

7. CAN WE GET THERE FROM HERE? WORKFORCE READINESS AND APPRENTICESHIP

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I am a great admirer of the German youth apprenticeship system, and a skeptic about its easy transportation to the United States. My skepticism does not arise from doubt that we have a serious training problem in the United States. Nor does it follow from some faith in the market to solve those problems. Instead, it is based on the fact that the U.S. generally lacks the dense institutional infrastructure that supports the German youth system, let alone the institutions needed to support the broad integration of training and upgrading throughout the lifetime of workers that are key to that system's success. While much needs to be done to help the school-to-work transition in the United States, and while some structured work experience for high school students would be desirably one part of that, we need to be much more attentive than we have been thus far to the workplaces into which apprentices are supposed to transit.

1. The Problem with American Training

Everyone agrees that the United States have a training problem — and there agreement ends. Assuming the United States have a training problem, what exactly is it? Basically, it is our failure to train most people for the types of jobs most needed to maintain U.S. living standards and a broad middle class. This is not a "competitiveness" problem, at least not in the technical sense of the term. Any country can compete in some areas if it is willing to drop the price of its labor and to write off other areas including their respective workers. The issue is whether we can generally compete as a high-wage economy. Can productivity, work and labor market organization reach the point where we preserve and improve the standard of living for most Americans? As a society, we have answered that question with a quiet "no" for the past twenty years.

Since the early 1970s, annual growth in economy-wide productivity in the United States — the key to maintaining wage levels within integrated markets — has dropped to a third of its previous post-World War II level and to half its long-term historic norm. If present trends continue, U.S. productivity, still the highest in the world, will

be exceeded by Germany, Japan, and other countries early in the next century. Real earnings in the United States have declined for four-fifths of the workforce. For those production and non-supervisory workers, weekly earnings are now back to their 1967-level. Median family income, after growing at an average annual rate of 3 percent between 1947 and 1973, has stagnated; since 1979, it has grown at one tenth that rate, or .3 percent, even as the number of hours worked by family members has greatly increased.

If present trends continue, today's young families will be the first generation in American history to live worse than their parents. Here too, the United States are not only falling behind their own past performance but also behind other countries. Our international position in wages, family incomes, and other basic measures of the quality of life has declined. Finally, U.S. income inequality has soared to record highs since 1947. After taxes, the top fifth of American families now receives as much income as the other 80 percent combined, while the share of income going to the top one percent of households (2.5 million Americans) almost equals that going to all of the bottom two-fifths (100 million Americans). In comparative terms, for example, U.S. wage dispersion is very high relative to other rich nations, and increasing.

These problems have many causes. Certainly, none can be blamed entirely on the weakness of American training institutions. Equally, however, addressing them will be very difficult without substantial improvement in U.S. training efforts. The basic reason for this already has been suggested: international competition. In sharp contrast to a generation ago, most U.S. firms now operate within, and not merely along-side, the international economy. This economy is densely populated by firms paying a fraction of U.S. wages. As international markets in other factors of production (e.g., machinery, finance) tend to produce convergence in their prices, maintaining U.S. competitiveness will require either a drop in the price of labor or greater emphasis on such non-price aspects of product competition as quality, variety, customization, service, and timely delivery. Achieving significant gains in these areas, however, requires substantial changes in the ways in which production is *organized*. Here we have significant problems.

In brief, American firms are still generally organized along "Taylorist" lines, with large supervisory forces overseeing a mass of isolated workers performing repetitive and narrowly defined tasks. The organization of work which assigns different production tasks to distinct and segregated occupational groups is mimicked in a cor-

porate structure that sharply distinguishes different functions (e.g., finance, production, sales, marketing, service). This organization grew up around and functioned well in a system of mass production of relatively standardized goods, produced in long runs and sold in a world (of largely domestic markets) in which the preeminent task of fiscal policy was the stabilization of demand. It is now generally recognized, that to perform well in non-price competition, this organizational scheme needs to be modified in the direction of flatter management hierarchies, more team production, greater integration of general corporate and particular production functions, and substantially greater responsibility assigned to frontline production workers.

Effecting this transformation in the organization of work will require, among other things, a substantially better trained frontline workforce than now exists. Within that workforce, technical competencies need to be raised and generalized; more important, so too must the mastery of the principles underlying different technology applications. Worker understanding of the interdependence of different corporate functions (design, production, marketing, and so on), and of different parts of the production process needs to be deepened. A variety of interactive skills and practices (listening, working with others in joint problem solving, taking responsibility for actions) needs to be advanced.

Assessed within this context, the present U.S. training effort comes up very short vis-à-vis commercial rivals. The United States still have the best university system in the world, and it does a good job training managers and very advanced technical personnel, directing others in the economy or working in scattered pockets of technological expertise. But it also claims some of the highest high school-dropout rates, lowest average math and science high school competencies, least developed school-to-work transition programs for the non-college-bound, most limited opportunities for advanced vocational instruction for the two-thirds of the population that does not finish college, and the lowest rates of firm investment in worker training in the advanced industrial world. As the fate of the approximately 80% of frontline workers over the past two decades shows, we are failing to compete as a high-wage economy. That is our training problem.

2. Why The Problem Will Not Solve Itself

This training problem will not solve itself for two basic reasons.

The most general problem is that business demand for workforce improvement is weak and uneven. Despite common talk to the contrary, there is no significant mismatch between the skill requirements of current jobs and the abilities of current workers. Moreover, business demand for more educated workers, at least as measured by the growth in different occupations carrying different skill requirements, is projected to slow down over the next decade, rather than increase. The reason for this is that most U.S. labor markets now approximate a low-wage, low-skill *equilibrium*. Given a low-skill environment, and little rigidity in wages, even firms operating under increased competitive pressure have continued with low-skill forms of work organization that require little more than obedience and good work attitudes from direct production or service workers. These firms may wish to remedy deficiencies in very basic worker skills necessary, for example, to handle statistical process control monitoring of product quality, or provide training to a few in the application of expensive new technology. They generally do not demand or promote broad and continuous skill upgrading among their frontline workforce. Low-skill strategies may be socially undesirable for all the reasons just noted. Yet that makes them no less profitable or attractive to firms, and their adoption weakens the political thrust for a stronger training effort.

Some would argue that this low-skill equilibrium will be disturbed by workforce shortages. The idea is that as the growth of the workforce slows, employers will be forced to substitute capital for labor. Firms will invest more in those workers who are available, and rely more on increases in their productivity. But this is a poor argument. The size of the workforce can be changed through immigration, or longer hours. The production site can be changed through subcontracting abroad or wholesale shifts in productive capacity. Furthermore, job growth at home may slow. One striking feature of the present recovery is that it is not a recovery in jobs. Orders have picked up, but demand for people to fill them has not kept pace. Manufacturing recalls are much lower than in the previous recoveries. At the same time, growth in that portion of the economy which has been the principal source of new jobs, the service sector, is slowing. Revised estimates of job growth in the United States make the 1990s the slowest decade since the 1950s, when the rate of new labor market entrants was even lower than at the present.

Second, even those firms anxious to improve their skill base face the problem of competitors free-riding on their training efforts.

Unless the training they provide is so narrow that it is only useful in their own firm, it will be marketable by the workers who receive it to other firms who do not pay for its provision. One firm's trainee may thus become another firm's asset, with the second firm benefiting from the training but not burdened by its costs. This threat of "free-riders" gives rise to the classic problems of collective action. What makes sense for the community may not make sense for any one of its members. While all firms might benefit from a broadly trained workforce, no firm may have the incentive to start providing it. Any solution to this dilemma will require some mechanism that effectively generalizes the costs of training across relevant firms. That can mean a strong employers association, a strong union covering many employers, or a state strong enough to impose a training tax. In most industries and regional labor markets in the United States, however, such mechanisms simply do not exist. The process of building them will be protracted and difficult.

It is easy for people to agree, in the abstract, on the importance of cooperation among business, labor, and government. Are there any phrases more common now than "public private ownership" and "cooperative labor relations"? Nearly everyone agrees that a new set of understandings and practices between the public and private sectors, and within the private sector itself, is necessary: to motivate students to complete high school, to refine the sorts of basic skills needed for gaining better than the lowest-paying jobs, to facilitate school-to-work transition and to provide effective occupational training or entry-level workers or pre-entry students. Furthermore, members of the incumbent labor force thus should be assured the opportunity for skill upgrading.

The injunctions guiding this new relationship are also broadly familiar, or will shortly become so. Liberal public educators need to recognize that not all business involvement in schooling is corrupting and narrowing. Conservative business figures need to recognize that not all public guidelines on private training are indefensible intrusions on liberty. Within the public sector itself, the scattered welter of public programs in education and training—at once redundant, uncoordinated and contradictory—should be rationalized to produce programs at once accountable, intelligible and minimally administered. They should deliver measurable benefits to all, including the "forgotten half" of the non-college-bound. Inside the private sector, business and labor need to join hands in recognition of their shared interest in productivity and the worker training needed to enhance it. Labor needs to end its jurisdictional wrangling and

deploy its considerable knowledge of training issues (accrued, for example, through its apprenticeship programs) to general advantage.

Effective public-private partnerships in training, at least those consistent with the norms of accountable and popular government, require a *much* higher level of coordination among potentially conflicting actors than presently exists. Educators commonly *do not* understand firm needs; when they do understand wants, they commonly correctly perceive firms as desiring only the narrowest forms of training (in effect, subsidies). Firms *do* steal workers from one another routinely. Motivating them to invest in training will require some assurance that their training efforts will be matched by those of rivals. Labor relations in the United States generally are poisonous, with unions *rightly* suspicious of employer demands for uncompensated training instead of "pay for knowledge" or "flexibility" in job assignments, without access to cross training. Firms also *rightly* perceive unions as narrowly territorial in defense of job boundaries. All these behaviors, moreover, are more or less rational, *given* the existing institutional and policy frame.

To navigate such tensions, more is needed than good intentions or the sweet light of reason. Also required are some institutions with capacities to reward, punish, and coordinate, that are both trusted by and responsive to the power relations and concerns of affected parties. Some of these institutional linkages need to run between the public and private sector. There seems to be a *particular* need to develop a set of intermediate and collective structures within the private sector itself to help resolve coordination and cooperation problems among those actors who will eventually decide how Americans are educated.

European training systems, whose success depends largely on such intermediate organizations, provide examples of what they need to look like. Ideally, they are sufficiently *encompassing*—covering most of an industry sector or geographically delimited labor market—to provide coordination and cooperation across a large share of similarly situated firms and workers. At the same time, they are adequately *rooted* in business practice to understand the training needs of successful public efforts. European training systems also are sufficiently *accountable* to public purposes to be trusted with a quasi-public status. In sum, again ideally, such organizations harness private initiative to public purpose, providing an institutional multiplier of state efforts. Indeed, a plausible basis for the formation of such institutions in the training area is to use discounts on state pro-

vision of training as an inducement. Building such institutions in the American case, however, is easier said than done, regardless of how inventive the use of public incentives is.

3. The Promise of Apprenticeship

It is within this context that the appeal of apprenticeship and youth-oriented work-based learning should be assessed. Most commentators on the American training scene see the lack of employer training as the most obvious deficiency of the system. Employer assumption of costs of training, implied by a work-based learning model, also helps with efficiency in the delivery of training. Here, as in most public-private partnerships, the rule of thumb is that "you get what they pay for." Pedagogically, work-based learning has certain advantages over classroom-based instruction, such as access to up-to-date equipment and information on current applications and the better motivation derived from role models (would-be machinists learning from machinists rather than professors). Another advantage is the opportunity to acquire attitudinal, social, and communicative skills in their actual context of application, and the opportunity to work with others in exploring essentially open technologies.

The chief difficulty facing apprenticeship programs is to secure agreement on the content, method and cost of what apprentices need to learn, and how contributions to that training are enforced across firms. These conditions, with the usual qualifications and criticisms, do exist in the field of "traditional" apprenticeship. But, considering the economy as a whole, this covers only a tiny fraction of workers: about .16 percent of the workforce at any given time. The effective limitation of apprenticeship to construction and manufacturing trades, moreover, and within the crafts to a tiny percentage of workers (in the 1970s, for example, annual completions represented only .4 percent of craft workers) inevitably shapes the dynamic character of the programs.

Traditionally, the beneficiaries of apprenticeship have been reluctant to expand such programs, since the expansion threatens their privileged labor market position. The United States are still light years away from the critical mass in advanced training that can transform an entire industrial culture and lead skilled workers, as in Germany, to mount "skill offensives" for ever-widening training of their colleagues. The awful state of labor-management relations in the United States is an additional complication. Consider the long

disputes between the construction trades and the rabidly anti-union Associated Builders and Contractors over apprenticeship standards and training in construction.

An expansion of existing programs certainly seems called for. There is, for example, a clear need for increased apprenticeship efforts in manufacturing. In a recent study of Wisconsin manufacturing, Wolfgang Streeck and I have found a sharp decline in apprenticeship training. Throughout the 1980s, reflecting the downsizing of firms and glutting of skilled labor markets, average annual completions of industrial apprenticeship dropped to 4.9/10 000 workers, or about half the level maintained over the 1946-79 period. Now, large gaps are showing up in different metal trades. The potential certainly exists for deploying a vastly greater number of skilled workers than now exist. Here, the framework of existing programs could provide a base for significant expansion, if—and it remains a big if—some organization among firms can be found that limits their ceaseless poaching from one another and if firms make a collective commitment to high performance work organization.

The issues become more pointed in the case of so-called "youth apprenticeship" and the use of workplaces as learning sites. Germany is a special target of interest with its high wages, high productivity, low youth unemployment, and famous "dual" system of apprenticeship training. The original Wisconsin model of vocational training was of course inspired by the German system, and more general contemplation—and eventual rejection—of that system was definitive in shaping the commitment to "comprehensive" high schools now under reconsideration. Here is a comment of a Chicago businessman on the German system:

There is perhaps no greater object lesson of the possibilities of vocational training than the phenomenal industrial advance of Germany during the last generation...This has been accomplished primarily because forty years ago German statesmen were sufficiently farsighted and progressive to inaugurate the comprehensive system of vocational education by which German youth acquire a better training for their life's work than youth of any other nation.

This comment, so reminiscent of present discussion, was made in 1913. As Yogi Berra might observe today's debate, "it is déjà vu all over again."

Historical perspectives aside, however, in the United States the work-based component of any program outside the domain of traditional apprenticeship raises obvious questions, given the lack of the institutional infrastructure that makes the German programs tick. Those programs rely on detailed guidelines for the curricula of apprentices, their payment and the divisions of training duties between firms and schools. The guidelines specify the credentials of broad-banded occupations. They are negotiated by the "social partners" of business and labor, under the eye of the state. They are supported by employers at a rate of 5 times (according to our recent estimate) the present U.S. private sector investment in training. German training programs are administered by the partners through an elaborate system of master trainers and in-house training institutes. They are enforced through encompassing employer associations and unions. None of these arrangements exist in the United States. Surely the state, which is extremely federated in the case of schools (adding further difficulties in establishing portable qualifications) is no substitute.

Everyone, for example, agrees that the service sector is a major drag on American productivity growth and truly needs a skills offensive. But employer associations in that sector are notoriously weak, and unions are weaker still. Employment is even less stable than in manufacturing, and firm commitments and capacities for training are even lower.

What would youth apprenticeship look like in such a setting? Presumably it would look slightly worse than it did in England (now experimenting with a wholesale adoption of the German system) where the "Youth Training Scheme" is beset by quality problems in training. It is widely denounced as a failed unemployment program and is currently being abandoned by employers in droves. This is only meant to suggest that some caution in the extent of the effort and in the expectations placed on it, is called for with regard to experimental programs.

Imagine a scaled-back initiative which aims to provide youth with some semi-structured work experience, a modest increase in the vocational content of high school instruction, and a head-start for the pursuit of more advanced vocational training in an area technical college or traditional apprenticeship program. Imagine such an effort only in those industries where genuine agreement among firms appeared possible on minimal standards and obligations, where employers were willing to assume some significant share of the costs of training, and where the incentives on pay were such

that employers did not profit immediately from the part-time employ of trainees at wages below that of incumbent workers. While that might be a very useful program and certainly worth trying, it is not "youth apprenticeship" in the sense of the German system.

4. Other Elements in the System

Finally, we should keep in mind the other elements of an advanced training system. Among them are: a uniform benchmark of competence achieved by all participants, active labor market policies aimed at facilitating job search and retraining, a series of pathways between vocational education and college and university training. Furthermore, it includes opportunities for those who will comprise the bulk of the workforce well into the next century—namely incumbent workers—to benefit from the new training commitment. Firms interested in moving to the forms of work organization and product strategy that will actually create demand for these skilled workers need to be supported. Finally, a series of floors on wages and expectations of improvement in wages contingent on improvements in training are necessary preconditions to motivate a process of life-long learning and provide employers with incentives to actually use the skills thus gained by their employees.

Without at least some of these other elements (e.g., uniform standards of school performance) efforts in the apprenticeship area, in particular the youth apprenticeship area, can be self-defeating. Aimed at contributing to a new culture of high-performance work organization and decent wages for frontline workers, new apprenticeship initiatives for youth could wind up merely as another program to recruit among high school students for a new, more technically adept, set of managers for those workers. Worse, they could prepare students merely for the frustration—not new in the American workforce—of not being allowed to use the skills they acquire, regardless of how well-trained they are. Effective apprenticeship must be part of a larger system of training, and we should be mindful of the need to build those surrounding programmatic supports.

To summarize: (1) the training problem is real, but it should be defined more in terms of living standards and income distribution rather than competitiveness *per se*. (2) The problem is not going to solve itself, given the difficulties on the demand side of the skill equation that confound efforts directed only to increasing supply, and also given free-rider difficulties in supplying this particular pub-

lic good. (3) An expansion of training opportunities for youth, including a substantial workplace-based component, is a good idea but certainly not a magic bullet remedy or one without foreseeable perverse effects. (4) To avoid those effects we need to consider broader reform, centering heavily on the fate of incumbent workers and existing workplaces.

Each of these findings, obvious enough in themselves, points to an obvious conclusion: changing America's training practices will not be easy. It will take politics —a low politics of brick-by-brick building of networks and consortia— to accomplish the task. Such changes require industry standards and agreements, new pay schedules and collective bargains, school reform (and more reform), manufacturing extension services and a myriad other forms of inter-firm cooperation and complex state incentives. We need to persuade private actors to shoulder a bigger share of the burden. Politics, especially such low politics of institution-building, are always difficult even though in this case they are essential for the defense of our standard of living and that of our children.