Shared training: learning from Germany

German employers are more willing than U.S. employers to make systematic, long-term investments in worker training; Federal encouragement would go far toward persuading U.S. industry associations to help member firms with training

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In a recent report to Congress, the Office of Technology Assessment concluded that "Good training pays off—for the individual worker whose skills are upgraded, for the company seeking a competitive edge, and for the Nation—in overall productivity and competitiveness."[1] But the report found that only a few U.S. firms use training as part of a successful competitive strategy, in contrast to competitor firms in Germany and Japan. Further research based on the Office of Technology Assessment report demonstrates that employers in what was formerly West Germany spend twice as much as U.S. firms on worker training.[2] The key to this investment is that German employers can pool the costs and benefits of training through strong industry and trade associations. Given the findings regarding training in Germany,[3] U.S. firms could benefit greatly from following the German approach.

German investments in training

German workers receive two major types of training: apprenticeship and further training. About 65 percent of each class of middle school graduates enter apprenticeship training in fields ranging from skilled manufacturing to office work. Over 3 years, these would-be-apprentices spend 4 days per week in on-the-job training and at least 1 day per week at a state-supported vocational school. This thorough training does not come cheap: a 1984 study (the most recent available) by the Research Institute of the German Economy concluded that employers spent a total of 21.6 billion deutsche marks annually to train some 1.7 million young people.[4] (This estimate excludes the wages and value of work produced by apprentices.)

Using the average 1984 exchange rate of $0.35 per deutsche mark,[5] the West German investment equals about $7.56 billion, or $4,447 per apprentice, per year. Averaged across the employed West German work force of about 25 million people,[6] this apprenticeship investment comes to about $302 per worker per year.

To respond to growing international competition, West German firms and governments are stepping up the pace of further training. Traditionally, further training has taken the form of off-hours classes at state-supported schools, with employers and government paying tuition for workers who wish to be certified as master craftsworkers and thereby qualify for promotion to supervisory positions. Such training is now being supplemented with on-hours and off-hours courses in the use of new technology and other subjects. Employers invest heavily in further training—an estimated 38.9 billion deutsche marks in 1987.[7] Approximately 60 percent of this amount is for the wages of trainees, which must be excluded to make a meaningful comparison with the estimated U.S. investment. When the revised further training estimate of 15.6 billion deutsche marks is averaged across the total work force, the investment comes to about 624 deutsche marks per worker per year in 1987, or $331 per worker per year at $0.53 per deutsche mark (the average exchange rate during 1987).

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Combined with the investment in apprenticeship, this further investment means that West German employers are spending an average of at least $633 per worker annually on training.

U.S. investments in training

Unlike training in Germany, training by U.S. firms does not fall neatly into two broad categories. Although apprenticeship training does exist, it is quite small, accounting for only 0.16 percent of the U.S. work force, in comparison with 6.5 percent in Germany. The average U.S. apprentice is at least 23 years old, has previous employment or education, and works in unionized construction or manufacturing. Because of its limited scope, apprenticeship training is not the major mode of initial training for high school graduates in the United States. Instead, 57 percent of these graduates enroll in postsecondary education,[8] and the majority of these subsequently drop out, leaving to employers the task of completing their training.[9]

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But many U.S. firms fail to pick up where schools leave off: younger workers ages 16 to 24 receive a disproportionately small share of employer-provided training.[10] Nevertheless, employers do invest in training, and the amounts are increasing as international competition intensifies. Although the Office of Technology Assessment found that most calculations of U.S. firms' training investments are unreliable, the most reasonable estimate is that U.S. employers spend about $30 billion annually on formal classroom training.[11] Averaged across an employed work force of 114 million, American employers invest about $263 per worker per year in training.

These rough estimates suggest that German firms invest more than twice as much each year in worker training as their U.S. counterparts. The contrast with German apprenticeship training is especially stark: each year, West German employers invest nearly 17 times as much in training per apprentice as U.S. employers invest in training per average worker.

The role of industry associations

A dense network of industry associations allows German firms in the territory that was formerly West Germany to pool both the costs and benefits of worker training. Partly in response to the presence of strong unions (40 percent of the work force is unionized, compared to 16 percent in the United States), German companies band together to negotiate wages and other personnel matters, including training.[12] At the local level, all companies are required by law to join either a chamber of commerce and industry or a chamber of artisans. In addition, most firms join employer associations organized by industry sector. At the national level, these employer associations are represented by the Federal Association of German Employers' Associations. Finally, many firms also participate in sectoral trade associations that represent their interests in nonpersonnel matters. (Some of these trade associations support shared research and development laboratories.)

West Germany's 1969 Apprenticeship Act codified into law the strong role of guilds and artisan associations (the predecessors of today's business groupings) dating back to medieval times. Under the law, the Federal Vocational Training Institute in Berlin develops the curriculum for each occupation in which there are apprenticeships, together with the affected union and employer associations. This democratic process can be very time consuming. For example, it took more than 10 years for the metalworkers' union and the Federation of Employers' Associations of the Metalworking Industry to agree on an updated apprenticeship curriculum in the metalworking industry.[13] However, the protracted negotiations led to a more efficient use of workers when 42 former occupations were consolidated into 6 apprenticeships with 16 subspecialties. And when the new rules were finally promulgated, implementation came quickly: in the first year, over half of all new apprenticeship contracts in industrial metalworking followed the new curriculum because companies and unions had been part of the negotiations and had already begun to use the new system.[14]

Industry associations are also involved in delivering training. As technology advances, apprenticeship has evolved away from "learning by doing" to a more theoretical training. Large firms have apprenticeship training centers where apprentices spend much of their time with instructors, especially during the first 2 years. Smaller firms, which rely more heavily on apprentices for daily production, send their trainees for a few weeks at a time to area training centers, administered and partially financed by their local chamber of commerce and industry or chamber of artisans. The German Federal Government encourages such centers, by contributing about half of their costs. Training advisors housed in the area centers and in the chambers of commerce and chambers of artisans not only oversee apprenticeship but also advise firms on strategies for further training.

Shared training in the United States

The strong role of industry associations in Germany stands in stark contrast to their role in the

United States, where participation is strictly voluntary. The smallest U.S. firms, with 10 or fewer employees, generally do not participate in any industry groupings. Larger firms, with 50 or more employees, may join the National Federation of Independent Business, their local chamber of commerce, and/or a sectoral association. However, the membership of chambers of commerce is dominated by wholesale and retail merchants and construction firms, so few manufacturers join either these organizations or industry-specific groups. Those small firms owned by self-employed professionals, such as pharmacists, lawyers, and doctors, typically belong to their professional association.[15]

Although sharing the high costs of developing and delivering courses could make training financially feasible for many more U.S. firms, particularly small firms, such efforts have been quite limited. One factor in the general reluctance of firms to pool their training efforts is their concern that they will be charged with violating antitrust laws.[16]

To support the costs of high-quality training, a firm or industry must, in effect, tax itself. In unionized companies, collective bargaining provides a mechanism for collecting such fees. This is apparent in the U.S. construction industry, where high-quality apprenticeship is financed by contracts between unions and trade associations. Without union support, financing training is much more difficult: weak industry associations may be unable to obtain voluntary contributions from member firms, and a single firm acting alone may be unwilling or unable to support such extensive training.[17]

A 1987 survey of State and national trade associations revealed that most association executives question the benefits of training.[18] Their attitudes, together with the general weakness of U.S. industry associations, help explain why a Federal demonstration program to promote apprenticeship training through national trade associations in the late 1970's had little long-term impact. Once the Federal funds were gone, none of the trade associations continued training programs on their own initiative.[19] In 1989, only 6 percent of U.S. trade and professional associations offered training programs, and only 3 percent provided training leading to certification.[20]

Among several notable exceptions to the generally poor track record of U.S. trade associations in providing worker training are the apprenticeship and upgrade training sold to member firms by the National Machining and Tooling Association and courses provided by the American Institute of Banking, an arm of the American Banking Association. The success of joint union-trade association apprenticeship in construction has led to new initiatives, including the creation of the Construction Industry Workforce Foundation, representing four trade associations, whose goal is to address expected shortages of skilled craftsworkers.[21]

These examples demonstrate that U.S. firms can indeed pool the costs of training through industry organizations. However, encouraging such efforts will require sustained governmental support, rather than short-term demonstration programs. The Office of Technology Assessment has identified several policy options that would provide such support. First, to reduce business uncertainty about antitrust laws, Congress could clarify the law with respect to shared training. Such action has a precedent in the 1984 National Cooperative Research and Development Act, which both assured business that shared research and development activities would be judged "on the basis of. . . reasonableness" and limited damages for any actions judged to be anticompetitive.[22] Second, given the general weakness of U.S. trade associations, Congress might consider offering its assistance in the creation of new organizations specifically for training (training consortia), as well as supporting training activities through existing associations.

To encourage the creation of training consortia, the Federal Government could provide financial aid, information, and technical assistance. The 101st Congress considered a bill (S.2114, as introduced) that would have created a 10-year program, funded at $5 million in the first fiscal year, for these activities. An important component of the Federal technical assistance would be the provision of information on "training compacts," under which trainees who went to work for a firm outside the consortium would have to reimburse the consortium for the costs of their training. Such compacts would ease employer concerns about the loss of trained workers to "free riders" outside the consortium.[23]

Encouraging U.S. firms to pool the costs of training through industry organizations will require sustained governmental support.

At the same time, Congress could consider giving the Department of Labor a statutory charter and more funds for a sustained effort to build up the training capacities of existing trade associations.[24] The Department's newly created Office of Work-Based Learning is beginning to move in this direction, but it has other major program responsibilities and only enough funding to support a few national demonstration projects on a short-term basis ($3 million worth in 1989). Initial and sustained funding of at least $10 million per year would be required to move this effort beyond the demonstration phase. With increased funding, the Department of Labor could work with trade associations, new training consortia, and/or joint union-management groups to identify industrywide training needs and to aid in the development and delivery of

appropriate training. Such efforts could ultimately lead to the creation of self-sustaining training activities that no longer would require Federal support. □

Footnotes

[1] U.S. Congress, Office of Technology Assessment, *Worker Training: Competing in the New International Economy*, Report No. OTA-ITE-457 (Washington, U.S. Government Printing Office, 1990).

[2] Office of Technology Assessment, *Worker Training*, p. 3.

[3] The term "Germany," as used throughout this article, refers to the former Federal Republic of Germany (West Germany).

[4] Research Institute of the German Economy, "Ausbildungskosten 1984," *Informationen zur beruflichen Bildung*, March 24, 1986, p. 2.

[5] International Monetary Fund, *International Financial Statistics*, July 1988, p. 240.

[6] Karl Roemer, ed., *Facts about Germany* (Guetersloh, Germany, Vertelsmann Lexikon Verlag, 1987), p. 168.

[7] Reinhold Weiss, "Costs and Structures of In-plant Further and Continuing Training in the Federal Republic of Germany—English Synopsis" (Cologne, Research Institute of the German Economy, 1990); and Reinhold Weiss, personal communication, October 5, 1990. The total invested includes the training expenditures of public, private, and agricultural employers, as well as that of self-employed professionals.

[8] U. S. Congress, General Accounting Office, *Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries*, Report No. GAO/HRD-90-88 (Washington, General Accounting Office, 1990), p. 12.

[9] If current dropout trends continue, less than 30 percent of today's high school students will get a college degree. See the William T. Grant Foundation Commission on Work, Family and Citizenship, *The Forgotten Half: Non-College Youth in America* (Washington, 1988), p. 29.

[10] Max L. Carey and Alan Eck, *How Workers Get Their Training* (Washington, Bureau of Labor Statistics, 1985), p. 42.

[11] Office of Technology Assessment, *Worker Training*, p. 129.

[12] The discussion that follows in this section is drawn from Wolfgang Streeck, Josef Hilbert, Karl-Heinz van Kavelier, Friederike Maier, and Hajo Weber, *The Role of the Social Partners in Vocational Training and Further Training in the Federal Republic of Germany* (Berlin, European Centre for the Promotion of Vocational Training, October 1987), pp. 6–10.

[13] Streeck and others, *The Role of the Social Partners*, p. 67.

[14] Federal Institute for Vocational Training, "New Occupations in Metalworking" (Berlin, Federal Institute, November 1988). This discussion is drawn in part from an interview with officials of the Federal Institute for Vocational Training conducted on June 1, 1989. Travel for this and other interviews with German training experts was supported by the German Marshall Fund of the United States.

[15] Ed Starr, Office of Economic Research, U.S. Small Business Administration, personal communication, December 14, 1989.

[16] The Office of Technology Assessment found that this concern may be more perception than reality, but that it does deter joint training efforts. See Office of Technology Assessment, *Worker Training*, p. 45.

[17] For example, apprenticeship is weaker in manufacturing than in construction primarily because of the lack of strong industry associations in manufacturing. See Robert W. Glover, "Expanding the Use of Apprenticeship," report submitted to the Bureau of Apprenticeship and Training, U.S. Department of Labor, September 1988, p. 26.

[18] Wayne E. Schroeder and Roy L. Butler, *Improving Vocational Education Programming through Greater Involvement of Trade Associations* (Columbus, OH, National Center for Research in Vocational Education, 1987), p. 29.

[19] Glover, "Expanding the Use of Apprenticeship," p. 28.

[20] Anthony P. Carnevale, Leila J. Gainer, Janice Villet, and Shari L. Holland, *Training Partnerships: Linking Employers and Providers* (Alexandria, VA, American Society for Training and Development, 1990), p. 25.

[21] Judy Schriener, "Ganging Up on Work Force Problems," *Engineering News-Record*, January 11, 1990, p. 39.

[22] Office of Technology Assessment, *Worker Training*, p. 45.

[23] *Ibid.*, p. 47.

[24] *Ibid.*, p. 47.

APPENDIX: A note on the validity of the investment estimates

The estimate of German investment used in this article is based on a 1987 survey of a stratified random sample of firms, selected to be representative of the West German economy.[1] The 2,548 firms in the sample were members of 67 chambers of commerce and industry (out of 79 in the country), 15 chambers of artisans (out of 42), and 3 employers' associations. These groups helped select sample firms and conducted interviews and written surveys. In total, the sample firms employed 2.3 million workers, or about 14 percent of the privately employed nonfarm work force. The majority were small and middle-sized firms: 49.6 percent with fewer than 100 and 75.3 percent with fewer than 500 workers. The survey received an unusually high response—1,505 firms, or 59 percent.

The estimate of U.S. investment is based in part on a special Survey of Participation in Adult Education, added to the Census Bureau's monthly Current Population Survey (CPS) in May 1984. CPS data are obtained through interviews with a representative sample of about 60,000 households. The supplementary questions on adult education were posed, when possible, to all

individuals who reported some participation in adult education, including participation in employer-sponsored training at work.[2] The number of people trained and the hours of training derived from this survey were multiplied by an average cost of employer-provided training to arrive at the $30 billion total.

Both the German and U.S. estimates must be viewed with caution. Firms on both sides of the Atlantic keep poor track of training costs. For example, only 42.6 percent of firms responding to the German interviews said that they kept separate accounts for even part of their training costs. Small firms were underrepresented in the German survey, and the methodology for selecting the survey sample was not spelled out.3 Cost accounting pertaining to training by U.S. firms is even worse, making the estimate of a national average cost per hour of training dubious. In addition, it is unclear how the CPS survey data were used to derive a national estimate of numbers of trainees and hours of training.

Despite these limitations, the two estimates are the best currently available.

Footnotes to the appendix

[1] Reinhold Weiss, "Costs and Structures of In-Plant Further and Continuing Training in the Federal Republic of Germany—English Synopsis" (Cologne, Research Institute of the German Economy, 1990), pp. 1–2.

[2] Susan T. Hill, *Trends in Adult Education: 1969–1984* (Washington, U.S. Department of Education, 1987), p. 39.

[3] Small firms with fewer than 100 employees make up a large share of West German enterprise—71.8 percent in the manufacturing sector alone. By comparison, only 49.6 percent of CPS survey respondents had fewer than 100 employees.