

**Chapter 8**

# **Training and Workers' Careers**



## SUMMARY

Transferable training, useful in more than one job or company, is hard to get at any age. High school vocational courses poorly track the changing needs of the workplace, and noncollege youth receive meager help in finding gainful employment. Once employed, younger workers receive little company training because of their high turnover. Even when their careers stabilize, shopfloor workers get little attention, because companies tend to save training dollars for white-collar managers, professionals, and technicians. Finally, older workers are often under-trained because of age-related stereotypes.

Nonsupervisory workers who are trained at work may find that their narrow, job-specific skills do not transfer easily to a new job or a new employer. Further education outside of work often provides transferable skills and better earnings; however, barriers such as cost, family responsibilities, and fear of failure in a school setting prevent many adults from attending outside courses.

Only a small fraction of nonsupervisory workers receives transferable training. This includes those who participate in formal apprenticeship programs, joint union-management training, and innovative programs to tap the skills of older workers.

Apprenticeship has declined in the United States, where only 0.16 percent of the workforce is enrolled in governmentally registered apprenticeship programs. Nevertheless, the quality of apprenticeship training as measured both by workers' wages and productivity remains high. Major expansion of apprenticeship, both in its traditional stronghold of manufacturing and to the service sector, could potentially aid U.S. competitiveness as well as enhance workers' careers.

Some of the largest U.S. unions and companies have created joint training programs through contract negotiations. During 1989, these joint programs controlled about \$324 million and made

training accessible to about 709,000 workers. Other, smaller, joint union-management programs have also provided training that has benefited both firms and workers. With only 16 percent of the American workforce represented by unions, these programs have a limited direct impact. However, large non-union employers may well develop similar programs, to maintain competitive rank or, ironically, to block unionization drives.

Workers with transferable skills are more likely to be employed and to continue working longer than others. Whether employers will support development of such skills remains in question. It is possible that the shrinking pool of younger workers may encourage more employers to adopt apprenticeship and other forms of enhanced training for that age group while also increasing their training of older workers to keep them on board.

## ACCESS TO TRAINING AT WORK

Training is a major route to career advancement, especially within companies: several studies show that workers who are trained at work earn 10 to 30 percent more than their untrained counterparts and are less likely to lose their jobs.<sup>1</sup> The earnings advantage of the trained workers can last as long as 13 years following training. Training has been shown to benefit a broad spectrum of workers—while managers enjoy the greatest increase in earnings, the wage advantage of trained semiskilled workers lasts the longest.

However, access to training is limited. Workers under age 25 and workers over age 44, as well as most nonsupervisory workers and minorities receive a disproportionately small share of company-provided training.<sup>2</sup> For example, in a 1983 Bureau of Labor Statistics (BLS) survey asking about all types of post-school, job-related training, white males made up 52 percent of those who said they had received upgrade training once employed (they made up 50 percent of the employed labor force at that time). By contrast, black males made up only 7

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<sup>1</sup>Stephen L. Mangum, "Evidence on Private Sector Training," *investing in People* (Washington DC: U.S. Department of Labor, Commission on Workforce Quality and Labor Market Efficiency, 1989), p. 354.

<sup>2</sup>Hong W. Tan, "Private Sector Training in the United States: Who Gets It and Why," discussion paper prepared for the National Assessment of Vocational Education (Washington, DC: National Assessment of Vocational Education, February 1989), p. 5.

percent of those who had received upgrade training, even though they made up 9 percent of the labor force.<sup>3</sup> Hispanics and other nonwhite minorities, who made up 3 percent of the workforce, accounted for only 2 percent of upgrade training.

Younger workers, who most often need training, are least likely to get it. In the 1983 BLS survey, when 55 percent of all workers reported that they had needed some type of training to qualify for their current jobs, only 25 percent of workers aged 16 to 19 and 47 percent of workers aged 20 to 24 said likewise. Once employed, only 14 percent of the younger workers between 16 and 24 years of age reported receiving any upgrade training, yet this group made up 19 percent of the U.S. labor force.<sup>4</sup>

Nonsupervisory workers of all ages, especially those in lower level jobs, are unlikely to receive or take training. While the overall average of workers reporting they needed qualifying training in the BLS survey was 55 percent, only 37 percent of machine operators, 36 percent of transportation workers, and 16 percent of laborers said they needed such training. In contrast, 93 percent of professionals and 71 percent of executives and managers needed training to obtain their jobs.<sup>5</sup> Those individuals with limited formal schooling also face limited training opportunities in the workplace and hence lower future productivity, income growth, and employment stability as well.<sup>6</sup> Formal training is most often delivered to managers and more highly educated employees; entry-level workers and minorities are less likely to receive training on company time.<sup>7</sup>

The 1983 BLS survey showed that on average only about 35 percent of workers had received any type of upgrade training once employed. This small amount of training was delivered unevenly across

occupations. Figure 8-1 shows that workers in some occupations received far more than the average amount of training while those in other occupations received less. For example, three-fifths of professionals, more than half of technicians, and nearly half of managers reported receiving upgrade training. By contrast, shopfloor workers, such as machine operators and laborers were much less likely to receive training (22 percent and 14 percent respectively, received upgrade training).<sup>8</sup> When companies install new equipment, they frequently hire the equipment vendor to train the workers, but this training is often provided only to plant engineers and/or managers, rather than to the nonsupervisory workers who will use the new technology on a daily basis.

Workers who receive company-specific training can find that their skills are not marketable elsewhere. For example, during a 1986 layoff, American Telephone and Telegraph, Inc. (AT&T) set up a telephone hotline so that other companies could recruit the laid-off workers. While the potential employers wanted clerical workers with excellent typing and word processing skills, many of the AT&T workers only knew how to use one specialized data or word processing package.<sup>9</sup>

Employer-supported training leading to formal credentials is more transferable than informal on-the-job training. One recent study found that workers who had completed apprenticeships or school-based training earned higher wages with their current employers than those in the same company who had not. However, on-the-job training with a previous employer did not appear to lead to higher wages with a current employer.<sup>10</sup>

<sup>3</sup>Max L. Carey and Alan Eck, *How Workers Get Their Training* (Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics, 1985), p. 42. As discussed in ch. 5, the accuracy of such surveys depends on individuals' memories and their understanding of what constitutes training.

<sup>4</sup>*Ibid.*, p. 20.

<sup>5</sup>*Ibid.*, p. 21.

<sup>6</sup>Tan, *op. cit.*, footnote 2, pp. 18-19.

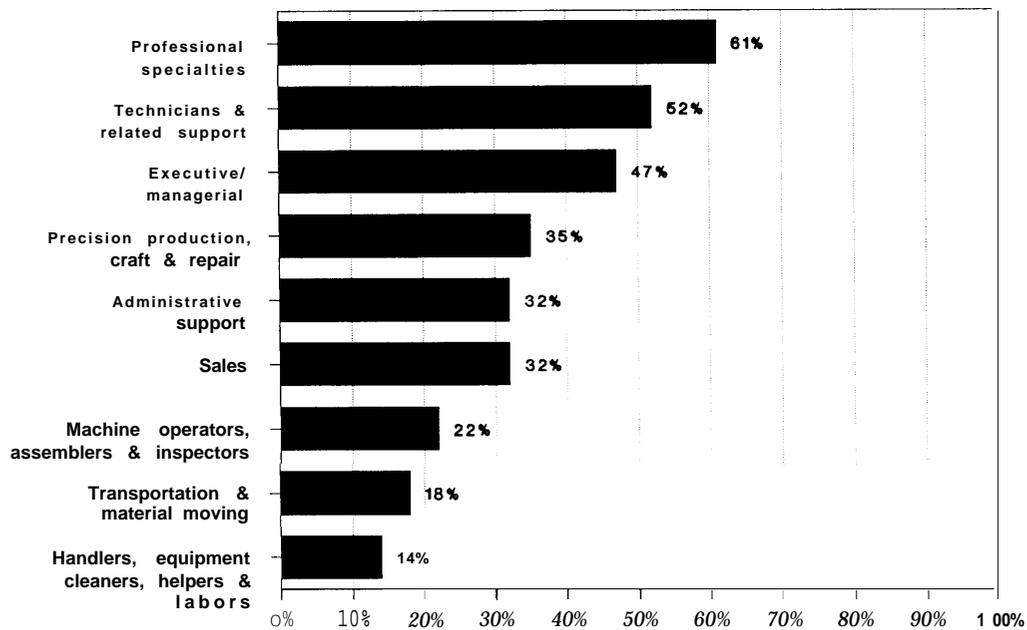
<sup>7</sup>Lee A. Lillard and Hong W. Tan, *Private Sector Training: Who Gets It and What Are Its Effects?* (Santa Monica, CA: Rand Corp. for U.S. Department of Labor), p. vii.

<sup>8</sup>Carey and Eck, *op. cit.*, footnote 3, pp. 18-19.

<sup>9</sup>Discussion based on information received by Margaret Hilton, OTA, when employed by the Communications Workers of America in 1986.

<sup>10</sup>Lisa M. Lynch, "Private Sector Training and Its Impact on the Earnings of Young Workers" (Cambridge, MA: M.I.T., Sloan School of Management November 1988).

Figure 8-I—Upgrade Training by Occupation  
(percent of workers reporting upgrade training)



<sup>a</sup>NOTE: On average, 35 percent of all workers received skill improvement training for their current job.

SOURCE: Max Carey and Alan Eck, *How Workers Get Their Training* (Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics, 1985), p. 18-19.

### *Lack of Training for Older Workers<sup>11</sup>*

Older workers, those age 45 or older, are unlikely to get adequate training at work.<sup>12</sup> Surveys of workers, such as the one conducted by BLS, show that older employees receive a smaller share of both on-the-job training and outside courses than younger workers,<sup>13</sup> and that training declines with age within the older worker population.<sup>14</sup> Some older workers compensate by taking outside courses, but most do not. Among the 14 percent of adults who took adult education courses in 1984, only one-fourth were 45 and older, compared with 60 percent who were between 25 and 44 years of age.<sup>15</sup> In 1983, these two

groups constituted 31 and 51 percent of the workforce respectively,<sup>16</sup> indicating that older workers are underrepresented in adult education courses.

Employers invest less in training older workers because they believe the company cannot recapture all of its investment during the employee's remaining worklife.<sup>17</sup> The fact is that older workers change jobs less frequently than younger workers (see ch. 3). The Age Discrimination in Employment Act (ADEA) prohibits denying access to training on the basis of age (see box 8-A). However, budgetary constraints inhibit enforcement of ADEA provisions.

<sup>11</sup>The material on older workers in this chapter is based on F. R. Rothstein, with D. J. Ratté, "Training and Older Workers: Implications for U.S. Competitiveness," report prepared for the Office of Technology Assessment under contract N3-1630, March 1990.

<sup>12</sup>The "older" worker is variously defined. The Federal Age Discrimination in Employment Act includes workers as young as 40 among those covered. Some Federal assistance programs for older workers limit assistance to those 55 and over. In this report, OTA uses 45 as the beginning point as did the National Commission for Employment Policy in *Older Workers: Prospects, Problems, and Policies*, report No. 17 (Washington, DC: National Commission for Employment Policy, 1985).

<sup>13</sup>Carey and Eck, op. cit., footnote 3, p. 42.

<sup>14</sup>Ibid., p. 20.

<sup>15</sup>Susan T. Hill, *Trends in Adult Education 1969-1984* (Washington, DC: Department of Education, Center for Education Statistics, 1987), p. 23 (table 8-B).

<sup>16</sup>Carey and Eck, op. cit., footnote 3, p. 42.

<sup>17</sup>R. J. Vaughan and S. E. Berryman, *Employer-Sponsored Training: Current Status, Future Possibilities* (New York, NY: Institute on Education and the Economy, 1989), p. 5.

**Box 8-A—ADEA: Two Cases<sup>1</sup>**

**The** Age Discrimination in Employment Act (ADEA) of 1967 specifically prohibits companies from denying training to workers on the basis of age. Older workers have successfully sued because they were denied training given to younger workers and suffered adverse consequences as a result.

Case 1. CBS Inc. switched from film canisters to videotape and trained their newer, younger workers in the new technology. The older workers sued when they were disproportionately affected by a subsequent layoff because they had not received the training.

**Case 2.** In a 1989 case, an office machines serviceman in Kansas City, Missouri, successfully sued his employer, Monroe Systems for Business, Inc. The employee was the oldest of six servicemen in the Kansas City office. He had been discharged as part of a layoff because he lacked photocopier training, although he had repeatedly requested it. Younger men who received the training that he lacked were not discharged.

There have been similar cases, against Westinghouse Electric Corp. and NCR Corp., when age-based denial of training resulted in subsequent job loss. The faster technology changes and the more sophisticated the senior lobby becomes, the more likely are suits of this kind.

<sup>1</sup>F.R. Rothstein, with D.J. Ratte, "Training and Older Workers: Implications for U.S. Competitiveness," report prepared for the Office of Technology Assessment under contract N3-1630, March 1990, pp. 56-57.

Another factor in employers' reluctance to train older workers is the negative attitude of managers and executives.<sup>18</sup> Surveys show that older workers are generally seen as loyal, with good work habits (e.g., attendance, punctuality), a commitment to quality, and a strong work ethic, but managers often rate them lower on flexibility, adaptability, and aggressiveness.<sup>19</sup> In 1985, for example, employers in industrial settings were found reluctant to hire and



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Demographic changes and increasing sensitivity to age discrimination may increase interest in tapping the experience of older workers.

train new employees over 40 or to retrain those already on the payroll—despite evidence that those workers are healthy, dependable, and productive, with low accident rates.<sup>20</sup>

Despite management attitudes, many older workers want to stay employed and to pursue further training. Three out of four adults would prefer to work part-time instead of retiring completely.<sup>21</sup> A recent survey found that workers between 40 and 49 were especially interested in training for a new position whereas workers between 50 and 62 were most interested in training to update their current job skills. Even workers over 62 expressed a high level of interest in training.<sup>22</sup>

Reflecting these views, organized labor, which traditionally has sought pension and early retirement benefits for older workers, is beginning to press

<sup>18</sup>S. H. Rhine, *Managing Older Workers: Company Policies and Attitudes* (New York, NY: The Conference Board, 1984), pp. 16-17; B. Rosen and T. H. Jerdee, "Investing in the Older Worker," *Personnel Administrator*, April 1989, No. 34, p. 71; The Yankelovich Group, *Business and Older Workers* (Washington, DC: American Association of Retired Persons, 1989), p. 20.

<sup>19</sup>Helen Dennis, *Fourteen Steps in Managing an Aging Work Force* (Lexington, MA: Lexington Books, 1988), p. 145.

<sup>20</sup>Harvey L. Sterns and Dennis Doverspike, "Training and Developing the Older Worker: Implications for Human Resource Management," in Dennis, *op. cit.*, footnote 19, p. 98.

<sup>21</sup>American Association of Retired Persons, *Workers 45+ Today and Tomorrow* (Washington, DC: 1986), p. 19.

<sup>22</sup>American Association of Retired persons, *Work and Retirement: Employees Over 40 and Their Views* (Washington, DC: 1986), pp. 11-12.

management for retraining and job redesign to keep its more senior members at work.<sup>23</sup>

Educating managers on age issues can be effective in changing their perspectives and decisions vis-à-vis training older workers, and in challenging their concerns about the return on investment in older worker training.<sup>24</sup>

## EMPLOYMENT SECURITY AND TRAINING

Workers' careers are affected by many factors, including layoffs, voluntary quits, and the creation and destruction of firms (see ch. 3). Increased international competition and the globalization of production are rapidly changing the structure of the U.S. economy, and hence, job opportunities. About two million workers are displaced each year due to layoffs or business closures, fewer jobs are available in large firms, and most new jobs are in the service sector, paying relatively low wages.<sup>25</sup> In the midst of this shakeout, few U.S. firms have been willing or able to make company-wide commitments to maintain full employment, retraining and redeploying a stable workforce in response to changing product and skill requirements. As a result, most American workers must be prepared for unwanted as well as desired job changes.

### *Barriers to Further Education*

Diplomas have clear benefits for workers. Among males, in 1987, college graduates earned 41 percent more than high school graduates, and high school graduates earned 21 percent more than high school dropouts.<sup>26</sup> While the real earnings of female college graduates rose 16 percent between 1979 and 1987, earnings of females with only a high school diploma rose only 2 percent, and females without diplomas saw their earnings *drop* by 4 percent.<sup>27</sup> More highly

educated workers of both sexes are also less likely to experience unemployment than those with fewer years of schooling (see box 6-D).

Many employers provide tuition assistance to help workers further their education. One study estimates that nearly three-fourths of U.S. firms sometimes pay in part or in full for outside courses taken by their employees. This study further estimates that employers spend about 0.2 percent of payroll, or \$1.8 billion per year, on such benefits.<sup>28</sup> On average 3 to 5 percent of those eligible in any given year<sup>29</sup> take advantage of employer-provided educational assistance.

Barriers such as poor basic skills, lack of information about educational opportunities, lack of money, family responsibilities, and fear of failure in school settings often prevent nonsupervisory workers from extending their formal education outside of working hours. Even when employers provide tuition assistance, some workers cannot afford to pay tuition up front and wait for reimbursement following successful course completion. In addition, some employers use these programs quite selectively for a few chosen managers, while other firms fail to publicize their programs because they feel that in-house courses are more beneficial than outside education.<sup>30</sup>

Unions have negotiated improvements in tuition assistance programs that help to overcome many of these barriers. These improvements include eliminating requirements that courses be strictly job-related, moving courses to the workplace, greatly increasing educational and career counseling, providing tuition in advance instead of after course completion, reimbursing workers for child care and transportation expenses, and providing basic skills classes in a comfortable environment so that workers are better prepared for outside courses. As shown in

<sup>23</sup>Judith Wineman, "Age Issues in the Work Place: A Labor Perspective," in Dennis, op. cit., footnote 19, pp. 180-182.

<sup>24</sup>Dennis, op. cit., footnote 19, pp. 148-151.

<sup>25</sup>Peter B. Doeringer, *Turbulence in the American Workplace* (New York, NY: Oxford University Press, forthcoming).

<sup>26</sup>John Bishop, "Incentives for Learning: Why American High School Students Compare So Poorly to Their Counterparts," *Investing in People* (Washington, DC: U.S. Department of Labor Commission on Workforce Quality and Labor Market Efficiency, 1989), p. 11.

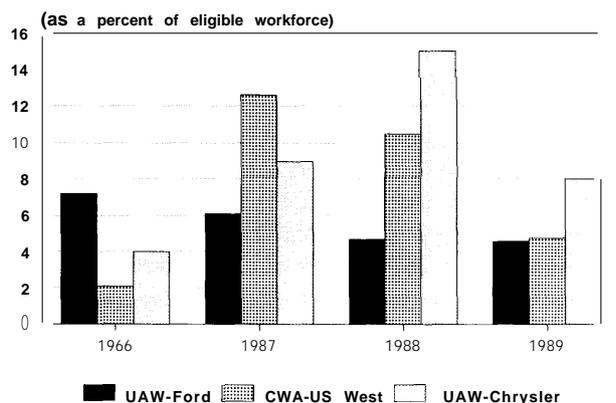
<sup>27</sup>Commission on the Skills of the American Workforce, *America's Choice: High Skills or Low Wages!* (Rochester, NY: National Center on Education and the Economy, 1990), n.p.

<sup>28</sup>This estimate must be approached with caution because it is based on a 1988 survey with a response rate of 0@ 11.3 percent. The group surveyed was selected to represent a cross-section of U.S. business by industry, firm size (including firms with less than 100 employees), and geographic region—U.S. Chamber of Commerce, Research Center, *Employee Benefits: Survey Data From Benefit Year 1988* (Washington, DC: 1989), pp. 22, 33.

<sup>29</sup>Gerard G. Gold, *Employment-Based Tuition Assistance: Decisions and Checklists for Employers, Educators, and Unions* (Washington, DC: National Institute for Work and Learning, 1985), p. 9.

<sup>30</sup>Ibid.

**Figure 8-2-New Enrollments in Joint Union-Management Tuition Assistance Plans**



SOURCE: Based on information supplied by the joint programs to the Office of Technology Assessment, 1990.

figure 8-2, the proportion of workers who use tuition assistance in the joint programs has increased.

As discussed in chapter 2, Federal income tax policy also affects workers' choices. Most tuition assistance benefits, including those for courses taken to prepare for new careers as well as those related to workers' current jobs, are exempt from an employee's income tax.<sup>31</sup> However, the exemption will expire on September 30, 1990 unless extended by Congress. In part of 1989, when Congress allowed the exemption to expire temporarily and employers began withholding income taxes on the value of tuition benefits paid, there was a marked dropoff in participation in some tuition assistance plans (see figure 8-2). Continuing uncertainties about taxation of tuition benefits could have a dampening effect on workers' participation in off-hours education.

Workers' increased awareness of the links between education and employment security, together with active recruitment by educational institutions and employer-provided tuition benefits, have led

more adults to further their educations. About 10 percent of adults participated in adult education in 1969, while, by 1984, 14 percent were involved.<sup>32</sup> However, those who do take outside courses are generally those who are more educated to begin with.<sup>33</sup> Like training at work, further education outside of work usually misses nonsupervisory workers.

## EDUCATION AND TRAINING FOR NONCOLLEGE YOUTH

More and more employers are requiring postsecondary education for jobs formerly held by high school graduates. Workers holding only a high school diploma face increasing difficulty in the job market: their real earnings dropped by 28 percent from 1973 to 1986, and the gap between their earnings and college graduates' widened.<sup>34</sup> Some employers who formerly hired high school graduates and "trained them up" to higher level positions, now look for young people with specific skills obtained from technical school, the military, or college. Internal job ladders have been weakened (see ch. 3).<sup>35</sup>

Young people who do not go on to college are often unprepared for work. A General Accounting Office report recently concluded that "insufficient attention is devoted to preparing U.S. noncollege youth for employment."<sup>36</sup> Several major industrial nations—including Japan, West Germany, and Sweden—invest proportionately more money and effort in education and training of their noncollege youth than does the United States. Young people in these other countries receive not only stronger basic education in school, but also much more assistance in preparing for the world of work and in finding jobs.

Once employed, younger American workers with only high school diplomas typically get little training.<sup>37</sup> This is partly because of the kinds of jobs they find—companies most likely to provide good jobs

<sup>31</sup>Public Law 95.600. Prior to this act, IRS regulations limited the tax exemption only to those educational benefits paid for courses directly related to the worker's current job.

<sup>32</sup>Hill, *op. cit.*, footnote 15, p. 5. The last such survey was conducted in 1984.

<sup>33</sup>Ivan Charner and Bryna Shore Fraser, "Different Strokes for Different Folks: Access and Barriers to Adult Education and Training" (Washington, DC: National Institute for Work and Learning, 1986), p. 49.

<sup>34</sup>Educational Testing Service, Policy Information Center, "From School to Work" (Princeton, NJ: ETS, 1990), p. 27.

<sup>35</sup>Thierry J. Noyelle, *Beyond Industrial Dualism* (Boulder, CO: Westview Press, 1987), p. 15.

<sup>36</sup>U.S. General Accounting Office, *Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries*, GAO/HRD-90-88 (Washington, DC: May 1990), p. 2.

<sup>37</sup>Lillard and Tan, *op. cit.*, footnote 7, p. vii.

with career ladders are less likely to hire young workers (those aged 16 to 20) than other companies offering low-skill, low-paid jobs with little chance of career advancement.<sup>38</sup>

Apprenticeship is one source of transferable training, but it serves much less than 1 percent of the workforce and is rarely available to young people just finishing high school. Other forms of company-provided training are often narrow and job-specific, limiting young workers' marketability to other employers. The net effect of poor basic education and a lack of broad, structured training at work is that many young people flounder through a series of low-wage jobs.

### Vocational Education

Advances in technology and work organization are altering the skills needed for jobs typically filled by noncollege youth (see chs. 3,4, and 6). There will continue to be many jobs for which advanced education will be unnecessary. However, the best among these jobs-those that offer better wages and career advancement-will go to job applicants whom employers believe can learn new skills and can adjust to new work circumstances.

These changes will require the American school system to radically improve the quality of education so that more young people can function successfully in the workforce. Most importantly, high school graduates will need a stronger foundation in basic skills-reading, writing, and arithmetic. They will also increasingly need a broader set of competencies: social skills to interact with co-workers, problem solving abilities, and good communication skills to interact with customers. Those young people who are comfortable with computer-based technology, recognizing that it will continue to

change during their worklives, will fare better than those who are not.

Public high school vocational education can make an important contribution to workforce preparation. The vocational system was initially developed for youths entering technical trades. Today, nearly all high school students (97 percent) enroll in at least one vocational course.<sup>39,40</sup> However, only about 30 percent of high school students concentrate on vocational courses in preparation for a specific occupation.<sup>41</sup>

The evidence is mixed about how well high school vocational education prepares young people for today's job market. Compared to college-bound students and those in a general education curriculum, vocational concentrators are more likely to be employed and working more hours per week in the year following graduation.<sup>42</sup> Although this is not surprising, considering the fact that graduates from the other two groups were more likely to be full-time postsecondary students, it is also interesting to note that, among those from all three groups who *were* working, vocational graduates had the lowest unemployment rates.

At the same time, however, most students graduating from vocational programs do not take jobs in their fields of concentration,<sup>43</sup> and those who do find skilled work rarely use their occupational courses.<sup>44</sup> Since other variables, such as the characteristics of the local labor market, affect students' employment prospects, low placement rates alone are not sufficient to judge the performance of vocational education.<sup>45</sup> Moreover, there are exceptions to the generally low placement rates, most notably in secretarial fields.<sup>46</sup>

<sup>38</sup>Stephen F. Hamilton, *Apprenticeship for Adulthood: Preparing Youth for the Future* (New York, NY: Macmillan, 1990), p. 3.

<sup>39</sup>U.S. Department of Education, National Assessment of Vocational Education, *First Interim Report* (Washington, DC: January 1988), pp. 1-5.

<sup>40</sup>U.S. Congress, Office of Technology Assessment, *Performance Standards for Secondary School Vocational Education—SET Staff Paper* (Washington, DC: OTA, April 1989), p. 12.

<sup>41</sup>U.S. General Accounting Office, *op. cit.*, footnote 36, p. 28.

<sup>42</sup>Sue E. Berryman, "Vocational Education and the Work Establishment of Youth: Equity and Effectiveness Issues" (Santa Monica, CA: The Rand Corp., 1980), p. 21.

<sup>43</sup>The William T. Grant Foundation Commission on Work, Family and Citizenship, *The Forgotten Half: Non-College Youth in America* (Washington, DC: January 1988), p. 50.

<sup>44</sup>U.S. Department of Education, *National Assessment of Vocational Education, Final Report, Volume 1: Summary of Findings and Recommendations* (Washington, DC: 1989), p. xiii.

<sup>45</sup>U.S. Congress, Office of Technology Assessment, *op. cit.*, footnote 40, p. 5.

<sup>46</sup>Senta A. Raizen, *Reforming Education for Work: A Cognitive Science Perspective* (Berkeley, CA: National Center for Research in Vocational Education, December 1989), p. 29.

Although vocational graduates seldom use their specific technical knowledge on the job, the best vocational courses help students develop good work attitudes (such as self-confidence and reliability) and general skills that can be used in a wide range of occupations. For example, students in agricultural education courses often learn about management, finance, and marketing by setting up income-generating business projects or experiments. A researcher visiting a class of 18 vocational agriculture students in West Virginia in 1986 found that only 1 student planned to become a farmer—the others were attracted to the blend of business skills and adaptability taught in the course, which they found superior to the traditional business program also offered at their high school.<sup>47</sup>

Given the changes now occurring in the workplace, both academic and vocational courses might benefit from a greater blend of theory and practice. Recent research suggests that people of all ages often learn both practical and theoretical skills most easily when working together as a team to accomplish a concrete task.<sup>48</sup> For example, a group of New Hampshire high school students designed and constructed a solar-powered car during the 1989-90 school year as part of an applied science class. The students made all decisions as a team, requiring them to learn decision-making, leadership, and management skills. As they consulted their peers in metalworking, drafting, and electricity classes, they began to assume responsibility for their own learning. The project leader, along with half of those on the team, were college-bound, but were attracted to a chance to get away from “book-centered learning.”<sup>49</sup> At a forum on this project, which was sponsored by the National Council on Vocational Education, one corporate training official stated that the skills these students learned matched those his company is seeking in new hires.

While incorporating practical tasks, an improved vocational curriculum would not limit learning to job-specific knowledge that rarely transfers to new



Photo credit: American Association for Community and Junior Colleges

The best vocational programs combine both academic and occupational skills.

contexts.<sup>50</sup> Instead, the goal would be to help students develop the flexibility and adaptability needed to adjust to changes in their lives and jobs. This can be accomplished by incorporating academic skills into vocational courses and by offering both academic and vocational courses at the same high schools (as many schools do now), rather than creating separate facilities for vocational concentrators. Students can learn mathematics quite effectively within the context of vocational courses such as business math and vocational math.<sup>51</sup> Academic coursework might help vocational graduates advance beyond entry-level jobs and pursue post-secondary education later in their careers.

The largest effort currently underway to better integrate vocational with academic education is a project of the 13-State Vocational Education Consortium of the Southern Regional Education Board.<sup>52</sup>

<sup>47</sup>Stuart A. Rosenfeld, “Vocational Agriculture: A Model for Education Reform,” *Education Week*, Sept. 26, 1984, p. 24.

<sup>48</sup>Lauren B. Resnick, “Learning in School and Out,” *Educational Researcher*, December 1987, p. 18.

<sup>49</sup>Anne Mytych-DelPonte, “N.H. High Schoolers Learn Technical Work Skills by Building Solar Car,” *Employment and Training Reporter*, July 7, 1990, p. 971.

<sup>50</sup>Sue E. Berryman, *Breaking Out of the Circle: Rethinking Our Assumptions About Education and the Economy* (New York, NY: Columbia University, Teachers College, National Center on Education and Employment, June 21, 1987), p. 5.

<sup>51</sup>Raizen, *op. cit.*, footnote 46, p. 29.

<sup>52</sup>Educational Testing Service, *op. cit.*, footnote 34, p. \*O.

The group has begun to design, implement, and evaluate a high school program combining both elements. When completed, this project could provide valuable models for educators throughout the United States.

Vocational programs also can help familiarize students with the kinds of technology they are likely to use in the workplace. Several "technology literacy" programs have been developed in recent years. Some use mobile training centers equipped with small replicas of advanced manufacturing technology and with industrial simulators; one example, the Advanced Center for Technology Training, is discussed in chapter 7. Computer-based learning can also help familiarize students with rapidly changing technology. For example, several companies, vocational schools, and other service providers in the Cincinnati area have developed an interactive video disk training program in machine tool and fabrication skills.<sup>53</sup>

Some public schools are beginning to offer technology familiarization courses to younger students. With funding from the Michigan Department of Education and the Federal Job Training Partnership Act, the Jackson, Michigan school district is orienting at-risk youth in middle school to manufacturing technology. Short summer courses on technology applications give students and teachers a "taste" of what skills and knowledge are required to work in the growing number of advanced manufacturing plants located in the Jackson area.<sup>54</sup> In the past 2 years, about 100 14-year-olds, 50 teachers, 5 guidance counselors, and 12 principals have attended these courses.

Vocational education might have greater impact if students knew more about what jobs were available in their local labor markets. Now, students graduate with little job placement help from the school.

As a practical matter, greater job search assistance as well as the other reforms outlined above would require more extensive employer involvement in the

schools. For example, cooperative education, which includes periods of classroom instruction and paid or unpaid work, could be used much more extensively and effectively. Currently, less than 3 percent of all high school students participate in cooperative education.<sup>55</sup>

Critics contend that time spent in cooperative education jobs is often wasted, as students lose valuable school time only to learn narrow, job-specific skills. This problem can be eased by placing the students in a series of jobs, rather than a single position. But the real key is a commitment by both the employer and the teacher to make sure that the student learns the broader principles behind particular tasks while working.

Another avenue for greater collaboration between employers and high schools, paid or unpaid internship, is available only in a few locations. One successful experiment in New York City paired selected students with business executives in a semester-long, full-time work experience taking the place of coursework. Like other successful internship programs, this program bridged the gap between work and school by employing teacher/coordinators, who supervised work placements and organized seminars and projects that related students' work experiences to academic subjects.<sup>56</sup>

Yet another approach is being tried by the Chamber of Commerce and the local school district in Fort Worth, Texas. In the project's initial phase, local employers, supervisors, and workers were surveyed about the skills needed in their positions (e.g., reading, computer literacy, math, communications, problem solving) and the required proficiency level (from "rudimentary" to "adept"). They were also asked to predict what those skills and proficiencies would be 5 years from now and a decade from now.<sup>57</sup> This information is currently being inte-

<sup>53</sup>An organization, the Greater Cincinnati Industrial Training Corp., was set up to develop and market this curriculum. Part of the startup funds for the courseware was provided by the U.S. Department of Labor.

<sup>54</sup>Bob Carlton and Allaire George, Jackson County Community College, Jackson, MI, personal communication, June 26, 1990.

<sup>55</sup>William T. Grant Foundation, Commission on Work, Family and Citizenship, *Op. cit.*, footnote 43, p. 42.

<sup>56</sup>*Ibid.*, p. 43.

<sup>57</sup>Presentation of Stefsen Palko before the Secretary's Commission on Achieving Necessary Skills (SCANS), May 18, 1990. SCANS, established by Labor Secretary Elizabeth Dole in the Spring of 1990, has a similar mission at the national level as the Fort Worth project has locally. It is charged with developing national competency guidelines that reflect work readiness to aid in the development of curricula for schools and training programs at the State and local levels.

grated into a new school curriculum, which will be tested in the fall of 1990.<sup>58</sup>

Finally, Jobs for America's Graduates, a private initiative, has brought the business community and schools together to provide realistic employment counseling, job placement, and follow-up support groups. The program, based on a similar effort in Delaware, is aimed at all seniors not bound for college and was operating in 16 States in 1990. Although placement rates among the 292 participating schools vary from 48 to 89 percent, depending on local labor market conditions, the programs are finding other "positive outcomes," such as post-secondary education and military service, for high school graduates.<sup>59</sup>

The 101st Congress is considering legislation to initiate some of the reforms outlined above through the reauthorization of the Carl D. Perkins Vocational Education Act,<sup>60</sup> the major Federal program supporting State and local vocational education. As this report went to press, a House-Senate conference committee had just completed action to resolve differences between House and Senate passed bills.<sup>61</sup> The bill reported by the conference committee, the proposed Carl D. Perkins Vocational and Applied Technical Education Act Amendments of 1990, emphasizes support for curricula that integrate vocational and academic methodologies, and that provide a coherent course sequence through which academic and occupational skills could be measured. Among many other provisions, the bill also would authorize support for tech-prep education programs that encompass the 2 years of secondary school preceding graduation with 2-year post-secondary or apprenticeship programs. It also would authorize, as discussed in chapter 2, business-labor-education partnerships for training.

Although this bill, if enacted, should help bring vocational education closer to emerging workplace needs, it cannot accomplish all of the changes

needed. First, Federal funding accounts for less than 10 percent of all support for vocational education; thus the actions of the States and local school districts are crucial. Second, Federal funds are targeted mostly for schools, not employers. The links between vocational education and the world of work can become stronger only with active, ongoing employer commitment. The new bill encourages, but cannot guarantee, more active involvement.

### *Apprenticeship: The Past As Prologue?*

Although the U.S. apprenticeship system has declined over the past two decades, there is growing interest in revitalizing and expanding it. As recent research into learning theory suggests, the apprenticeship model, combining theoretical classroom instruction with hands-on practice and skill-building, is a very effective method of developing the ability to think and learn as jobs and technology change.<sup>62</sup>

Proponents of apprenticeship note that it could help address some of the challenges raised by the Hudson Institute's *Workforce 2000* report:

1. rising skill requirements in many occupations;
2. a shrinking supply of younger workers;
3. increased training needs in the service sector, where job growth will predominate and productivity lags; and
4. the need for more systematic training in smaller firms, where most of the employment growth in the service sector will occur.<sup>63</sup>

Nevertheless, attempts to expand apprenticeship face big barriers. Currently, apprenticeship plays a very small role in training of U.S. workers. Between 1970 and 1987, apprentices in federally registered programs fell from the already small proportion of 0.3 percent of the U.S. civilian workforce to only 0.16 percent.<sup>64</sup> Formal apprenticeship does little for

<sup>58</sup>"Ft. Worth Businesses, Schools Join to Develop Work-Readiness Curriculum," *Employment and Training Reporter*, June 20, 1990, p. 939.

<sup>59</sup>Educational Testing Service, *op. cit.*, footnote 32, p. 25.

<sup>60</sup>Bills included H.R. 7, as passed by the House, and S. 1109 as passed by the Senate.

<sup>61</sup>The conference report on H.R. 7 was published in the *Congressional Record*, Aug. 2, 1990, pp. H6336-H6382.

<sup>62</sup>Resnick, *op. cit.*, footnote 48, p. 16.

<sup>63</sup>U.S. Department of Labor, Employment & Training Administration, "Apprenticeship 2000 Issue Paper and Initiative; Notice and Request for Comments," *Federal Register*, Dec. 2, 1987, p. 45905.

<sup>64</sup>U.S. Department of Labor, *Work-Based Learning: Training America's Workers* (Washington, DC: U.S. Government Printing Office, 1989), p. 8.

the average high school graduate—the median age of U.S. apprentices is 25.<sup>65</sup> By contrast, apprentices make up 6 percent of the labor force in West Germany (see ch. 3), where apprenticeship is the major vehicle for helping young people aged 16 to 19 move from school to work.<sup>66</sup>

To be registered with either the Federal Bureau of Apprenticeship and Training (BAT) or a State Apprenticeship Council (SAC), apprenticeship programs may be sponsored unilaterally by a single employer or by a group of employers (with no union involvement), or jointly by a single employer with a union or by a group of employers with a union.<sup>67</sup> In addition to registered programs, some employers and professional associations operate formal apprenticeships that are not registered. It is estimated that, in addition to the 300,000 apprentices now enrolled in federally registered programs, there are about 100,000 more in nonregistered programs.<sup>68</sup>

Although 85 percent of the more than 40,000 federally registered apprenticeship programs are operated unilaterally by employers, most of these are quite small, offering only one or two training slots. By contrast, over half of all U.S. apprentices work in the unionized construction industry and another 20 percent are employed in unionized manufacturing.<sup>69</sup>

The recent decline in apprenticeship parallels the falling rates of unionization in construction and manufacturing. Although there is no legal barrier to

the creation of nonunion apprenticeship programs, there is a practical one—financing. Apprentices in the United States typically attend evening classes two or three times per week, receive on-the-job instruction, and take tests at regular intervals over a 3-year period.<sup>70</sup> To support these costs, the firm or industry must, in effect, tax itself. In unionized companies, collective bargaining provides a mechanism for collecting the fee. Without unions, industry associations must solicit voluntary contributions from member firms; a single firm acting alone may be unable to support such extensive training.<sup>71</sup>

Sustaining apprenticeship programs is particularly difficult in the manufacturing sector. Although manufacturing and construction workers are equally unionized (unions represent about 22 percent of workers in both industries)<sup>72</sup>, industry associations in manufacturing are weaker and less likely to support training.<sup>73</sup> With neither union pressure nor broader support from a trade association, many nonunion manufacturers, including Cincinnati Milicron and Bell & Howell dropped their formal apprenticeship programs as part of broader cost-cutting efforts in the recessionary late 1970s and early 1980s.<sup>74</sup> Although unionized companies such as the “Big 3” U.S. auto manufacturers did maintain their programs during this difficult period, they greatly reduced the number of trainees. Today, U.S. automakers have shortages of skilled craft workers.

<sup>65</sup>Stephen M. Hills and Beatrice G. Reubens, “Youth Employment in the United States,” in Beatrice G. Reubens (ed.) *Youth at Work: An International Survey* (Totowa, NJ: Rowan and Allenheld, 1983), p. 273.

<sup>66</sup>Nick Kolb, Bureau of Apprenticeship and Training, personal communication, NOV. 15, 1988.

<sup>67</sup>Robert W. Glover, “Apprenticeship: A Route to the High-Paying Skilled Trades for Women?” Sharon L. Harlan and Ronnie J. Steinberg (eds.) *Job Training For Women: The Promise and Limits of Public Policies* (Philadelphia, PA: Temple University Press, 1989), p. 272.

<sup>68</sup>Robert Glover, Senior Research Associate, Center for the Study of Human Resources, the University of Texas at Austin, personal communication July 1990.

<sup>69</sup>Glover, 1989, op. cit., footnote 67, p. 272.

<sup>70</sup>The average cost for one apprentice to attend evening classes in the sheet metal industry are estimated to be about \$2,500 per year—David Harrington, Sheet Metal and Air Conditioning Industry, National Training Fund, personal communication June 27, 1990. One rough estimate of employers' and unions' total annual investment in apprenticeship, including wages, is \$8 billion to \$10 billion—Roberts T. Jones, Assistant Secretary of Labor, testimony in Hearings before the Committee on Appropriations, U.S. House of Representatives, Thursday, Mar. 9, 1989 (Washington DC: U.S. Government Printing Office, 1989), p. 559.

<sup>71</sup>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.

<sup>72</sup>“Union Membership Down to 16.4 Percent of Workers in ‘89,” *Daily Labor Report*, No. 27 (Washington DC: Bureau of National Affairs, Inc., Feb. 8, 1990), p. 1.

<sup>73</sup>Glover, 1988, op. cit., footnote 71, p. 21.

<sup>74</sup>James W., Corporate Director, Personnel Development/Compensation/Bends, Cincinnati Milicron, personal communication, May 4, 1989.

<sup>75</sup>Don Frey, former Chief Executive Officer, Bell & Howell, personal communication, Apr. 12, 1989.

## Joint Apprenticeship Programs

In construction, apprentices are usually new hires (often with some work experience and/or college), while in manufacturing, apprenticeships are allocated to employed workers on the basis of seniority and aptitude tests. In both cases, demand for apprenticeship slots exceeds supply, and, in some trades, there are commonly four applicants to every one apprentice accepted.<sup>76</sup> Currently, about 20 percent of all apprentices are minorities, while 7 percent are female.<sup>77</sup> Unless the limited number of apprentice positions expands, it is unlikely that apprenticeship will become an important vehicle for moving women and minorities into high-paying jobs in the near future.

Apprenticeship training trust funds originated in local contracts covering the mechanical and electrical trades within the construction industry following World War II.<sup>78</sup> These local funds are overseen by Joint Apprenticeship Training Committees (JATCs). As a condition of receiving training from union-negotiated funds, apprentices must agree that they will not work for a nonunion contractor for a certain period of years. Administrators of JATCs have successfully sued journeyman who have taken such action, winning back the training costs.

In the mid-1950's, unions and employer associations began establishing national training trust funds, overseen by national joint committees, to support their local apprenticeship programs. These national funds work in concert with local JATCs, which actually deliver the training. The national committees focus on making training more portable throughout the Nation by certifying journeymen as training instructors, purchasing training equipment at bulk rates, and developing standard curricula for the industry, while the local JATCs oversee local programs and select the apprentices.<sup>79</sup> For example, the National Training Fund (NTF) of the Sheet Metal and Air Conditioning Industry develops courses on video disk, providing them free to the



Photo credit: National Training Fund, Sheet Metal and Air Conditioning Industry

**Apprenticeship training provides long-term career benefits for young people. Here, an apprentice sheet metal worker learns on the job by working with a master craftsman.**

local JATC's, and also uses mobile trailers to teach welding techniques near major construction sites.

Among the largest national funds, the NTF, had a 1987 annual budget of \$5.2 million. These funds were contributed by employers; the national union (Sheet Metal Workers International Association) requires each local contract to include a clause requiring a contribution to the NTF of \$0.07 per hour worked by each journeyman.<sup>80</sup> The National Ironworkers and Employers Apprenticeship Training and Journeyman Upgrading Fund is less well-funded; Local contracts may, but are not required to, include contributions to the fund of \$0.02 per hour worked.<sup>81</sup>

Today, joint apprenticeship trust funds in the construction industry control about \$500 million annually. These funds are used not only to train some 200,000 apprentices, but also to upgrade the skills of journeymen and to train apprentice instructors. For example, the United Association of Plumbers and

<sup>76</sup>Glover, 1989, op. cit., footnote 67, p. 286.

<sup>77</sup>Calculation from data supplied by the Bureau of Apprenticeship and Training (AMS Report 001, Mar. 30, 1989).

<sup>78</sup>Glover, 1988, op. cit., footnote 71, p. 22.

<sup>79</sup>Ken Edwards, International Brotherhood of Electrical Workers (IBEW), phone interview, Feb. 23, 1989.

<sup>80</sup>National Training Fund Annual Report 1988 (Alexandria, VA: National Training Fund, Sheet Metal and Air Conditioning Industry); and personal communication with Gerald Olejniczak, Assistant Administrator, NTF.

<sup>81</sup>Ray Robertson, International Association Of Bridge, Structural and Ornamental Iron Workers, personal communication, Mar. 15, 1989.

Pipefitters, which has about 24,000 apprentices in full-time training, provided short upgrade courses to about 80,000 journeyman in 1987.<sup>82</sup>

Journeyman upgrading is increasingly important as construction technology changes: The joint program in the electrical industry provides fiber optics training to journeymen, while the sheet metal industry's NTF has provided courses in such diverse skills as solar energy installation and architectural sheet metal skills for historic renovation.<sup>83</sup> The Laborers-Associated General Contractors of America (AGC) Education and Training Fund, which celebrated its 20th anniversary in 1989, provides journeyman upgrade training in leadership skills, hazardous waste clean-up, and asbestos abatement, with financial support from the Environmental Protection Agency.<sup>84</sup>

#### Legal Framework

The legal framework for apprenticeship in the U.S. has remained largely unchanged since 1937, when the National Apprenticeship Act chartered the creation of BAT within the Labor Department. BAT was given four missions:

1. to formulate labor standards to safeguard the welfare of apprentices;
2. to extend application of these standards in apprentice contracts;
3. to bring together employers and labor with the goal of developing apprenticeship programs; and
4. to cooperate with State agencies engaged in developing standards for apprenticeship.<sup>85</sup>

Within this framework, a patchwork system involving BAT and some States has developed. At the national level, BAT promotes apprenticeship, formalizes national training standards developed by industry associations and unions, registers and

services approved apprenticeship programs, and certifies graduate journeymen. Twenty seven States, the District of Columbia, Puerto Rico and the Virgin Islands have State Apprenticeship Councils (SACS) established by State laws and formally recognized by BAT. SACS perform many of the same functions as BAT, which has offices and staff in all States. Most SAC and BAT personnel agree that promotion should be left to BAT, while the SAC concentrates on registering programs and both entities develop and service programs. However, this division of responsibilities is rarely spelled out in a formal agreement, causing confusion and sometimes conflict between the agencies.<sup>86</sup>

On successful completion of a registered apprenticeship program, the graduate journeyman may receive a certificate of completion from BAT or the SAC. As discussed above, manufacturers typically operate individual programs, rather than working through industry associations to establish uniform national training curricula approved by BAT. This decreases the portability of the journeyman certificate, because a certificate granted by one State may not be accepted by employers in another State.<sup>87</sup>

As part of a broader effort to enhance traditional apprenticeship, BAT is reviewing and revising its policies related to Federal and State roles in apprenticeship. However, any attempt to increase Federal control will be limited by the fact that the 27 SAC States contribute far more in support of apprenticeship than does the Federal Government. During the 1986-87 fiscal year, SACS spent \$15.25 million on apprenticeship administration, while BAT spent only \$7.75 million in support of State programs in both BAT and SAC States.<sup>88</sup> (The remainder of BAT's \$13 million budget for that year was spent on national and regional operations.) Perhaps because they are willing to financially support greater

<sup>82</sup>Glover, 1988, op. cit., footnote 71, p.18.

<sup>83</sup>Nell P. Eurich, *Learning to Work: Resources for Adult Learning* (The Carnegie Foundation for the Advancement of Teaching, draft manuscript forthcoming in 1990), p. 180.

<sup>84</sup>*Training Update*, n.10 (December 1989) (Pomfret Center, CT: Laborers-AGC Education and Training Fund, 1989), pp.3,5.

<sup>85</sup>William G. Whittaker, *Apprenticeship Training in America; the "Fit-In" (1937-1987)* (Congressional Research Service Report 87-902 E, 1987), p. CRS-4.

<sup>86</sup>Kenneth W. Tolo, Robert W. Glover and John A. Gronouski (eds.), *Coordination of State and Federal Apprenticeship Administration*, A report by the Apprenticeship Project, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin (Austin, TX: Board of Regents, the University of Texas, 1980), p. xiii.

<sup>87</sup>U.S. Department of Labor, Employment and Training Administration, "Apprenticeship 2000: Focus Paper on Support Activities and Linkages," *Federal Register*, Jan. 25, 1989, p. 3758.

<sup>88</sup>Meridian Corp., "Apprenticeship 2000: Project 3C: Analysis of State Roles and Responsibilities," reported submitted to U.S. Department of Labor, Sept. 30, 1988, p. 2.

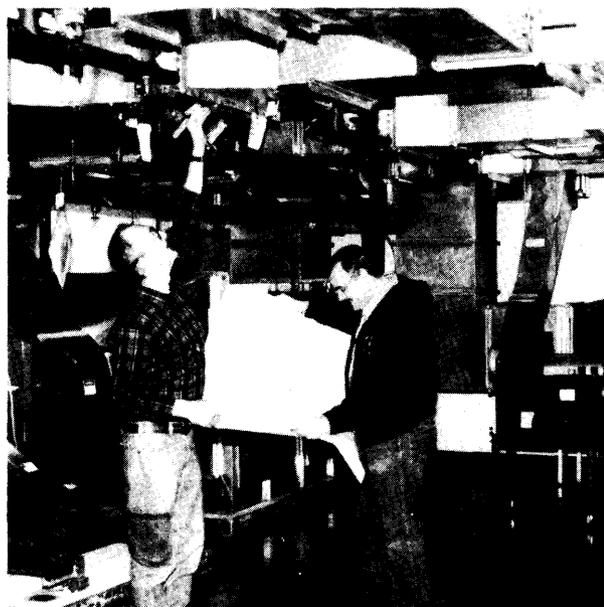
outreach efforts, the SAC States have about twice as much apprenticeship activity, (with an average 1,100 registered programs and 6,200 apprentices per State) as the BAT States, which have an average of 500 registered programs and 3,300 apprentices per State.<sup>89</sup>

### Quality of Apprenticeship

Despite the patchwork legal framework, the quality of current, legally registered apprenticeship programs appears quite high, especially from the worker's perspective. Workers who have completed apprenticeship are generally well satisfied with their training, usually continue working at their crafts, and often move into supervisory positions.<sup>90</sup>

One recent study compared matched samples of 1972 high school graduates who either entered apprenticeships, received other formal on-the-job training from their employer, or received no training. Those who had completed apprenticeships earned significantly more (\$4,700 annually, for males) than those who received no formal training, while those who had received other types of formal on-the-job training from their employer earned more, but not as much more (\$3,900 annually, for males).<sup>91</sup> As noted above, another recent study found that apprenticeship training was more likely to result in increased earnings with a subsequent employer than other forms of employer-provided training.<sup>92</sup> This is because apprenticeship, especially in the construction trades, leads to a widely recognized, portable journeyman's certificate. Like formal education, apprenticeship offers a key benefit to workers—a recognized credential.

Of course, not all workers successfully complete their apprenticeships. A problem that has affected U.S. apprenticeship programs since the 1940s is a high dropout rate, currently estimated to be over 50 percent.<sup>93</sup> Although high, these dropout rates are moderate compared with those from school-based vocational education: Only 19 percent of high



*Photo credit: National Training Fund, Sheet Metal and Air Conditioning Industry*

**As technology advances, journeyman upgrading courses have become an important component of joint union-management apprenticeship training programs.**

school graduates who enter community colleges complete a certificate or degree within 4 years of their high school graduation.<sup>94</sup>

Although hard evidence is lacking, some trends point toward improved quality in apprenticeship training. For example, a growing number of joint apprenticeship programs, including those in sheet metal, masonry, and iron work, are collaborating with colleges and universities to provide in-depth technical and pedagogical instruction to apprenticeship instructors.<sup>95</sup> In recent years, joint programs in carpentry, bricklaying, insulation, and painting have updated their curricula and developed new national standards for apprenticeship training. And, as discussed above, journeyman upgrade training to keep workers abreast of new technology is increasing.

<sup>89</sup>ibid., p. 1.

<sup>90</sup>Glover, 1988, op. cit., footnote 71, p. 12.

<sup>91</sup>Westat, Inc., "Analysis of Apprenticeship Training from the National Longitudinal Study of the High School Class of 1972" (Rockville, MD: March 1989), p. 4-1.

<sup>92</sup>Lynch, op. cit., footnote 10.

<sup>93</sup>Glover, 1988, op. cit., footnote 71, p. 17.

<sup>94</sup>U.S. Department of Education, National Assessment of Vocational Education, op. cit., footnote 44, 1989, p. xvii.

<sup>95</sup>Glover, 1988, op. cit., footnote 71, p. 17.

## Potential for Expansion

In 1987, the U.S. Department of Labor launched a two-pronged effort, "Apprenticeship 2000" which is aimed at both strengthening traditional apprenticeship and expanding the apprenticeship concept (formal and on-the-job training leading to a credential) beyond its present concentration in the construction trades. While BAT found considerable support for expansion among business, labor, academia, and State and local officials, initial discussions **also** revealed several barriers. These include:

- cost, especially for small employers;
- perception of union control;
- fear of "pirating" of apprentices;
- lack of support structure (i.e., a joint apprenticeship committee) for nonunion employers, especially small employers.<sup>96</sup>

To overcome these barriers, the agency is studying a number of alternatives for strengthening traditional apprenticeship, including expanded promotion of and technical assistance for apprenticeship by BAT and the States; use of competency testing or other devices to make apprenticeship certificates more portable across States; approaches for replicating the joint apprenticeship committee model in nonunion settings; loans to employers; subsidizing the costs of related instruction (this is currently done by the States); improving linkages between apprenticeship programs and educational institutions, JTPA, the Job Corps, and the Employment Service; and improving consistency in State implementation of apprenticeship.<sup>97</sup>

BAT has too few resources to implement these alternatives. The agency for some time has not been able to service all employers who have or wish to have apprenticeship programs. For example, in the mid-1970's, in Utah, BAT serviced the larger joint union-management apprenticeship programs while the SAC serviced smaller, nonunion programs. Neither agency had the resources to develop apprenticeship programs in the rural, northern part of the State.<sup>98</sup>

This situation has worsened. Despite inflation, Congressional appropriations for BAT have remained almost constant, growing only from \$13.86 million in fiscal year 1978 to \$14.02 million in fiscal year 1990. BAT's real spending ability in constant (1982) dollars has fallen by more than one half since its high point in 1978. This is reflected in the agency's staffing, which has fallen from its 1978 level of 495 people to only 247 people.<sup>99</sup> With fewer staff and almost no travel budget, BAT has made fewer visits to potential sponsors of apprenticeship programs and fewer onsite reviews of existing programs.<sup>100</sup> These reductions in outreach could feed the widespread perception that BAT services only union apprenticeship programs, thus discouraging more nonunion employers from participating.

Despite the cuts in funding for its traditional mission of strengthening and expanding traditional apprenticeship, BAT has received a share of JTPA research and development funding in addition to its basic budget. These funds are earmarked for the second part of the Apprenticeship 2000 Initiative developing new approaches to apprentice training. In mid-1989, the agency granted \$1.8 million of these funds to three organizations, the 70,001 Training and Employment Institute, the National Alliance of Business, and the AFL-CIO's Human Resource Development Institute, to research and develop innovative apprenticeship programs.<sup>101</sup> The first organization is working with small businesses in Indiana to adapt the apprenticeship concept to training of child care workers; the second is developing structured on-the-job training for bank tellers in conjunction with the American Banking Association, and the third is developing upgrade training for aircraft manufacturing and health care workers in the State of Washington.

In early 1990, BAT was made part of the new Office of Work Based Learning (OWBL) within the Department of Labor. OWBL also has program responsibility for retraining displaced workers and trade adjustment assistance. The new office is evaluating proposals for demonstration programs

<sup>96</sup>U.S. Department of Labor, *Employment & Training Administration*, "Apprenticeship 2000: Focus Paper on Support Activities and Linkages," *Federal Register*, Jan. 25, 1989, pp. 3757-3758.

<sup>97</sup>*Ibid.*

<sup>98</sup>Gary B. Hansen and Mark H. Skidmore, "Closing the Rural Employment and Training Gap: A Utah Experiment" *Thrust*, April 1985, p. 52.

<sup>99</sup>Information supplied by the U.S. Department of Labor, Jan. 6, 1990.

<sup>100</sup>Roberts T. Jones, testimony, op. cit., footnote 70.

<sup>101</sup>Manpower Information, Inc., *Employment and Training Reporter*, vol. 20, No. 46, p. 1239.

enhancing school-to-work transitions for young people. A total of about \$3.5 million will be given out during 1990 to support these research and demonstration programs.<sup>102</sup>

If successful, these new demonstration projects, as well as those described above, could help spread concepts of apprenticeship. In the American context, these concepts may have more potential than traditional, legally-registered apprenticeship. An effort to expand legally registered apprenticeship programs, the National Industry Promotion Program, launched in 1976, had only limited impact. All of the industry associations ceased their national apprenticeship activities when the flow of Federal funds was stopped in 1979. At the local level, a few programs involving unions such as the fire fighting apprenticeship, continued, but those in nonunion industries floundered. For example, in the auto repair industry, the lack of industry association support meant that there were never a substantial number of apprentice auto mechanics.<sup>103</sup> Without strong trade associations or another avenue of collaboration, few firms continued comprehensive, structured, work-based learning.

By contrast, General Motors has developed a highly successful training program modelled on the apprenticeship concept. (The program is not registered.) Each student entering the program is sponsored by a GM dealership and is paid a competitive training wage during the on-the-job training portion of the 2-year program. Launched in 1980, this program provides classroom training through local community colleges. Approximately 2,400 GM repair technicians have completed this program since its inception. Although graduates have a guaranteed job with the sponsoring GM dealership, an increasing number are going to work for other auto repair shops as the quality of the training becomes known.<sup>104</sup> As discussed in chapter 5, other

auto manufacturers are now developing automotive technician training programs similar to GM's.

Whether legally registered or not, most U.S. apprenticeships are filled by young adults, rather than teenagers. This is primarily due to the limited scope of apprenticeship-with demand for training slots exceeding supply, apprenticeship sponsors can choose carefully, looking for prior work experience as evidence that a young adult will succeed in apprenticeship.<sup>105</sup> Nevertheless, successful School-to-Apprenticeship programs, linking high school vocational students with formal apprenticeships, do exist in a few locations. Expanding such programs would make an important contribution to improving the amount and quality of training for younger workers. In addition, school-based internships and nontraditional apprenticeships, such as those discussed in the vocational education section above, would greatly help young people make the transition from school to work.<sup>106</sup>

## JOINT UNION-MANAGEMENT TRAINING PROGRAMS

Many unionized workers receive transferable training and career counseling through contracts negotiated with their employers. Although unions represent a small and declining share of the labor force (from a peak of 35 percent of the workforce in 1954 to 16.4 percent in 1989),<sup>107</sup> their influence on workplace training has been disproportionately large. Some features of union-negotiated retraining programs for laid-off workers, such as income support while in training, advance notice of layoff, and remediation of basic skills, have been adopted into Federal programs<sup>108</sup> for workers laid off by non-union as well as union firms. But unions also influence training programs for employed workers.

<sup>102</sup>Irene Lynn, Office of Work-Based Learning, U.S. Department Of Labor, personal communication, August 1990.

<sup>103</sup>Glover, 1988, op. cit., footnote 71, p. 28.

<sup>104</sup>Jim Choulochas, General Motors, personal communication, June 1990.

<sup>105</sup>Fedrau & Associates, 'Linking the Secondary Vocational Education System with Apprenticeship,' paper submitted to the Bureau of Apprenticeship and Training, U.S. Department of Labor, Oct. 17, 1988, p. 29.

<sup>106</sup>For a comprehensive discussion of school-based apprenticeship models, see Stephen F. Hamilton, *Apprenticeship for Adulthood* (New York, NY: Macmillan, Inc., 1990), pp. 158-185.

<sup>107</sup>'Union Membership Down to 16.4 percent of Workers in 89,' *Daily Labor Report*, op. cit., footnote 72, p. 1.

<sup>108</sup>Public Law 100-379, the Worker Adjustment and Retraining Notification Act requires all employers of 100 or more worker to give advance notice of layoffs and Public Law 100-418, the Omnibus Trade and Competitiveness Act of 1988 provides funds for income support and mediation of basic skills during retraining of workers served by the Federal JTFI Title III displaced worker program.

For a variety of reasons, large nonunion employers frequently match or better the wages, benefits (including training programs) and working conditions negotiated in unionized companies.<sup>109</sup> Perhaps the most notable recent example was the United Auto Workers' (UAW attempt to organize Nissan's Smyrna, Tennessee auto plant in 1989. According to one observer, the extensive cross-training and expanded job responsibilities given to workers at the plant was the key factor in the union's defeat.<sup>110</sup> In addition, Nissan had maintained full employment during a sales slump; employment security is a key UAW goal, but union-negotiated protections with the 'big three' U.S. automakers allow layoffs when sales fall. Like Nissan, a growing number of nonunion employers may begin to provide training packages similar to, or even better than, those offered through the large joint union-management programs discussed below.

Since 1982, contract negotiations in the auto and telecommunications industries have led to the establishment of five large, joint, union-management training corporations. They are: 1) The United Auto Workers (UAW)-Ford National Educational Development and Training Center; 2) The UAW-GM Human Resource Center; 3) The Communications Workers of America (CWA)-U.S. WEST Communications Training Partnerships, Inc.; 4) The Alliance for Employee Growth and Development (a joint venture of AT&T, CWA, and the International Brotherhood of Electrical Workers); and 5) The UAW-Chrysler National Training Center. In early 1989, the United Steel Workers of America (USWA) ratified contracts with several major steel companies which will create similar corporations.

As shown in table 8-1, in 1989, these five entities offered training to a total of 709,000 workers and had annual budgets totaling about \$324 million. On average, \$460 is available per worker per year. However, most workers do not take advantage of the training, and much more than the average is available in some of the companies.

Three of the joint training programs (UAW-Ford, UAW-GM, and the Alliance) were born in times of crisis in response to mass layoffs.<sup>111</sup> This initial



Photo credit: The UAW-Chrysler National Training Center

Joint union-management training programs offer technical preparation courses in auto plants after hours.

focus on retraining laid off workers led all of the joint training programs to emphasize broad, transferable skills and career counseling. Over the past few years, most of the five corporations have targeted the majority of their funds at upgrading the skills of employed workers; however, the focus on transferable skills has not changed. Courses are typically offered outside of regular working hours at the plant site. They include basic skills, computer literacy, career and educational counseling, financial management, and preretirement planning.

Although the new joint union-management corporations have captured the public eye, some unions and their employers have developed successful joint training efforts without creating separate training entities. Two examples are the joint training programs developed by the Communications Workers of America (CWA) and Pacific Northwest Bell, which have enhanced both workers' employment security and company revenues, and the joint "Career Ladders" program developed by Hospital Workers, Local 767 of the Service Employees International Union and Cape Cod hospital (see boxes 8-B and 8-C). There are many other examples of local unions and employers throughout the United States developing a variety of training programs

<sup>109</sup>Fred K. Foulkes, "Large Nonunionized Employers," Jack Stieber et al. (eds.), *U.S. Industrial Relations 1950-1980: A Critical Assessment* (Madison, WI: Industrial Relations Research Association, 1981), p. 156.

<sup>110</sup>"Training Kept UAW Out of Nissan," *American Machinist*, October 1989, p. 37.

<sup>111</sup>These programs are discussed in greater detail in Margaret Hilton, "The Role of Labor Unions in Training of Employed Workers," Working Paper #2 OTA Worker Training Project, May 28, 1989.

Table 8-I-Joint Union-Management Training Corporations

Name (year created)	1989 budget (in millions)	Number of workers covered	Amount potentially available per worker in 1989
U/W-Ford National Education, Development and Training Corporation (1982) . . . . .	\$63 <sup>a</sup>	105,000	\$600
UAW-GM Human Resource Center (1982) . . . . .	\$200 <sup>b</sup>	360,000	\$556
PATHWAYS <sup>c</sup> (1984) . . . . .	\$5	40,000	\$125
UAW-Chrysler National Training Center (1985) . . . . .	\$45	79,000	\$570
Alliance for Employee Development, Inc. <sup>d</sup> (1986) . . . . .	\$11.3	125,000	\$90
<b>Total</b> . . . . .	<b>\$324.3</b>	<b>709,000</b>	<b>\$457.40</b>

NOTE: Contract negotiations during 1989 led to creation of three new joint union-management training programs: 1) The United Steel Workers of America's Career Development Institute, with Bethlehem, Armco, Inland, and LTV Steel companies, has an annual budget of \$10 million to serve about 50,000 steelworkers, or \$200 per worker per year; 2) The CWA-BellSouth Corp.'s Employment Security PARTNERSHIP program is funded at \$130 per worker per year, starting in January, 1990; 3) The Aerospace Machinists Industrial Lodge 751 -Boeing Company's Quality Through Training program is funded at about \$12 million per year for 42,000 workers, or about \$286 per worker per year.

<sup>a</sup>Excludes local funds, which go directly to joint local Committees.

<sup>b</sup>Very decentralized. Total includes \$50 million which is allocated directly to local joint training committees.

<sup>c</sup>Joint venture of Communications Workers of America (CWA), International Brotherhood of Electrical Workers (IBEW), and U.S. WEST Communications.

<sup>d</sup>Joint venture of CWA, IBEW, and AT&T.

SOURCE: Office of Technology Assessment, 1990.

dealing with basic skills, health and safety, productivity, quality, and other common concerns.

Joint union-management training programs have the potential to broaden workers' access to training. For example, due to continuing layoffs of less senior employees, many union members are now middle-aged or older. In 1988, when workers between aged 45 and over made up 26 percent of the total labor force, they comprised 35 percent of workers represented by unions.<sup>112</sup> Although company-provided training might bypass these workers, the joint programs use techniques such as peer counseling, context-based basic skills courses, and onsite classes to encourage older workers' participation.

### *Relationship of Joint Programs to Company Training*

Most of the new joint training corporations are designed to supplement, not supplant, the parent corporation's regular, job-related training. Only at General Motors is the joint program viewed as a primary delivery mechanism for training of hourly workers, including job-related, on-hours training as well as more generic courses after hours.<sup>113</sup> (See ch. 4.)

In reality, however, all of the joint programs do have links with the corporate training system. For example, at Ford's Van Dyke plant, 14 UAW-represented workers sit on the 16-member technical training committee, which identifies on-hours training needs for the hourly workforce.<sup>114</sup>

As at Ford, joint training committees in Chrysler plants work closely with corporate trainers. The committee at Detroit Axle-a plant that had been threatened with closure-helped the company successfully install new technology. As part of a larger program to maintain competitiveness, Chrysler decided in 1987 to add truck front-drive axle production to the plant, which had previously produced rear axles only. The local joint training committee designed an 8-week training program in operation of newly purchased Okuma CNC machine tools, including four weeks in class with four weeks of hands-on experience operating the machines using dummy parts. In total, 37 new jobs involving computerized machining of axle parts were created. Although obviously aimed at job-specific skills, this training was financed with joint funds and conducted on company time.<sup>115</sup>

<sup>112</sup> "Union Membership Falls to 16.8 Percent in 1988," *Daily Labor Report*, op. cit., footnote 72 (table 1), p. B-14.

<sup>113</sup> Paul Delker, "Worker Training: A Study of Nine Companies," report submitted to OTA under contract #H3-6785, September 1988, p. 110.

<sup>114</sup> Beverly Geber, "The Resurrection of Ford," *Training*, vol. 26, No. 4, April 1989, p. 26.

<sup>115</sup> "Trainees Fill 37 New Jobs," *NTC Newslines*, vol. 1, No. 1, 1987, p. 4.

### **Box 8-B-CWA-Pacific Northwest Bell**

Pacific Northwest Bell (PNB) was one of three Bell Operating Companies that were combined to form U.S. WEST Corp. when AT&T was split up in 1984. Until 1987, when it was merged into U.S. WEST Communications, the company operated somewhat independently. Headquartered in Seattle, PNB provided local and long-distance telephone service in the States of Washington and Oregon. In 1987, the company employed 14,500 workers, including about 10,000 represented by the Communications Workers of America (CWA) and the International Brotherhood of Electrical Workers (IBEW).

According to PNB's Director of Employee Relations, "the company and the unions are constantly looking for common ground and common issues that will give us an umbrella under which joint activities can take place."<sup>1</sup> This approach to labor relations evolved slowly, beginning in 1980, when CWA proposed a joint union-management Quality of Worklife (QWL) process during national contract negotiations with AT&T. Based on that contract language, which applied to the whole Bell System, the company and union agreed to jointly train labor and management facilitators who would lead shop-floor committees in addressing issues of concern to the union, management, or both.

In 1984, PNB and the union expanded the QWL process by appointing three organizational change consultants (OCCs), reporting to management, CWA, and IBEW respectively. In 1985, this team merged with the company's Organizational Development Group and received a \$50,000 grant from the Federal Mediation & Conciliation Service (FMCS) to develop and promote innovative approaches to labor-management cooperation.

The OCC's were soon called in after management had tried and failed four times to teach Installation and Maintenance (I&M) technicians, how much they could charge for work on equipment and wiring not owned by PNB. The company, seeing little revenue generated by the labor hours spent, had stopped marketing the technicians' services, and layoffs appeared likely. The company's concern was money; the union's concern jobs. A jointly developed training course, delivered by specially trained technicians to their peers throughout Washington and Oregon, helped meet both needs. One year after the training was delivered, a total of \$1.4 million had been billed for the technicians' work, and demand for their services had increased so much that surplus workers from other job titles were able to move into these jobs.<sup>2</sup>

As the OCC group worked with various union-management committees, other training programs were developed. For example, a survey showed that Systems Technicians, who work on computer-telephone hookups and other special systems, were unhappy with the quality of their training. A joint union-management team spent 4 months in 1985 developing a basic electronics course, which was subsequently delivered on company time to about 400 technicians and their supervisors at a Vocational Technical School outside Seattle. The total cost of the 3-week course, was about \$1.2 million. Another example: onsite classes offered by community colleges at worksites in Seattle, and Portland, beginning in 1986. Local union and management committees identified the need for courses in basic arithmetic, writing, computer programming, and electronics and arranged the logistics.<sup>3</sup>

Although the 1986 contract between PNB and CWA provided no money specifically for training, the commitment to Jointness has resulted in expenditures of large sums of money in addition to those described above. For example, a joint task force created in 1985 to deal with future surpluses of Central Office Technicians due to digitalization of central switching offices identified a broad need for career counseling and retraining of all workers to minimize future layoffs. To deal with this need, the joint task force helped local managers and CWA officers develop pilot education fairs in Yakima, Washington and Eugene, Oregon in early 1987. Representatives of local colleges as well as internal company and union training programs setup booths at the 1-day fairs. Attendance was so high and response so enthusiastic that the joint task force ultimately helped local joint committees in 25 cities create similar "Opportunity Expositions." The total cost to PNB was about \$50,000, in addition to lost wages for those workers who attended on company time. The successful creation and delivery of a wide range of training programs at PNB demonstrates that joint training can be one of many offshoots of a strong, cooperative, labor-management relationship.<sup>4</sup>

<sup>1</sup>"A Conversation with Arnold Manseth," *Labor Relations Today* (U.S. Department of Labor, Bureau Of Labor-Management Relations and Cooperative Programs), May-June 1987, vol. 2, No. 3.

<sup>2</sup>Margaret Hilton and Ronnie Straw, "Cooperative Training in Telecommunications: Case Studies," *Monthly Labor Review*, May 1987, p. 35.

<sup>3</sup>Ibid.

<sup>4</sup>Annie Hill, Chair, CWA-PNB Training Advisory Board, personal communication March 1988.

### **Box 8-C—SEIU-Cape Cod Hospital**

*The* Service Employees International Union (SEIU) represents about 875,000 service workers, the majority of whom work in public or private health care.<sup>1</sup> In 1979, the union received a \$300,000 grant from the U.S. Department of Labor's Bureau of Apprenticeship and Training (BAT) to determine the feasibility of applying apprenticeship to the health care industry. Later, with the assistance of two more BAT contracts, SEIU's national office developed a modified apprenticeship model, termed LEAD, or Lifelong Education and Development.

By 1984, the LEAD program included staff at both SEIU international headquarters in Washington, DC and in 11 regions of the country. Although staff were laid off when Federal funds were cut off the following year, several successful LEAD programs continue to operate at the local level. One such example is found at Cape Cod Hospital.

During 1981 contract negotiations, SEIU's national LEAD director helped Hospital Workers Local 767 win the broad outlines of a comprehensive upgrading program for its members. Local 767 represents all nonmanagement workers except Registered Nurses (RNs), or about 650 of the hospital's 1,100 employees. As called for in the contract, a Joint Career Development Committee was created. The group met weekly for over a year to negotiate on the qualifications required for every represented job, ranging from the lowest paid Housekeepers and Pot Washers to the highest paid Pharmacists.<sup>3</sup>

The result was a comprehensive joint training program, dubbed "Career Ladders," which has been continued and expanded during subsequent contract negotiations. A key element in the program is a Career Ladders booklet describing requirements for about 100 jobs and listing 6 in-house training programs and 12 traineeships available to meet those requirements. Normal attrition and turnover combined with continuous introduction of new technology creates a continuing demand for skilled workers at Cape Cod and other hospitals.

Under the Career Ladders program, workers know exactly what they must do in order to be promoted.<sup>4</sup> For example, an entry-level housekeeper knows that, to become a Unit Clerk s/he must complete training in Medical Terminology (offered at the hospital) and be able to type 35 words per minute. At least one worker has made this transition, involving an increase of three levels in pay grade, within 6 months.

Union and management agree that the Phlebotomy traineeship has been quite successful. The Phlebotomists, who draw blood, are in great demand, especially in the summer months, when tourists swell the population of Cape Cod and its hospital. In 1984, about 30 workers successfully completed training and were promoted to the Phlebotomist position. In early 1989, the Joint Career Development Committee agreed to offer new traineeships in Phlebotomy and the higher level job of Histology Technician.

In comparison with many other joint union-management training programs, the Cape Cod Hospital program is much more explicitly aimed at equal opportunity for minorities and women. From the vantage point of the Local President, the key benefit to the union members is that opportunities for training and promotions are now based on seniority, rather than being left to the discretion of management.

The hospital's Director of Labor Relations describes the program as "an employee benefit with significant benefit to the employer." The hospital does not provide its own formal training; all training of nonmanagement employees is done through Career Ladders.

The overall approach to training appears to benefit both union and management, but is difficult to transfer to new locations without the support of the national union and Federal funds.

<sup>1</sup>Jean Ross, SEIU, personal communication, November 1988.

<sup>2</sup>The initial contract was one of several "New Initiatives" contracts to labor unions and other organizations interested in developing apprenticeship programs. These funds were appropriated to the Department of Labor as discretionary funds under the Comprehensive Employment and Training Act (CETA), and channeled through BAT. In 1977, BAT disseminated about \$15 million of these funds for research, development, and demonstration projects related to apprenticeship. However, funds were cut back in 1978, and after 1980, there were almost no "New Initiatives" contracts and grants. SEIU was one of few organizations to receive more funds during the 1980s.

<sup>3</sup>Fred Bodensiek, "Union, Hospital Are Enthused With Success of Ladder Program," *Cape Cod Register*, June 23, 1983.

<sup>4</sup>The following discussion is based on February 1989 interviews with William Pastreich, President, Hospital Workers/SEIU Local 767; Theresa Belmont, Director of Labor Relations, Cape Cod Hospital; and Jeanne Savoy, SEIU Representative to Career Ladders Committee.

During 1987 and 1988, two divisions of AT&T (operator services and long-distance services) designated the Alliance as the "official response for career development needs." <sup>116</sup> In other words, these divisions of the company will not develop a separate package of career counseling for employees, but will rely on the Alliance to provide these services. It appears, then, that joint training programs *are* increasingly linked to the companies' strategic goals.

### *Mixed Quality of Training*

Joint union-management training programs are often quite decentralized. Typically, a corporate-level joint committee often supported by a staff, sets overall policies and funds development and delivery of some training courses, while more detailed funding and training decisions are made by joint training committees at the local level. In addition, many training decisions are made by the workers themselves who use employer-paid tuition assistance to take courses. A variety of public and private training consultants, as well as in-house trainers, are used within this decentralized structure.

One result is a wide range in the quality of training supported by joint union-management programs. As discussed in chapter 5, one unscrupulous training company attracted UAW members to its classes by offering free computer components, but providing little training. This happened early in the history of the UAW-GM joint Human Resources Center, a highly decentralized entity that sends about one-fourth of its \$200 million annual revenue stream directly to joint training committees in the plants. <sup>117</sup>

To improve quality, the joint training programs have tried to increase the expertise of local committees and at the same time provide career and educational counseling to help workers in their selection of educational providers. Today, each local joint UAW-GM joint training committee is staffed by full-time local joint training coordinators, who are trained by the Human Resource Center in development, design and evaluation of training. <sup>118</sup> UAW-Ford and UAW-Chrysler have hired full-time

career counselors to assist local joint committees with design of training and selection of training providers as well as to counsel individual workers. However, within the UAW programs, career and educational counseling remains strictly voluntary, and workers may sign up for courses without prior counseling.

The two joint training corporations negotiated by the Communications Workers of America (CWA) require career counseling. Workers must meet with a counselor and develop a career plan in order to be eligible for prepaid tuition. Courses must be related to the career plan in order to be eligible for assistance. Other rules apply as well. For example, CWA-U.S. WEST Communications will not pay for flying lessons as a hobby but will pay for ground school and instruction if it leads to a commercial pilot's license. <sup>119</sup>

### *Tuition Assistance*

Most of the joint programs offer workers tuition assistance to take courses on their own time. Such courses may be job-related, for personal development, or to prepare for new careers. <sup>120</sup> As shown in figure 8-2, use of tuition assistance grew as the programs have paid tuition assistance directly to schools, removed penalties for noncompletion of courses, and provided career and educational counseling. More recently, perhaps due to tax changes (see below) participation in some of the programs has dropped off. Nevertheless, a large fraction of each workforce has benefited, when cumulative enrollments over time are considered: At UAW-Ford, 27 percent of the workforce has taken accredited courses at one time or another since the program was instituted in 1984. At UAW-Chrysler, the comparable figure is 36 percent, including personal development courses. PATHWAYS enrolled 30 percent of its workforce in its first 3 years of providing tuition assistance. These programs are very beneficial to workers, because many enroll in courses leading to 2- and 4-year degrees-the formal, widely recognized credentials that are most likely to enhance their careers and earnings. Al-

<sup>116</sup>The Alliance: Annual Report (Somerset, NJ: The Alliance for Employee Growth & Development Inc., 1989), P. 8.

<sup>117</sup>Don Davis and Rich McMillan, Co-Directors, UAW-GM Human Resource Center, personal communication Apr. 27, 1989.

<sup>118</sup>Ibid.

<sup>119</sup>Herb Hackenburg, "Pathways' Presentation: It Sells Itself," *MB Times*, vol. 7, No. 15, July 29, 1987.

<sup>120</sup>The Alliance purchases most training for groups of workers, rather than relying on individual use of tuition assistance @ on Treinen, The Alliance, personal communication, Aug. 30, 1989).

though tuition assistance programs are expensive, they are much less costly than on-hours training, because the employer can avoid paying workers' salaries while in training.

As the joint programs were gathering momentum, tuition assistance benefits paid to workers for all types of courses—those related to their current jobs and those taken to prepare for new careers—were not taxed as income. As discussed above, this changed temporarily when Congress made tuition benefits for non-job-related courses taxable between December 21, 1988 and November 1989.<sup>121</sup> Although Congress restored the tax-exempt status of all tuition benefits retroactively to January 1, 1989, participation in the joint union-management programs fell during the long period of uncertainty (see figure 8-2). As discussed in chapter 2, making the tax exemption permanent would remove any tax impediments to worker participation in qualified tuition assistance programs, whether sponsored unilaterally by employers or jointly with unions.

### *Future Outlook*

*The future* prospects for joint union-management training appear bright. At General Motors and Ford, union and management have reaffirmed their commitment to the joint corporations through three rounds of collective bargaining, Chrysler and UAW renewed their commitment to joint training in 1988, and the CWA and AT&T agreed to continue the Alliance even before opening formal contract negotiations in 1989. Participation in voluntary training programs offered by the five corporations has dramatically increased since their inception, and each corporation has had to add staff to accommodate this growing demand. Cumulative enrollments in all types of training programs offered by each corporation range from 16 to over 50 percent of the eligible workforce.

There are three factors which could threaten joint union-management training:

1. lack of evaluation to demonstrate the quality of training provided;
2. deterioration of the current cooperation between the unions and managements; and
3. further decline in the unionization of U.S. workers.

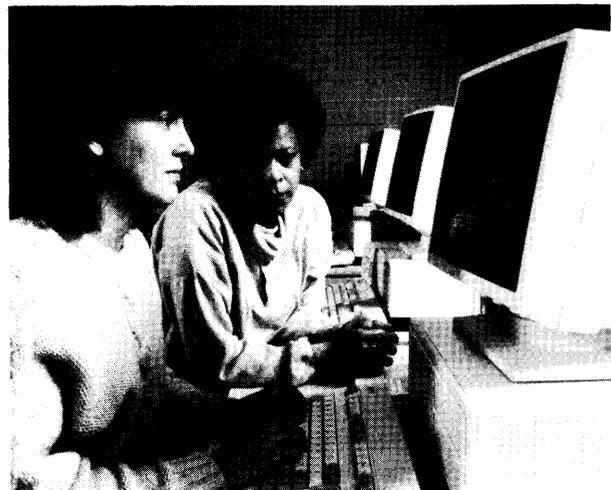


Photo credit: The Alliance for Employee Growth and Development, Inc.

Joint union-management training has spread from the auto industry to telecommunications. Here, a union-represented AT&T employee receives one-on-one coaching from her instructor.

First, most joint union-management training programs are not evaluated. This is not surprising: As discussed above, very few company training programs receive rigorous evaluation because of the time and expense required. Evaluation of joint programs is particularly difficult because they are designed to achieve a variety of goals. Nevertheless, it is possible to assess the quality of individual courses and programs. The CWA-U.S. WEST Communications program has conducted several studies of specific programs and services, and all three of the UAW joint programs have begun to evaluate their major programs. The results of these studies could be useful to the broader training community as well as to the joint programs themselves.

The second threat—a decline in union-management cooperation, which forms the basis of the joint training corporations—is real, but is unlikely to affect joint training in the near future. Although a vocal minority within the UAW has raised awareness of some of the flaws of ‘jointness,’ the top-level leadership remains firmly committed to cooperation when it is in both the unions’ and management’s interests. Training is seen as such an area. The CWA has strongly supported joint training even while reducing its commitment to joint ‘Qual-

<sup>121</sup>Public Law 100-647, approved Nov. 10, 1988, retroactively extended Section 127 from Jan. 1, 1988 (it had expired on Dec. 31, 1987) through Dec. 31, 1988. This law also disqualified formerly eligible graduate level courses.

ity of Worklife" programs aimed at other areas of labor-management cooperation.

However, as the unionized percentage of the workforce shrinks, the possibilities for joint union-management efforts, not only in the area of training but also in other productivity and quality issues, are diminished. Since 1960, the percentage of private sector workers covered by union contracts has plummeted, while the percentage of government employees represented by labor unions has increased. In 1989, union members made up 37 percent of employment in government, compared with only 12 percent in the private sector.<sup>122</sup> The decline in private sector unionization in the United States is in sharp contrast to the situation in Canada, where labor law makes union organization much simpler and allows less scope for management opposition.

## RETAINING THE SKILLS OF OLDER WORKERS

The U.S. population is aging. The proportion of the population age 45 and older will increase steadily from 1991 to about 2010 when the last of the baby boomers enters this age group. At the same time, a decrease in the youngest age group from which workers are drawn, those 16 to 24, is projected.<sup>123</sup> One way that companies can compensate for projected workforce shortages is to retain older workers in greater numbers and/or for more years. However, an increasing proportion of older workers in the labor force means that it will be important to know how advancing age affects the various skills that contribute to job performance, and if there are negative effects, how to reduce or compensate for them. If age-based physiological changes do not have a significant effect on performance, there is still the question of whether older workers receive adequate training to match their skills with changing technology. This chapter defines older workers as those 45 years old and older (see footnote 12). Hence the discussion covers not

only those **at the young** end of the older worker group, but also those who are now typically retired (65 years old and older), because there may be more job opportunities for such people in the years ahead.

Laboratory studies show gradual declines in sensation and perception, motor control, learning, and memory with age, but how these changes affect job performance has not been well-researched.<sup>124</sup> Laboratory tasks may be poor surrogates for workplace tasks. In addition, people become more heterogeneous with age. Accordingly, chronological age is a poor predictor of significant reductions in the productivity or trainability of any particular worker. Better information on the relationship between laboratory test results and job performance would facilitate development of more accurate predictors of productivity and trainability than chronological age.<sup>125</sup>

Despite age-related physiological changes, age-related declines in performing traditional tasks in most occupations seem to be gradual and slight, and it appears that the ability to produce and learn is unaffected in healthy workers beyond the age of 65.<sup>126</sup> The explanation for the apparent lack of performance declines may be that judgment and experience of older workers compensate for some age-related physiological declines or because people with significant age-related deficits remove themselves from the workforce, or both.

Sometimes the decision to leave the workforce is not due to diminished capacity to accomplish job tasks per se, but due to other deficits that indirectly affect performance and/or enjoyment of work. The hard-of-hearing person is often mistakenly perceived to be inattentive, slow-thinking, or aloof, when instead the person has simply not heard a question or instruction or has heard it incorrectly. Such misconceptions may cause workers with age-related deficits or disabilities to leave the workforce prematurely.<sup>127</sup>

<sup>122</sup>"Union Membership Down to 16.4 Percent of Workers," *Daily Labor Review*, op. cit., footnote 72, p. B-8.

<sup>123</sup>The data for those aged 16 to 24 is from Howard N. Fullerton, "New Labor Force Projections Spanning 1988 to 2000," *Monthly Labor Review*, vol. 112, No. 11, November 1989, p. 8.

<sup>124</sup>F.R. Rothstein, with D.J. Ratte, op. cit., footnote 11, pp. 1-30. Much of the discussion in this section is drawn from this report.

<sup>125</sup>*Ibid.*

<sup>126</sup>D. Baugher, "Is the Older Worker Inherently Incompetent?" *Aging and Work*, fall 1978, p. 248.

<sup>127</sup>F. R. Rothstein, "Reducing the Impact of Age-Related Hearing Loss," unpublished concept paper for the National Council on the Aging, November 1982, p. 2.

Even without adequate data on age-related physiological changes and job performance, common sense leads to several conclusions. First, most jobs do not demand performance at maximum physical capacity; jobs requiring physical strength and a rapid work pace would be most affected by advancing age. Conversely, work that depends on experience or on building a clientele puts the older worker at an advantage.<sup>128</sup> Second, declines in heavy manufacturing and increases in service jobs will likely reduce the impact of age on job performance. Finally, the great variability among workers in the same age range means that policy with respect to the older worker should be flexible and individualized rather than uniform.<sup>129</sup>

### *Practices That Compensate for Age-Related Changes*

Efforts to compensate for age-related deficits focus either on the worker or on the job. When the focus is on the worker, one approach is to try to reduce the deficit. Company-based health promotion programs have the potential to improve the health and thereby the overall job performance of middle-aged and older workers.<sup>130</sup> Another approach is training. While research is limited, some evidence suggests that training can overcome some age-related deficits. Hearing loss, which accounts for the largest number of all sensory loss disorders with age,<sup>131</sup> is an example. A promising training approach tested in a nursing home and yet to be tried in an employment setting involves training both older persons and those with whom they interact in new communication techniques.<sup>132</sup> The training is not Sign language but teaching heightened sensitivity to the possibility of misunderstanding or partial under-

standing. Such techniques are likely to be applicable to the workplace.

When the focus is on the job, the number of hours worked can be reduced and/or the characteristics of the job can be modified to facilitate retention of older workers. Part-time work can meet business needs for peak-time coverage and for workforce flexibility. On the other hand, employers may use part-time work as a way to avoid offering benefits. Nonetheless, part-time work is an attractive option for some older people.<sup>133</sup>

Part-time work arrangements include job-sharing, phased retirement, and, increasingly, reemployment of retirees on a part-time or contingent basis (postretirement employment). Travelers Insurance Co. uses 16 retirees as job sharers in four positions staffing a consumer hot-line.<sup>134</sup> As an example of phased retirement, Polaroid offers workers a 'try-out retirement' option, in which they can reduce or even terminate their work schedules with the option of returning to full-time responsibilities if they change their minds.<sup>135</sup> Postretirement employment comes in a variety of forms. Depending on pension provisions, retirees can return to their previous employer as part-time employees, as contract workers, through an outside temporary agency, or as part of a job bank or internal temporary work pool.<sup>136</sup>

Job modifications include job transfer, job redesign, and job accommodation. Stouffer Foods Corp. allows older workers to transfer from the faster-paced retail assembly lines to the slower-paced institutional lines if their work slows down or compromises safety.<sup>137</sup> In job redesign, the work is changed to reduce lifting, climbing, or prolonged standing. Job redesign is often informal and individ-

<sup>128</sup>P.K. Robinson, "Age, Health, and Job Performance," J.E. Birren, P.K. Robinson, and J. E. Livingston (eds.), *Age, Health, and Employment* (Englewood Cliffs, NJ: Prentice Hall, 1986), pp. 70-71.

<sup>129</sup>Rothstein, with Ratte, op. cit., footnote 11, p. 33.

<sup>130</sup>Robinson, op. cit., footnote 128, p. 71-72.

<sup>131</sup>Some hearing loss to pure tones can be measured in nearly everyone after the middle 30s. Impairments in speech comprehension under adverse conditions begin as early as the 40s. Rothstein, with Ratte, op. cit., footnote 11, pp. 8-9.

<sup>132</sup>Developed by the Regional Council on Aging (RCOA) in Rochester, New York, "Eliminating the Sound Barrier," improved communication between hard-of-hearing older people and professionals who worked with them.

<sup>133</sup>American Association of Retired Persons, *Workers 45+: Today and Tomorrow* (Washington, DC: 1986) p. 19.

<sup>134</sup>F.R. Rothstein, "Older Worker Employment Opportunities in the private Sector," R. Morns, and S.A. Bass (eds.), *Retirement Reconsidered: Economic and Social Roles for Older People* (New York, NY: Springer Publishing Co., 1988), p. 154.

<sup>135</sup>L.S. Root and L.H. Zarruch, "Personnel Practices for an Aging Workforce: Private-Sector Examples," paper prepared for the U.S. Senate Special Committee on Aging, February 1985, pp. 40-42.

<sup>136</sup>H. Axel, *Job Banks for Retirees* (New York, NY: The Conference Board, 1989, pp. 6-7.

<sup>137</sup>Root and Zarruch, op. cit., footnote 135, p. 47.

ualized and can involve mechanization to reduce physical effort, changing job content through task redistribution, or minimizing distractions.<sup>138 139</sup>

A recent survey of human resource professionals suggests that companies are not enthusiastic about job transfer and job redesign, and these adjustments are used infrequently. Older workers who cannot keep up with new technology and procedures often stay in their current jobs, at the same pay, but many of their duties are reassigned to more capable staff members, resulting in attitude and morale problems.<sup>140</sup>

Job accommodations are sometimes made to retain a long-term employee whose capacities are diminished after a heart attack, stroke, or other disabling incident. A simple example of job accommodation is found in McDonald's Corp.: older workers who assemble salads sit on stools rather than standing up. The Job Accommodations Network, a hotline for employers to exchange information about the modifications they have made to retain employees with various impairments, estimates that most employee accommodations cost less than \$1,000.<sup>141</sup>

### *Training To Update Skills*

For most older workers, the need is not methods to compensate for age-related physiological declines but training to upgrade skills that have become outdated by new technology. Federal support for older worker training programs has been limited and corporate training departments and private for-profit training vendors have shown little interest in developing training packages tailored to older workers.<sup>142 143</sup>

Demographic changes make continuing education programs an increasing source of retraining. In the last two decades, as the baby boom has moved out of the traditional college and postgraduate years, universities have begun seeking older students. Still, targeted marketing and tailored teaching methods will be necessary to attract more older students and to mitigate fears they may have of competing in the classroom after many years away from formal teaching.

The main question with university-based retraining is who pays. While recent legislation (the Higher Education Act of 1986) has opened up financial aid opportunities for part-time students,<sup>144</sup> full-time retraining is out of reach financially for most employees.<sup>145</sup>

Vocational schools have long been instrumental in training and retraining people for work. Older workers have not been a major component of their student populations. However, former American Vocational Association president Gene Lehrmann predicts that the role of vocational education in retraining older people for second careers in high demand occupations will grow.<sup>146</sup>

Apprenticeship is another source of training. Formerly limited to people under 45, apprenticeships are now available regardless of age, and older people are beginning to take advantage of the opportunity. Many older apprentices come into the program as dislocated workers. There are no differences in the training or work processes for older apprentices. However, a new practice that helps some of the older dislocated workers is that as incoming apprentices they get credit for prior experience, which allows them to come in at higher levels. In February 1990, 4 percent of apprentices in

<sup>138</sup>Robinson, *op. cit.*, footnote 128, PP. 72-73.

<sup>139</sup>K.D. Miller, *Retraining the American Workforce* (Reading, MA: Addison-Wesley, 1989), p.130.

<sup>140</sup>American Society of Personnel Administration/Commerce Clearinghouse, "Managing the Aging Workforce: The 1988 ASPA/CCH Survey," *Human Resources Management*, June 28, 1988, p. 3.

<sup>141</sup>K.J. Marion, Human Factors Consultant, Job Accommodation Network, personal communication, 1990.

<sup>142</sup>American Society of Personnel Administration/Commerce Clearinghouse, *op. cit.*, footnote 140, p. 6.

<sup>143</sup>J. Camery, Senior Research Analyst, *Training magazine*, personal communication, January IWO.

<sup>144</sup>L.B. Shaw, "Special Problems of Older Women Workers," M.E. Borus et al. (eds.), *The Older Worker* (Madison, WI: Industrial Relations Research Association, 1988), p. 66.

<sup>145</sup>G. Kearsley, "Introducing New Technology Into the Workplace: Retraining Issues and Strategies," *Investing in People: A Strategy to Address America's Workforce Crisis*, Background Papers, vol. 1 (Washington DC: Commission on Workforce Quality and Labor Market Efficiency, U.S. Department of Labor, September 1989), p. 478.

<sup>146</sup>K.M. Roberts, "Retirement is a New Beginning," *Vocational Education Journal*, January/February 1950, p. 25.

the Bureau of Apprenticeship Training's database were 45 or older.<sup>147</sup>

Companies could find it to their advantage to help finance if not to provide, training of older employees as fewer younger workers enter the labor market. In theory, the Age Discrimination in Employment Act (ADEA) encourages such activities. One purpose of ADEA is "to help employers and workers find ways of meeting problems arising from the impact of age on employment." Although virtually nothing has been done toward accomplishing this purpose, ADEA clearly opens a door for Federal involvement on a "carrot" rather than a "stick" basis.

### *Experience With Training Older Workers*

Two-thirds of the human resource managers who participated in a 1987 survey acknowledged that special training techniques may enhance efforts to update skills among older employees. Self-paced learning, experiential training, on-the-job coaching, pragmatic or application-oriented training, and training that senior employees help design were among the techniques cited.

However, according to the survey, efforts to train older workers are hampered by several factors. Fifty-nine percent of the managers reported moderate to great resistance to training among older employees, and 52 percent reported that older employees have trouble mastering new concepts, ideas, and approaches. Despite high awareness that older workers have distinct training needs, only 38 percent of the companies represented conduct an annual assessment to identify training needs, and only 29 percent offer training and development for older employees.<sup>148</sup>

Experience with older workers and computers shows that older workers can be effectively trained in new technologies and that they benefit from training methods tailored to them. The attitudes of management are the greatest hurdle older workers face (see box 8-D).

Training managers on age issues can change their perspectives and decisions vis-a-vis training older workers. An evaluation involving 100 organizations using a course that emphasizes the benefits of effective use of older workers showed that, 3 months later, the training continued to have a positive effect on managers and their feelings about their own aging, their commitment to involving older persons in their human resource planning and their decisions on performance reviews, retraining, and retention of older workers.<sup>149</sup>

There is general agreement on some of the characteristics of training that benefit older workers. Because stress has a greater negative effect on older trainees than on their younger counterparts, methods that minimize stress are particularly important for the older trainee. Programmed teaching minimizes stress, and thus may be more successful with older workers than traditional teaching methods. Even with programmed teaching, however, there is evidence that older people require more time to complete a learning program; 67- to 84-year-olds needed 103 minutes to complete a learning program that 16- to 32-year olds finished in 45 minutes.<sup>150</sup>

Testing is a cause of stress, and some experts suggest that testing of older trainees be minimized. When testing is necessary, frequent feedback on results can help accustom the older trainee to testing.<sup>151</sup>

Reducing the need for memory by job aids and embedded training (or improving memory by mnemonics) and minimizing distractions can increase successful learning by older workers.<sup>152</sup>

Programs for reentry women and dislocated workers find it effective to provide motivational and confidence-building sessions prior to skills training to combat the self-fulfilling prophecy of those who

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<sup>147</sup>M. Miller, Acting Director, Bureau of Apprenticeship Training, U.S. Department of Labor, personal communication, 1990.

<sup>148</sup>American Society of Personnel Administrators/Commerce Clearing House, op. cit., footnote 140, p. 6.

<sup>149</sup>Dennis, op. cit., footnote 19, pp. 149-151. The course was "Age Issues in Management," available from\* Conference Board.

<sup>150</sup>M. Doering, S. R. Rhodes, and M. Schuster, *The Aging Worker: Research and Recommendations* (Beverly Hills, CA: SaGE Publications, 1983), p. 113.

<sup>151</sup>Miller, op. cit., footnote 139, p. 138.

<sup>152</sup>Ibid., pp. 129-130.

expect to do poorly in training and then proceed to do so.<sup>153</sup>

Such techniques could help in skills training of the older worker, particularly when computers are involved.<sup>154</sup>

Malcolm Knowles has probably had the greatest influence on development of adult learning principles. Knowles pioneered andragogy, the art and science of helping adults learn, based on the learner as an active participant in designing and delivering the learning program.<sup>155</sup>

Knowles' principles as applied to older workers can be summarized as follows. First, the physical environment and psychological climate of the training setting need to accommodate the declines in physiological functioning that affect older people to varying degrees. Second, traditional classroom methods such as lectures are less effective than group discussions and problem-solving, in part because the latter techniques more closely emulate real-life work processes and in part because they mitigate the anxiety many older adults feel about returning to the classroom after decades away from it. Third, the extensive job and life experiences of the older worker can enrich the training experience and must be integrated into the learning program. And fourth, the motivation of older workers in work-related learning is directly related to whatever career and life changes they are undergoing.<sup>156</sup>

### *Retirement and Public Policies*

Improvements in retirement income packages have been a major factor affecting retirement decisions.<sup>157</sup> These improvements, which have enabled more workers to retire earlier, have also reduced pressure on the government and corporations to

develop programs and policies to expand older worker training and employment opportunities.<sup>158</sup>

Congress recently began requiring employers to recognize earnings tier age 65 for pension contribution and benefit purposes. This pension policy removed a disincentive toward continued work past 65, but pension plans may still limit the ability of retirees to work part-time for their former employer because pension payments are jeopardized.

Amendments to the Age Discrimination in Employment Act first moved the mandatory retirement age from 65 up to 70, and in 1988 the age limit was outlawed altogether for most jobs. However, enforcement by the Equal Opportunity Commission is minimal because of severe budget constraints.<sup>159</sup>

The Social Security system affects continued employment in several ways. For instance, the earnings test restricts the amount that Social Security beneficiaries between 62 and 69 may earn without jeopardizing their benefit levels. However, low income workers do not generally earn enough to affect their benefits. The earnings limit will be relaxed somewhat beginning in 1990. Moreover, few people understand that the earnings test does not apply to those who are 70 or older; that is, that the benefit levels of such workers are *not* affected by earned income.

On the other hand, the 1983 Social Security amendments included several incentives for continued work. The gradual rise in age eligibility for full benefits from 65 to 67, which will begin in the year 2000, could encourage baby boomers to stay longer in the labor force. Gradual increases in the delayed retirement credit for employees who continue working beyond age 65 should have a similar effect.<sup>160</sup>

<sup>153</sup>F. L. Alegria and A. Lordeman, *Serving Older Individuals Under the Job Training Partnership Act: State Initiatives and Practices* (Washington, DC: National Governors' Association and National Association of State Units on Aging, June 1988), p. 13.

<sup>154</sup>American Society of Personnel Administration/Commerce Clearing House, *Op. cit.*, footnote 140) p.14.

<sup>155</sup>M. S. Knowles and Associates, *Andragogy in Action* (San Francisco, CA: Jossey-Bass, 1984), pp. 14-18.

<sup>156</sup>H. L. Sterns and D. Doverapike, 'Training and Developing the Older Worker: Implications for Human Resource Management' in Dennis, *op. cit.*, footnote 19, p. 99.

<sup>157</sup>R. V. Burkhauser and J. F. Quinn, "Labor Force Participation of Older Workers," *Investing in People: A Strategy to Address America's Workforce Crisis*, background paper, vol. I (Washington DC: Commission on Workforce Quality and Labor Market Efficiency, U.S. Department of Labor, September 1989), pp. 1084, 1099-1100.

<sup>158</sup>S. E. Rix, Director of Research, Women's Research and Education Institute, testimony at a joint hearing before the Select Committee On Aging and the Subcommittee unemployment opportunities of the Committee on Education and Labor, U.S. House of Representatives, on "The State of the Older Worker: Current and Future Needs," 1989, Serial Number 90-614, p. 58.

<sup>159</sup>J. K. L. Morse, Attorney, Office of the General Counsel, Equal Employment Opportunity Commission, personal communication, 1990.

<sup>160</sup>Axel, *Op. cit.*, footnote 136, p. 9.

### **Box 8-D-Older Workers and Computers**

Rapid technological change and pervasive use of computers and computer-assisted tools are common in the workplace today. Yet, there is little documentation about whether there is a differential effect on older workers when computers are introduced into the workplace. Of the few age-specific studies that have looked at adult performance in computer training, most relate to the older worker's ability to learn to use computers for word processing:

- . A recent study examining older women's computer trainability and attitudes toward computers found that women 55 to 70 years old performed as well as young (25 to 39) and middle-aged (40 to 54) women.<sup>1</sup>
- . A study comparing younger adults (20 to 39) with older adults (50 to 84) found that the older adults took twice as long to learn but achieved nearly equal performance levels. The older adults requested help two to three times as frequently. Performance in training and attitude toward computers were directly related.<sup>2</sup>
- . When older adults (65 to 75) and younger adults (18 to 30) without prior computer experience participated in two training sessions a week over several weeks, the older adults proved able to learn computer word processing skills and to use that expertise to solve problems. Information recall about the word processing program was similar in both groups, and both carried out computer operations equally correctly and efficiently. However, the older adults needed more time to select and carry out procedures and more assistance during editing tasks.<sup>3</sup>

Gist, Rosen, and Schwoerer compared older and younger people in computer familiarization and spreadsheet training using two different training techniques. Both age groups showed learning gains, but the younger trainees performed better than those over 45 with both training techniques.<sup>4</sup>

The above studies suggest that older workers can adjust well to computerized word processing. However, older workers tend to take longer to learn and need more assistance while learning to use computerized word processing.

A growing body of anecdotal information indicates that older workers are more likely to accept computers if introduced to them in ways deliberately designed to reduce their anxiety: older instructors, smaller classes, and abundant time to practice.<sup>5</sup>

Despite evidence that older workers can become both comfortable and accomplished with computer technology, many managers believe otherwise. A recent survey showed that only 22 percent of human resource executives felt that older workers were comfortable with new technologies such as computers. Three-quarters of the respondents agreed that "our younger employees represent the future of the industry and we should focus our training and development efforts on them." G

<sup>1</sup>National Council on the Aging, "Research Findings: Older Persons Can Excel on Computers," *The Aging Workforce*, vol. 3, No. 1, March-April 1989, p. 5; S. J. Czaja, unpublished research on older adults and computer training for Advanced Automation Concepts, Inc., Buffalo, NY.

<sup>2</sup>E. Zandri and N. Charness, "Training Older and Younger Adults to Use Software," *Educational Gerontology*, vol. 15, 1989, pp. 623-625.

<sup>3</sup>A. A. Hartley and J. T. Hartley, "The Older Adult as Computer User," P. K. Robinson, J. Livingston, and J. E. Birren (eds.), *Aging and Technological Advances* (New York, NY: Plenum Press, 1984) p. 348.

<sup>4</sup>M. Gist, B. Rosen, and C. Schwoerer, "The Influence of Training Method and Trainee Age on the Acquisition of Computer Skills," *Personnel Psychology*, vol. 41, 1988, pp. 261-262.

<sup>5</sup>F.R. Rothstein with D.J. Ratte, "Training and Older Workers: Implications for U.S. Competitiveness," report prepared for the Office of Technology Assessment under contract N3-1360, March 1990, pp. 83-84.

<sup>6</sup>The Yankelovich Group, *Business and Older Workers* (Washington, DC: American Association of Retired Persons, 1989), p. 13.

The employment section of the Americans with Disabilities Act requires any private company with 15 or more employees to provide "reasonable accommodation" to employees with disabilities unless such provision causes the business "undue hardship." The Act may offer legal remedies to older workers affected by age-related disabilities

—this interpretation has been called the Act's "sleeping giant".<sup>161</sup>

Specific Federal commitment to training older workers involves only two programs—the Job Training Partnership Act (JTPA) and the Senior Community Service Employment Program, also

<sup>161</sup>B. Fretz, Executive Director, National Senior Citizens Law Center, speech at National Association of State Units on Aging Conference, Jan. 18, 1990.

known as the Title V program of the Older Americans Act. Title V and the older worker provisions in JTPA are limited to assisting low income individuals 55 and over and neither has the resources to meet the needs of this population.<sup>162</sup> Neither program emphasizes training for older workers. The JTPA's targeted older worker services have emphasized assistance in job search rather than skills enhancement.<sup>163</sup> The one nonmeans-tested JTPA program, which is designed to serve dislocated workers regardless of income, has disproportionately underserved older victims of economic dislocation.<sup>164</sup> The Title V program places low-income seniors in part-time jobs with community service agencies, and they are generally paid the minimum wage. While some training occurs, most Title V programs have income maintenance as their primary goal.<sup>165</sup>

#### Lack of Data on Access, Costs and Effectiveness of Older Worker Training

Inadequate information on access, costs, and effectiveness makes it difficult to formulate policy about training older workers. While the Bureau of Labor Statistics conducts regular labor force surveys, these surveys do not seek information on worker training.<sup>166</sup> The one comprehensive household survey conducted by BLS and the Census Bureau in 1983 has not been updated.

Most companies could probably produce age data on their trainees by examining personnel files. However, a study prepared for OTA<sup>167</sup> found no

companies that do so as a matter of course. Furthermore, if companies do compile such information they might hesitate to make it public for fear of violating ADEA provisions. Not all human resource development specialists interviewed for this report<sup>168</sup> realized that collection of age data on training participants is not prohibited under ADEA.

Nor does access to training by older workers appear to be on the research agenda of national trade associations. The National Association of Manufacturers, which represents many of the companies at the center of the restructuring and retooling activities of the past decade, has not focused on age as a factor important to the human resource development needs and practices of its members.

Just as data on access are limited, so also are data on the costs and effectiveness of methods of training older workers. Only 11 percent of companies in one survey reported that they analyze the costs and benefits of training employees over the age of 50.<sup>169</sup> Little useful information has been compiled from experience with publicly funded training.<sup>170</sup> Federal budget constraints, combined with a shift of the Administration on Aging away from research on employment, have resulted in sharp cuts in grant support for such research. Nonetheless, the aging of the American workforce means that better information on access, costs, and effective methods for training older workers will be increasingly important.

<sup>162</sup>Rothstein, with Ratte, op. cit., footnote 11, p. 47.

<sup>163</sup>F. R. Rothstein, *Continuing to Work: JTPA and the Older Worker* (Washington, DC: National Association of Counties, 1989), p. 19.

<sup>164</sup>U.S. Congress, General Accounting Office, *Dislocated Workers: Local Programs and Outcomes under the Job Training Partnership Act* (Washington, DC: General Accounting Office, 1987), pp. 39-40, 46.

<sup>165</sup>S. Sandell, *Older Workers: Prospects, Problems and Policies, 9th Annual Report* (Washington, DC: National Commission for Employment Policy, 1985), p. 27.

<sup>166</sup>Philip L. Rones, Economist, Bureau of Labor Statistics, personal communication, February 1990.

<sup>167</sup>Rothstein, with Ratte, op. cit., footnote 11, p. 72.

<sup>168</sup>*Ibid.*, p. 73.

<sup>169</sup>B. Rosen and T. H. Jerdee, op. cit., footnote 18, p. 72.

<sup>170</sup>For example, *Job Training Partnership Act: Information on Set-Aside Funding for Assistance to Older Workers* (Washington, DC: General Accounting Office, 1990), a January 1990 report from the General Accounting Office, probably offers the most complete cost information on the set-aside program to date. Yet it examines only expenditure rates and numbers of participants terminating from the program, with no attention to the cost-effectiveness of various types of training, i.e., the relationship between types of intervention and outcomes.