper division program would experience a different social environment than was the case in their lower division program. It would feel more like college, less like the traditional high school, with more responsibility and fewer restric-

tions—more grown up. The high school will have to do this just to compete with the community and technical colleges, but it should want to anyway.

Two quick points need to be made on finance. First, Great Britain has found a way to deal with the problem to which Pennington referred regarding the dropout statistics in higher education. Great Britain gives its further education colleges (similar to U.S. community colleges) a sign-up fee when a student matriculates and a certain amount in each year thereafter, but most of the compensation does not come to the college until the student has received his or her degree. There is much more mobility among college students in the United States than in Great Britain, but it would be possible and useful to adapt the British system to the United States by deferring some of the compensation to the postsecondary institutions the student attends until a degree is awarded, whether the student attends only one such institution or several.

Second, many American community colleges are giving up offering technical programs because they are more expensive than academic ones. The Danes have solved this problem by funding their institutions based on the full-time equivalent students in their programs, but the amount given each student varies, depending on the expense of offering the particular program in which that student is enrolled. This is made easier by the fact that the Danes have a national skill standards system that defines their vocational program offerings nationwide.

Much of what I have described was foreshadowed in Pennington's paper. On a few minor matters, I have chosen to argue, at least by implication, with some of the propositions offered, but, in the main, my aim has been to tease out the structural implications and give form to the kind of system that might emerge from the trends that Pennington described. At the same time, I have cautioned against too much enthusiasm for an age of experimentation that fails to provide the people who will use the U.S. school system enough structure to get what they want and need from it.

Notes

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20. From the Margins to the Mainstream Initiative is supported by grants from the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, the W. K. Kellogg Foundation, the Charles Stewart Mott Foundation, and Atlantic Philanthropies. At a critical moment in the growing movement to improve high schools, this multi-year initiative looks for solutions and strategies outside of the one-size-fits-all traditional high school. The project seeks practical answers to the question of how school systems can take advantage of breakthrough possibilities offered by emerging, powerful learning environments inside and outside of the school building, school day, and school year. Jobs for the Future will publish the results of the research and analysis in more depth in a white paper and in other materials being prepared by project director Adria Steinberg and other Jobs for the Future staff members.

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