

COMMENTARY

Linking Learning and Earning

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The disconnection between many inner-city youths and employment is symptomatic of a more fundamental disconnection between the nation's education system and its employment system. Educational reformers have begun to promote schools that use the workplace as a learning context. The next challenge is to envision workplaces that are contextualized by schools.

Among the prerequisites to economic development for a neighborhood, region, or nation, none is more fundamental than its human resources—the size, skills, and organization of its workforce. And for no other subject has the search for effective public policies proved more elusive.

Reform of the United States' system of elementary and secondary education is a case in point. In the 1990s, there is widespread consensus that the nation's elementary and secondary schools fail to provide many of the nation's youth—its largest group of new labor market entrants—with appropriate prerequisites to employment. That failure deprives employers of a productive workforce and leaves workers struggling to earn wages that can support themselves and a family.¹

Alarm about this condition has been sounded most continuously in connection with minority and immigrant youths educated in distressed inner-city neighborhoods. For example, a recent study of the District of Columbia's public schools lamented high school dropout rates exceeding 50%, scores on the Comprehensive Test of Basic Skills averaging 36% below national norms, fewer than half of graduates in vocational fields (such as cosmetology) passing licensing examinations, and fewer than 70% of student interns rated by work supervisors as meeting their company's minimum hiring standards. In these circumstances, it is hardly surprising that, six months after graduation, 63% of the city's high school graduates were unemployed.²

Parallel concern about workforce preparation increasingly extends to non-college-bound students from more affluent communities. In 1988, the Commission on the Skills of the American Workforce drew attention to the mismatch between the college-preparatory emphasis in the nation's high schools and the reality that half of high school graduates do not enroll in postsecondary education.³ The theme was amplified by the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS), which found much of the nation's workforce inadequately prepared in literacy and numeracy; personal qualities such as honesty and responsibility; and workplace competencies such as the ability to work in teams, budget resources, seek information, and solve unstructured problems.⁴ Assessing the implications of these patterns in a world of rapid technological change and intense international competition, the Committee for Economic Development concluded

The new economy is generally good news for workers who have education beyond high school and preparation for careers in managerial, professional, and technical occupations. In most cases, opportunities and rewards for these workers will be enhanced by working

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with new technologies and taking advantage of training on the job. . . . In addition, such skills tend to be transferable among workplaces. But those who are ill-prepared for the new workplace are finding a very unwelcoming job market. . . . The first rungs on job ladders are moving beyond the reach of the least prepared. This tends to leave only dead-end entry-level jobs for the least skilled. . . . Increased skill requirements . . . threaten to drive a widening economic wedge between skilled and unskilled Americans.⁵

THE WORK-CONTEXTUALIZED SCHOOL

What can close the gap between the preparation that schools provide the majority of American workers and the preparation that makes those workers productive and economically secure?

One approach to school reform focuses on improving the efficiency with which schools produce educational services. In this spirit, reformers call for teachers who are better trained, principals who are stronger leaders, curricula less diluted by peripheral subjects, longer school days and years, more pre-school development of educational readiness, increased use of educational technology, and greater competition through school choice.⁶ Such recommendations emphasize improvements in the management of schools. Cloaked in different language—"invest in the skills of front-line workers," "empower middle managers," "focus on core product lines," "vertically integrate," "harness information technology," "deregulate industries"—similar recommendations can be found in any issue of *Fortune* or *Inc.* applied to retailers, service firms, or manufacturers.

If implemented, many of these recommendations would no doubt improve the efficiency of schools. But managerial improvements alone leave key pedagogical issues largely unaddressed. Under the banner of *contextualized education*, a different approach to school reform challenges educators to reexamine their fundamental style of teaching and learning.⁷

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One motivation for this approach is the distressing reality that contemporary schools fail to engage the interest and energy of large numbers of students, who either drop out before completing high school or sleepwalk through their school years to graduate having absorbed little. Contextualized education recognizes that unmotivated students will not learn, gives priority to capturing their attention, and provides an omnipresent answer to their recurrent question: "Why bother to learn this?"

A second goal of contextualized learning is to enable a broad range of students to grasp advanced academic material. Standard modes of academic presentation—such as lectures on abstract concepts—effectively communicate to only a minority of students. Belatedly endorsing principles that excellent teachers have long intuited, cognitive science now concludes that most persons grasp concepts inductively via examples and hands-on manipulation that adapt to individual learning styles.⁸ When properly implemented, contextual learning enables essentially all students to achieve levels of learning traditionally thought feasible for only the "college bound."

A final advantage of contextualized learning is that it develops habits and skills valued in the workplace. The typical style of teaching and learning in today's elementary and secondary classrooms contrasts starkly with the style of production that students experience when they become employees. The former often features rote memory, teachers treated as authorities, students competing rather than cooperating, and problems that have simple answers; the latter increasingly emphasizes skills in seeking out information, supervisors as coaches, employees working in teams, and complex, unstructured problems. Contextualized education avoids giving students 12 years of work habits antithetical to those they will need after graduation.

For models of contextualized learning, proponents point to an element of education currently in bad repute: vocational education.⁹ In recent decades, "shop classes" have often served as a dumping ground for students labeled ineducable or unruly. Yet in other times and places, their workplace-oriented, hands-on style of instruction produced students both skilled and smart. Reformers call for merging the *learning style* of vocational education with the *content* of academic education. And they advocate this merger not just for students on a "vocational track," but for the college bound and noncollege bound alike.

A DAY AT CENTRAL HIGH SCHOOL

Under such an approach, what would student Ellen Smith encounter as she steps off the school bus at Central High School in 2006? How does her school day differ from that of her sister Helen, who studied at Central in 1996?¹⁰

Helen thought of herself as attending Central High School with 1,600 other students. When Ellen walks through the front door of Central, she enters a house called Health Care, with an enrollment of 400 and a team of teachers and administrators separate from those serving three other houses at the school. All of Ellen's classes except physical education will be in her house.

Helen was considered "not college material" and placed on a vocational track. Her class schedule was filled with "practical math," "basic English," cosmetology, and choir. For Ellen and her fellow students, there are no separate academic and vocational tracks. Regardless of her postgraduation plans, Ellen is enrolled in "solid" subjects such as algebra, advanced composition, and chemistry. Her teachers know that the skills she learns in these classes are applicable in either further schooling or employment. And these teachers constantly remind Ellen of the range of her postgraduation options, including enrolling immediately at a four-year college, enrolling at a community college or vocational school, or working first and going to school later. Unlike Helen, Ellen is encouraged not to consider college a once-in-a-lifetime decision.

Although she never studied grammar extensively or learned to write well, Helen's first-period class was titled "English." Ellen's first-period class is labeled "The Health Care Industry," and today's activity involves writing a paper on health insurance. Ellen and her work team have completed a first draft, and this morning their teacher will provide rigorous instruction in grammar, punctuation, spelling, and writing style by reviewing that draft with them.

In her classes, Helen often took notes as the teacher lectured. On tests, she wrote short answers that were graded right or wrong, and she strove to earn a higher grade than her fellow students. Ellen spends much of her day working in groups, among them the team producing the paper on health insurance. Her teachers seldom lecture but instead move around the classroom, coaching and supporting a work process in which students are responsible for structuring their projects, planning their tasks, and assisting the work of their peers.

When Helen was in school, a bell after 50 minutes marked the end of English and sent her down the hall to math. As 50 minutes pass, Ellen's class on the health care industry continues, but the focus shifts to calculating the costs of health insurance. The English teacher moves to another group and is replaced by the teaching team's math specialist. Quadratic equations are useful in these calculations, and they are the lesson of the day.

To document her educational achievements, Helen received a report card four times a year. Ellen gets report cards, too, which have added importance now that employers ask about job applicants' grades when hiring. In addition, her permanent file contains a checklist, based on SCANS, of her proficiency on several dozen work relevant skills. And throughout her high school years, she has been accumulating a portfolio of work products—the report on health insurance will eventually be in this portfolio—demonstrating her performance.

When Helen was in school, the only adults she saw during the school day were teachers and school administrators. Field trips occurred seldom, and always to museums, plays, or other "educational" locations. For Ellen, field trips to work sites are common; either off campus or on, hardly a day goes by without an encounter with someone from the world of work—a guest speaker, a supervisor on a work internship, or an employer brought in to conduct mock job interviews or to judge student projects.

After school, Helen earned spending money through a job at McDonald's. Ellen works part-time at the same burger joint, but now her supervisor sends a quarterly report to Central High documenting what experiences she has acquired and what skills she needs to improve.

As a student, Helen gave little thought to what she would do after graduating from Central. Once a year, she met with a guidance counselor, but the counselor knew little about careers. "Maybe I'll be a secretary like my aunt" was the closest Helen came to a plan, but she had seldom visited a business office and knew little about what the job required. In contrast, Ellen has a one-page statement of her career plans and how her education relates to it, which she first prepared in her

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middle-school class on occupational exploration. At that time, inspired by a day spent "job shadowing" a veterinarian, she planned to be a vet. She has changed her mind several times since then, of course (currently she is thinking about becoming a registered nurse), so her plan has been updated annually. When she last met with her counselor for that update, the counselor presented her with information on nursing that the counselor had acquired last summer while interning at a local hospital.

Such methods of weaving a seamless web between the workplace and schools are gradually moving from exotic experiments to accepted educational practice. Two milestones in this process are the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 and the School-to-Work Opportunities Act of 1994, which support

- Integration of academic and vocational education;
- High school "academies," "schools within a school," and "career majors" centered on industries;
- Exposure of students to the world of work through guest speakers, field visits, and job shadowing;
- Classroom activities designed to develop workplace competencies;
- Career awareness and career exploration throughout the elementary and middle-school years;
- Worksite-based learning through internships, cooperative education, and apprenticeships;
- Use of students' summer and part-time jobs as venues for learning;
- Exposure of teachers, counselors, and school administrators to the world of work through site visits and work internships;
- Coordination of coursework between high schools and postsecondary schools through "tech prep" and "2 + 2" programs.

THE SCHOOL-CONTEXTUALIZED WORKPLACE

The work-contextualized school holds great promise for improving American elementary and secondary education. However, its full benefits will be realized only when changes in the workplace complement those in the classroom. To date, the pace of change by employers is slower than that on the educational side of the partnership, in part because the vision of the future is less clear. To complement our growing understanding of how the workplace can contextualize schools, we need to envision how schools can contextualize the workplace.

One example involves the process of hiring entry-level workers. Most employers do not routinely consider the information that high schools can provide. In particular, employers seldom request high school transcripts documenting courses taken, grades achieved, conduct, and attendance. That practice hampers the educational process because it offers non-college-bound students little incentive to elect difficult courses and master the material taught. At the same time, it limits employers' ability to identify job applicants with greater skills and greater facility in acquiring skills.

Employers can change their hiring practices to treat the school performance of job applicants more seriously. In the short run, transcripts and teacher recommendations are the principal relevant sources of information. In the longer run, employers can encourage schools to provide additional information through certificates of mastery of competencies and portfolios of student projects.¹¹

Employers can also reflect school performance in setting the wages of entry-level workers. Students are constantly told that "education pays," and that maxim proves true in the long run and for major differences in educational credentials. For example, on average, college graduates earn substantially more over their working lives than counterpart high school graduates. However, the early experiences of many entry-level workers contradict the maxim. Major earnings differences between high school dropouts and high school graduates, and between students who studied advanced subjects and those who merely skimmed by, do not appear for many entry-level workers until their mid-20s.¹²

Such a pattern is to be expected if the initial skill requirements of many entry-level jobs are limited and wages are based only on current productivity. However, many young workers have short time horizons; short-term signals are crucial in keeping them on a career-productive track. Wages that do not reflect workers' qualifications for future productivity dampen incentives for educational effort, and they hamper a firm's retention of employees with greater long-run potential. Employers can alter their compensation policies to differentiate among entry-level workers with the same current duties but different future potential.

To be most effective, these wage differences should be based on specific skills rather than broad credentials such as high school diplomas. However, skills should not be valued narrowly. The goal is to create short-run payoffs for productivity differences that manifest themselves primarily in the long run. Academic fundamentals, which provide the basis for flexibility and acquisition of future skills, should be more highly rewarded than skills that rapidly obsolesce. For example, mastery of algebra should command a greater wage differential than knowledge of a currently popular computer program.

Employers can also extend rewards for skills to decisions concerning employee advancement. Many workplaces today, in effect, divide employees into castes based on their precareer education. Employees who acquire degrees while they work often experience little evolution in their duties as their classes enhance their capabilities; and when their degrees are complete, they often face resistance when trying to break into professional ranks. Such treatment contradicts the reality that lifelong learning—more persons attending school while working, more employees undergoing retraining to combat obsolescence—is increasingly the norm.¹³ When employers tie advancement opportunities less to employees' histories and more to current skills, workers have more incentive to use schooling to acquire and maintain the competencies that productivity increasingly requires.

There are well-established terms, of course, for moving employees upward as their skills grow: career paths and job ladders. In the 1990s, there are few well-compensated career positions for which high school graduation represents sufficient preparation and age 18 represents sufficient maturity. Accordingly, for these positions, many employers hire persons in their early or mid-20s, after further education and short-term, minimum wage work for other employers have given them skills, work experience, and time to settle down.

This separation of initial work experience from career employment does not harm most entry-level workers, especially middle-class youth with access to full-time higher education and networks of contacts for eventual job placement. For many persons with little prior exposure to the world of work, short-term, minimum wage employment—the proverbial jobs flipping hamburgers—provides valuable initial work orientation and personal maturity, even if the jobs themselves offer no opportunities to advance.

But some younger workers never make the transition from these initial dead-end positions to well-compensated, career-oriented employment; others make the transition only after a prolonged period of turbulence. According to one estimate, more than 35% of male high school graduates have failed to find stable employment even by their early 30s.¹⁴ For these entry-level workers, linking early job experience directly to career positions would substantially increase their career opportunities. The process of maturing is speeded by raising the stakes in workers' performance on these initial jobs. At the same time, employers would be more willing to increase the skill development content of entry-level positions if workers were likely to remain with them for an extended period of time.

To achieve these benefits, entry-level employment can be restructured to allow entry into career paths at age 18 rather than 25. A number of firms employing young workers have redesigned entry-level positions to link them to long-term employment and upward mobility—among them, Colonial Parking, Kentucky Fried Chicken, McDonald's, Peoples Bank, Service-Star, ServiceMaster, Wal-Mart, and Wegman's Supermarkets.¹⁵ Other employers have considered more formal arrangements, such as apprenticeships on the German model, which combine continuing school with work for youths emerging from high school.¹⁶

To motivate employers to implement the school-contextualized workplace, it is not necessary to appeal to their sense of social responsibility. If restructured personnel practices, in combination with reformed schools, produce more capable employees, jobs need not be "dumbed down,"

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shortages of skilled workers can be avoided, and employers can obtain higher returns on their investments in technology and equipment. Thus employers can enhance their production efficiency, competitiveness, and profitability.

EDUCATION'S IMPLICIT PARTNER

When educators speak of the business community's participation in school reform, they usually envision employers providing political support—lobbying legislatures and school boards for more money or higher educational standards. Or they have in mind contributions by firms that directly support the operation of schools—donated computers, guest speakers, site visits, volunteer tutors, or “adopt-a-school” relationships.

Such participation is obviously valuable—indeed, essential—in work-contextualized schools.¹⁷ But for educational reform to succeed, another form of cooperation is even more important. This cooperation occurs in the workplace rather than in school buildings, and is not labeled education reform. It is the redesign of personnel practices and production processes referred to in this article as the school-contextualized workplace. Such changes reflect employers' willingness to treat schools seriously, and they ratify schools' efforts to produce a different student product. In the long run, these implicit partnerships will represent employers' most important contributions to school reform, and thus one of their most important contributions to the economic development of neighborhoods, regions, and nations.

NOTES

1. Commission on the Skills of the American Workforce, *America's Choice: High Skills or Low Wages?* (Rochester, NY: National Center on Education and the Economy, 1990).

2. Commission on Vocational Education and Career Opportunities, *Linking Learning with Earning* (Washington, DC: District of Columbia Public Schools, 1992), p. 5. See also Gordon Berlin and Andrew Sum, *Toward a More Perfect Union: Basic Skills, Poor Families, and Our Economic Future* (New York: The Ford Foundation, 1988).

Of course, such unemployment reflects more than job seekers' lack of marketable skills. Other important factors are racial discrimination by employers, spatial separation between inner-city job seekers and suburban job opportunities, and lack of job information and contacts; see Harry Holzer, “Black Unemployment Problems: New Evidence, Old Questions,” *Journal of Policy Analysis and Management* 13 (1994): 699-722; and Marc Bendick, Jr., Charles Jackson, and Victor Reinoso, “Measuring Employment Discrimination through Controlled Experiments,” *Review of Black Political Economy* 23 (1994): 25-48.

3. The William T. Grant Commission on Work, Family, and Citizenship, *The Forgotten Half: Pathways to Success for America's Youth and Young Families* (Washington, DC: Youth and America's Future, 1988); see also National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform* (Washington, DC: U.S. Government Printing Office, 1983).

4. Secretary's Commission on Achieving Necessary Skills, *Learning a Living: A Blueprint for High Performance* (Washington, DC: U.S. Department of Labor, 1992). See also A. P. Carnevale, L. Gainer, and A. Meltzer, *Workplace Basics: The Skills Employers Want* (San Francisco: Jossey-Bass, 1989).

5. *American Workers and Economic Change* (New York: Committee for Economic Development, 1996), pp. 10-11.

6. See, for example, the influential series of studies by the Committee for Economic Development, *Investing in Our Children: Business and the Public Schools* (New York: Committee for Economic Development, 1985); *Children in Need: Investment Strategies for the Educationally Disadvantaged* (New York: Committee for Economic Development, 1987); *The Unfinished Agenda: A New Vision of Child Development and Education* (New York: Committee for Economic Development, 1991); *Putting Learning First: Governing and Managing the Schools for High Achievement* (New York: Committee for Economic Development, 1994); and *Connecting Students to a Changing World: A Technology Strategy for Improving Mathematics and Science Education* (New York: Committee for Economic Development, 1995).

7. A sampling of writings in this direction includes Nancy Adelman, *The Case for Integration of Academic and Vocational Education* (Washington, DC: Policy Studies Associates, 1989); Thomas Bailey, *Changes in the Nature and Structure of Work: Implications for Skill Requirements and Skill Formation* (New York: Columbia University, 1990); John Bishop, *Expertise and Excellence* (Ithaca: Cornell University Center for Advanced Human Resource Studies, 1995); Susan Bodilly et al., *Integrating Academic and Vocational Education: Lessons from Eight Early Innovators* (Santa Monica, CA: RAND, 1993); W. Norton Grubb, ed., *Education through Occupations in the American High School* (New York: Teachers College Press, 1995); Richard Kazis, *Improving the Transition from School to Work in the United States* (Washington, DC: American Youth Policy Forum, 1993); and Basil Whiting, *Improving the Transition from School to Work* (Kansas City, MO: Ewing Marion Kaufman Foundation, 1994).

8. See Susan Berryman, *Cognitive Science: Indicting Today's Schools and Designing Effective Learning Environments* (Washington, DC: U.S. Department of Labor, 1991); Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Basic Books, 1983); and Senat A. Raizen, *Reforming Education for Work: A Cognitive Science Perspective* (Berkeley, CA: National Center for Research in Vocational Education, 1989).
9. See, for example, W. Norton Grubb et al., *The Cunning Hand, the Cultured Mind: Models for Integrating Academic and Vocational Education* (Berkeley, CA: National Center for Research in Vocational Education, 1991); and Vernay Mitchell, *Exemplary Urban Career-Oriented Secondary School Programs* (Berkeley, CA: National Center for Research in Vocational Education, 1990).
10. See Commission on Vocational Education and Career Opportunities, *Linking Learning with Earning*, chaps. 2 and 3.
11. John Bishop, "High School Performance and Employee Recruitment," *Journal of Labor Research* 13 (1992): 41-4; Committee for Economic Development, *Putting Learning First*, p. 25; Secretary's Commission on Achieving Necessary Skills, *Learning a Living*, chap. 6.
12. Joseph Altonji, "The Effects of High School Curriculum on Education and Labor Market Outcomes," *Journal of Human Resources* 30 (1995): 409-38; Henry Farber and Robert Gibbons, *Learning and Wage Dynamics* (Princeton, NJ: Princeton University Industrial Relations Section, 1994); Marc Bendick, Jr., and Mary Lou Egan, *Jobs: Employment Opportunities in the Washington Metropolitan Area for Persons with Limited Employment Qualifications* (Washington, DC: Greater Washington Research Center, 1988), chap. 5.
13. *An America That Works: The Life-Cycle Approach to a Competitive Work Force* (New York: Committee for Economic Development, 1990), chaps. 4 and 5.
14. Robert I. Lerman, "Building Hope, Skills, and Careers: Making a US Youth Apprenticeship System," in *Social Policies for Children*, ed. Jennifer Hochschild, Irwin Garfinkel, and Sara McLanahan (Washington, DC: Brookings Institution, 1996), p. 5. See also Marc Bendick, Jr., "Enhancing Employment Opportunities for Minority and Disadvantaged Youth," in *Policy Studies Review Annual, Volume 8*, ed. Ray Rist (New Brunswick, NJ: Transaction Books, 1987), pp. 452-66; and John Tyler, Richard Murnane, and Frank Levy, "Are More College Graduates Really Taking 'High School' Jobs?" *Monthly Labor Review*, December 1995, pp. 18-27.
15. Keith MacAllum and Patricia Ma, *Skills, Standards, and Entry-Level Work* (Washington, DC: U.S. Department of Labor, 1995), p. 34; Mary Lou Egan and Marc Bendick, Jr., *Managing Greater Washington's Changing Work Force: Keys to Productivity and Profit* (Washington, DC: Greater Washington Research Center, 1991), pp. 34-6.
16. Lerman, "Building Hope, Skills, and Careers."
17. The employer community is increasingly responding to this need, although on a scale that remains small compared to the aggregate size of the nation's educational system. Between 1965 and 1993, corporate donations to elementary and secondary schools (including money and goods but not staff time) rose from \$8 million to \$423 million. See *Corporate Support for Education, 1993* (New York: Council for Aid to Education, 1993).