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ABSTRACT

Increasing concerns about the skill level of U.S. workers are driven by demographics, technological change, and international competition. Greater percentages of the labor force will be comprised of those groups that have traditionally faced the greatest barriers to full participation in the labor force. Rapid technological change is increasing the complexity of the workplace. The United States is part of an increasingly global marketplace. The U.S. Department of Labor launched the Apprenticeship 2000 initiative in December 1987 to determine what role the apprenticeship concept might play in raising the skill levels of workers. The initiative included public dialogue, a research program, and an analysis of relevant studies. Key findings included the following: (1) work-based learning is the most effective method of skill acquisition; (2) the current apprenticeship program can be strengthened and improved, but the system should be preserved; and (3) new training program models should be developed. Recommendations included the following: credentialing structured work-based training programs; strengthening the basic apprenticeship model; and supporting and expanding structured work-based training programs, including apprenticeship. (29-item bibliography) (CML)

Work-Based Learning: Training America's Workers

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Elizabeth Dole, Secretary

Employment and Training Administration
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1989

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Contents

Executive Summary

The following quote from a September 1988 *Business Week* article illustrates the increasing concern about the skill level of American workers.

> *The nation's ability to compete is threatened by inadequate investment in our most important resource: people. Put simply, too many workers lack the skills to perform more demanding jobs.*

The factors driving these concerns are identifiable:

- ***Demographics***—The labor force is growing much more slowly than in prior years as a result of declining birth rates and changes in immigration policies. The pool of young workers is shrinking, thereby requiring employers to look beyond their traditional sources for entry-level workers. While the supply of labor, in absolute numbers, is projected to be adequate to meet employment demands, greater percentages of the labor force will be comprised of those groups which have traditionally faced the greatest barriers to full participation in the labor force.

- ***Technological Change***—Rapid technological change is increasing the complexity of the workplace. The fundamental shifts in the nature of work require a workforce that is both highly skilled and highly adaptive. Workers need basic literacy skills which include cognitive skills that enable an individual to continue to learn and adjust to new work situations. For example, recent studies estimate that "the occupational half-life," the span of time it takes for one half of workers' skills to become obsolete, has declined from 7-14 years to 3-5 years [National Research Council, 1986]. In fact, for some companies, this time period is much shorter.

- ***International Competition***—The United States is part of an increasingly global marketplace. Within this marketplace are countries whose industries are technologically advanced and

whose workers are well-educated and highly skilled. Thus, U.S. industries must continue to upgrade their processes and their workforce in order to maintain a competitive position in the world market. To do otherwise jeopardizes this country's continued economic well-being.

The Massachusetts Institute of Technology Commission on Industrial Productivity recently completed and published a large-scale study on the decline in U.S. productivity, called "Made In America, Regaining the Competitive Edge." This study examined practices in a number of U.S. industries since World War II. Included in the areas examined was the way firms invest in human resources. This study found that, while a number of American firms see the importance of upgrading skills, the best practices of these firms are not being filtered down quickly or widely enough. The study attributes the problems to the fact that many small and midsize firms lack the resources necessary to provide training, and others are concerned about losing the workers they have trained. The study concluded that:

While there are a few positive signs that emerging patterns of labor-management bargaining may focus on training, they do not seem sufficient to overcome the legacy of long neglect. Because of the widespread reluctance on the part of firms to invest more substantially in training and to reorganize the workplace in ways that promote continuous learning, we believe that the natural diffusion of best practices will not work broadly or rapidly enough to produce the kind of educational effort that is needed.

Finding solutions will, according to the authors, "require national political leadership."

Apprenticeship 2000 Review

Over the last several years, the Department of Labor (hereafter referred to as "the Department") has directed resources into identifying the demographic and technological changes affecting the American worker and the workplace. The lessons learned from these efforts have led to the Employment and Training Administration's Apprenticeship

2000 initiative. The objective of this initiative, launched in December 1987, was to determine what role *the apprenticeship concept* might play in raising the skill levels of American workers. The initiative has involved several components:

- Broad public dialogue accomplished through public meetings, *Federal Register* notices and meetings with representatives from a variety of interest groups;

- A short-term research program to examine issues surrounding expansion of the apprenticeship concept; and

- Analysis of relevant studies on learning, skills acquisition and workplace dynamics, as well as consultation with experts in the employment and training field.

The first stage of this initiative is complete. Key findings from this review lay the foundation for recommendations for a major new emphasis on the training of American workers. These findings include the following points:

- This country's continued economic well-being is tied to how well it manages its human resources.

- Changing demographics, combined with the increasing complexity of the workplace, have made training and retraining of *all American workers* critical issues requiring national leadership and policy.

- Increasing evidence points to work-based learning as the most effective method of skill acquisition because this method of experiential learning generally works best for individual learners and because the training can be tailored to the employer's needs.

- The current apprenticeship program can be strengthened and improved to permit expansion within its "traditional" boundaries. However, this system should be preserved as a means of training for occupations that involve a broad range of largely mechanical skills that require long periods of time to master.

- New training program models should be developed to encourage the expansion of structured work-based training

programs, incorporating features from apprenticeship.

• Features from apprenticeship have broad applicability as means of effectively training and retraining workers in all trades as well as the traditional building and manufacturing trades. These features include:

– The basic model of structured on-the-job training combined with classroom or theoretical instruction;

– The formal recognition afforded programs and the awarding of worker credentials upon completion;

– Private sponsorship, tailored to the workplace, with limited support from government and education;

– The transfer of skills on the job through a mentor, skilled supervisor or skilled coworkers; and

– A contract or agreement between the training sponsor and the trainees on the processes and outcomes of training.

Recommendations

Based on these (and other) key findings, the Department should take the initiative to provide new national leadership on skills development for American workers. The framework for this new national leadership is described in eight broad recommendations. Under each policy recommendation are additional recommendations for specific actions. These recommendations represent a significant new role for the Department. In the past, the Department has focused its resources and attention almost exclusively on the needs of hard-to-serve population groups, including at-risk youth and dislocated workers. Marketplace circumstances, both national and international, now drive the need for additional emphasis on training and retraining issues affecting *all* workers. The eight recommendations are organized in three parts, as follows:

PART A. THE NEW MODEL — CREDENTIALING STRUCTURED WORK-BASED TRAINING PROGRAMS

Recommendation 1. Expand structured work-based training programs through development

and implementation of new training program models based on features of apprenticeship.

Recommendation 2. Establish a national work-based training body to recommend policy and provide direction for supporting and assisting in the delivery of work-based training programs.

PART B. STRENGTHENING THE BASIC APPRENTICESHIP MODEL

Recommendation 3. Streamline and coordinate Federal regulations and policies affecting apprenticeship in order to encourage expansion of the basic apprenticeship model.

Recommendation 4. Improve administration of the existing system so that it operates effectively and fairly.

PART C. SUPPORT AND EXPANSION OF STRUCTURED WORK-BASED TRAINING PROGRAMS, INCLUDING APPRENTICESHIP

Recommendation 5. Enhance the recognition value of program sponsorship and certification of skill attainment by instituting program criteria designed to ensure quality.

Recommendation 6. Develop work-based learning alternatives for noncollege-bound youth to assist them in effectively making the transition from school to a meaningful career path.

Recommendation 7. Provide additional incentives to encourage employers to adopt structured work-based training programs.

Recommendation 8. Intensify publicity at national, State and local levels.

These recommendations, in effect, propose a two-tiered strategy for raising the skill level of America's workforce to:

- Strengthen and preserve the current apprenticeship system; and

- Encourage expansion of structured work-based training which incorporates successful features of apprenticeship.

The first strategy can be accomplished largely through

administrative and regulatory changes in the existing apprenticeship program and through additional support activities. The second strategy will be pursued initially through a series of demonstration projects in which the Department will form partnerships with large companies, associations and State and local governments to implement and evaluate work-based training program strategies.

Through these demonstration projects, the Department will:

- Develop new program models that provide for formal recognition of specialized training programs and certification of skill competencies (these models would apply to both entry-level training and training to upgrade skills);

- Develop flexible approaches for accrediting structured work-based training programs;

- Explore options for assisting small and midsize firms in sponsoring training programs; and

- Explore strategies for stronger interventions to help youth, including potential school dropouts, actual dropouts and the young, working poor to make successful transitions to meaningful careers.

Implementation

The recommendations contained in this report include very specific, short-term procedural changes as well as far-reaching program and structural changes. Some recommendations can be implemented immediately.

Others will require more research, development and public discussion. Ultimately, regulatory, and possibly legislative, changes will be needed to fully implement this new policy. The changes envisioned by this report can be accomplished only over time and through the consensus of those involved in sectors of the economy affected by these recommendations. This report sets the stage for this process to begin.

Introduction

The need for greater investment in human capital is coming to the forefront of business and government policy. The Nation's aging workforce, labor markets which are changing from labor surplus to shortage, increased international mobility of technology and increasing world trade and competition are all factors that drive human capital development and training policy issues. Our economic well-being is tied to how well these issues of workforce skill development are addressed.

For instance, the following statement appeared in an April 1983 report to the President, titled "America's Competitive Challenge, The Need for a National Response." The commission that produced this report, the Business and Higher Education Forum, was comprised of leading educators and prominent business leaders from across the country.

> *American workers are the single most valuable economic resource the United States possesses. To ensure that these workers are adequately educated and trained, the United States needs a national strategy for education, training and retraining at all levels.*

In the United States, companies are increasingly recognizing their role in human capital development. A recently published study by the Massachusetts Institute of Technology (MIT) Commission on Industrial Productivity, titled "Made in America," examined human resource practices in a number of U.S. industries. This study found that, while a number of American firms see the importance of upgrading skills, the best practices of these firms are not being filtered down quickly or widely enough.

The study attributed the problems to the fact that many small and midsize firms lack the resources to provide training, and others are concerned about losing workers they have trained. The study concluded that:

> *While there are a few positive signs that emerging patterns of labor-management bargaining may focus on training, they do not seem sufficient to overcome the legacy of long neglect. Because of the widespread reluctance on the part of firms to invest more substantially in training and to reorganize the workplace in ways that promote continuous learning, we believe that the natural diffusion of best practices will not work broadly or rapidly enough to produce the kind of educational effort that is needed.*

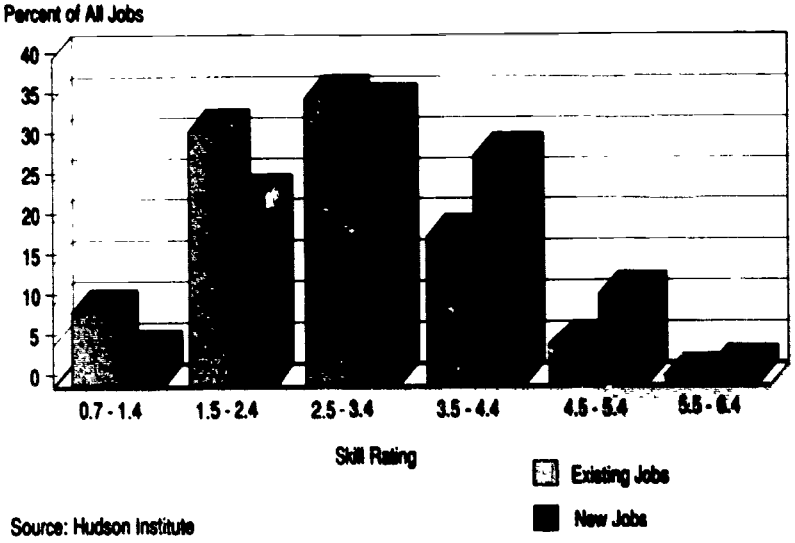
The authors also conclude that finding solutions will require political leadership.

The increasing focus on worker training is an outgrowth of the changes occurring in all sectors of industry. Rapid technological change is increasing the complexity of the workplace. For instance, in the past, well-paying manufacturing jobs required little skill since they involved largely mechanical, repetitive motion. These jobs are being replaced by jobs that require independent judgment as well as analytical and interpersonal skills. Thus, an individual needs a higher skill level than in prior years to qualify for a well-paying job today.

This trend is expected to continue since the remaining low-skill jobs are projected to be in low-growth, low-paying jobs. The Hudson Institute, in its "Workforce 2000" study, examined the skill levels in occupations projected to grow and concluded, "The fastest growing jobs will require more language, math and reasoning skills."

To illustrate, Figure 1 shows ratings of skill levels required now and in the future across all occupations on a scale of 1 to 6.4. Jobs at the low end of the skill rating include laborers at 1.2. At the midlevel are jobs in construction, with a 3.2 skill rating, and marketing and sales jobs at the 3.4 skill level. Natural scientists

Figure 1 Job Skill Levels *(Skill Ratings by Percentage of All Jobs)*



and lawyers are among those at the top of the skill ratings.

Jobs requiring skill levels of 3.5 and above (the three highest skill levels) are projected to constitute 41 percent of all jobs in the future. Only 24 percent require such proficiency now. At the lowest end of the scale, only 4 percent of new jobs are at the lowest skill level, compared to 9 percent of such jobs today.

The pressures of an increasingly complex workplace are compounded by the dramatic, demographic changes projected for the years ahead. The Department of Labor's Bureau of Labor Statistics (BLS) projects that the civilian labor force will grow by 21 million between 1986 and the year 2000. This represents an annual growth rate of 1.2 percent compared with a 2.1 percent annual growth rate for the prior 15-year period. The decline in the number of youth entering the labor force will raise the median age from 35 years in 1986 to 40 years in the year 2000.

Even more striking than the slowdown in growth and the accompanying aging of the labor force is the projected shift in its composition. Those groups which have traditionally faced the greatest barriers to full participation in the labor force will comprise an increasing percentage of the workers. For example, blacks, Hispanics and other minorities will comprise 26 percent of the workforce in the year 2000, up from 21 percent in 1986. Women will continue to enter the labor force in greater numbers, accounting for more than 60 percent of the labor force growth.

As the economy has continued to grow, creating 16 million new jobs in the last 6 years alone, the effects of the demographic changes are already becoming evident. In some areas of the country, notably metropolitan centers along the East Coast, the unemployment rate has dropped below 3 percent. In these increasingly tight labor markets, many employers find it difficult to recruit workers.

These changes in labor supply present opportunities for all workers—including those long outside the economic mainstream—to have a job. However, as Secretary Elizabeth H. Dole said at her confirmation hearing,

> *We have within our reach the fulfillment of a long-awaited dream—that* every American *who wants a job can have a job. But to fulfill that dream for many Americans, we must bring about timely and coherent intervention—not simply by government, but through the cooperation of private enterprise, unions, schools and community leaders—to wipe out illiteracy and enhance skills through basic education, training and retraining. Only then can all Americans profit from growth, by competing for the jobs that growth creates.*

A growing body of evidence points to formal workplace training as one solution to the skills gap problem. For instance, recent research by Lauren Resnick, past president of the American Educational Research Association, on how learning skills are acquired found that programs that are successful in teaching thinking and learning skills share many of the elements of apprenticeship. Like apprenticeship, the programs

which were studied "encourage student observation and commentary . . . allow skill to build up bit by bit, yet permit participation even for the relatively unskilled, often as a result of the social sharing of tasks [and] are organized around particular bodies of knowledge and interpretation . . . rather than general abilities."

Further, comparative studies of on-the-job education and training systems in such countries as Japan and West Germany indicate that this work-based approach has advantages in producing a skilled and flexible workforce. According to the authors of the MIT study, "Made in America":

> *Workplace training makes it more likely that workers will come to understand the big picture: how context shapes the task and how contingent factors must be integrated into performance. Broader skills enable workers to make larger contributions to the productivity of the firm and also to go on through life acquiring new skills.*

Work-based training programs are not only an effective method for skills acquisition; they also offer advantages for the individual worker. That is, the worker can be trained and master skills while working and earning a wage. For many, this is the only opportunity to advance into higher-paying, higher-skilled jobs.

For noncollege-bound youth, particularly those most vulnerable to dropping out before completing high school, formal work-based training programs offer opportunities to bridge the gap between school and work. There is a growing belief among educational researchers that current school systems are poorly designed for integrating noncollege youth into meaningful careers. Typically, schools have close connections with colleges but weak linkages with employers.

Two Brandeis University researchers, Robert Lerman and Hillard Pouncy, recently reported findings on linkages between school and work. Their findings indicate that closer linkages between school and work, through internship and apprenticeship types of programs, would

substantially improve the career options of noncollege youth, raise the productivity of those with low academic skills and give students genuine incentives to do well in school.

Yet, despite the considerable benefits of work-based training programs, private investment in training has been limited. The most common form of employee training is informal. Much less frequent is a more structured method of training. According to the BLS, only about 10 percent of U.S. employees receive any formal qualifying training from their employers. The total estimated employer expenditure for formal training is $30 billion annually, or less than 2 percent of payrolls.

Given the benefits of formal learning on the job, the challenge is how to get employers to make the needed investment in quality training for their workers. This policy report seeks to address this challenge by proposing new approaches and direction.

The Apprenticeship 2000 Review

1. Background

Over the last several years, the Department of Labor (hereafter referred to as "the Department") has directed considerable resources into identifying the demographic and technological changes affecting the American worker and the workplace. The lessons learned from these efforts led the Department's Employment and Training Administration to undertake a major review of the apprenticeship concept of training. The purpose of this review was to determine what role this form of systematic skill training might play in addressing the Nation's growing needs for more efficient use of human capital resources. To this end, the review emphasized *the broad concept of apprenticeship* and was not limited to the apprenticeship program as it now exists.

The apprenticeship concept, by its simplest definition, is learning by doing under the auspices of a mentor or master craft worker. Under the current system, apprenticeship is structured, on-the-job training combined with related, theoretical instruction, leading to certification of the attainment of journey worker status in a skilled trade.

Apprenticeship has long been associated with the traditional construction and manufacturing trades. Today, occupations with the largest number of apprentices are primarily in the traditional trades such as carpenter, electrician, plumber, sheet metal worker, machinist and tool and die maker.

There are currently over 300,000 registered apprentices—a number which has remained

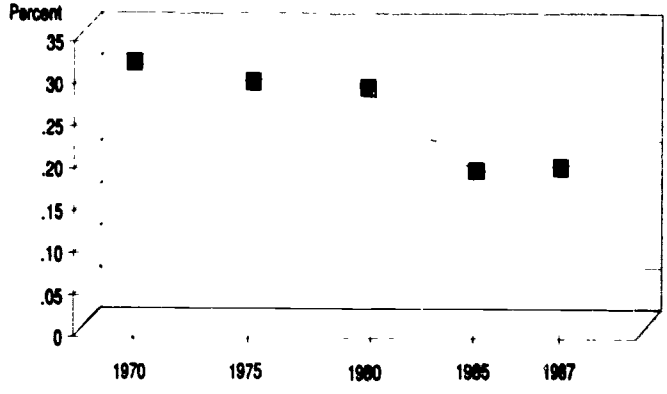
relatively constant over the last 10 years. The limited growth which has occurred has been largely in military apprenticeship programs. At the same time, the workforce has grown by nearly 20 percent. As a result, apprenticeship enrollment has declined relative to the civilian labor force, now representing less than 0.3 percent of the total. (See Figure 2.)

The apprenticeship system in this country is a unique partnership of business and labor, the primary operators of programs. Education and government play supporting roles. It is this kind of public-private partnership and *concept* of training that holds great promise for meeting this country's needs for securing a quality workforce.

2. Actions

A *Federal Register* notice published in December 1987 invited public comment on an issues paper that launched the apprenticeship review. The issues paper and the three public meetings that followed focused on five broad issues related to expansion of the apprenticeship concept. They were:

Figure 2 Apprentice Employment as a Proportion of Civilian Labor Force, 1970 - 1987



Source: BLS 1987;
Bureau of Apprenticeship and
Training Quarterly Management Report

- Should/can the apprenticeship concept be broadened to include all industries?

- What should be the limitations or parameters, in terms of occupations, of an expanded apprenticeship effort?

- What should be the delivery system for an expanded apprenticeship system?

- What should be the role of government in an expanded apprenticeship system?

- How can apprenticeship be more effectively linked to the education system?

Over 300 responses were received to these five issues, representing a wide spectrum of business, labor, education, government and public/special interests. The responses were analyzed and a report of public comments, "The Public Speaks," was issued in August 1988. This formal public dialogue has been supplemented with ongoing discussions with representatives from many different interest groups. Throughout this process, issues were explored and information was exchanged.

Concurrent with the public discussion, the Department undertook a series of short-term research projects. Contracts were awarded to 10 different individuals and firms to study a range of issues influencing expansion. Among the topics for study were barriers to expansion, links to vocational education, incentives and the Federal/State structure. These studies were completed in early fall 1988 and the results analyzed. Executive summaries were compiled and published for distribution.

The review also included an international component. A number of other developed countries are facing the same demographic, technological and competitive challenges as the United States. Some have taken steps already to revamp their education and training systems. In order to learn from their experience, the Department initiated discussions with experts from a number of different countries. Departmental officials and industry representatives participated in several international conferences on training issues.

Findings from these activities targeted the discussion. Accordingly, two focus papers were published in the *Federal Register* inviting public comment on a number of specific issues and options relating to the expansion of the apprenticeship concept. The first paper, published in October 1988, raised the possibility of alternative program structures built around the basic apprenticeship model and also asked how quality might be defined and measured. The second paper, published in January 1989, asked for opinions on (1) better linkages with education and other employment and training programs, (2) support activities needed to expand and maintain the apprenticeship concept and (3) changes, if any, needed in the current Federal/State administrative structure.

Responses to these focus papers have been reviewed, and a separate report, "Summary Report of Focus Papers," has been prepared for publication and distribution.

3. Key Findings

Findings from all components of this review were instrumental in formulating the recommendations contained in this paper, but the public dialogue was especially important. Some key themes were evident, and there is broad consensus in many areas. This section summarizes the major themes and important areas of consensus. Other specific findings are discussed under the appropriate policy recommendation.

The one area in which opinions are most consistent is in the support for apprenticeship as a method of training and its expansion to skilled occupations throughout American industry. The supporting rationale is that the apprenticeship concept of structured on-the-job training, combined with classroom instruction, is an ideal model for learning the job-specific skills needed by today's workers. Apprenticeship also provides workers, through experiential training backed by theoretical knowledge, with the flexibility to exercise independent judgment and to learn

in a work environment the skills needed to accomplish a job while also learning how to work and to be able to adapt to changes in the workplace.

Another often-cited strength of apprenticeship is its industry base. Because apprenticeship is operated by the private sector (employers and, in most cases, in conjunction with labor), the training can be tailored to the specific needs of the employer. As new technologies are introduced, industry can respond more readily to newly created training needs. Thus, there is consensus that apprenticeship should remain an industry-based program.

Within this industry-based framework, government and education have important roles to play. Many who participated in the review felt that much more could be done to assist and support industry in establishing and maintaining work-based training programs. Among the many specific suggestions, promotion and technical assistance were most frequently mentioned as appropriate support activities.

With the support for expansion of apprenticeship comes a cautionary note about dilution. Many hold the view that apprenticeship should be reserved as a system of training for multi-skilled, well-rounded workers. The labor community was especially concerned that expansion not be used as a vehicle to fragment skill acquisition within the traditional trades. Within these trades, it is clear that it is appropriate to maintain the traditional form of apprenticeship, with its emphasis on well-rounded workers. At the same time, it also appears that this traditional form of apprenticeship can benefit from the introduction of selected enhancements and from expansion in response to the continuing demands for skilled workers in these trades.

Aside from expansion themes, the most recurring theme throughout the review has been quality. Apprenticeship has a reputation as a quality system of training. Many participants in this review expressed concern about maintaining quality in

current programs and in any expansion efforts. There seems to be general agreement that the program certification by the government should be an assurance of quality.

4. Conclusion

Apprenticeship remains a viable system of training because it produces well-rounded, productive and flexible workers in demand occupations. Accordingly, the potential exists for expansion within its traditional boundaries. The need for skilled workers in construction and certain manufacturing trades is projected to increase, and apprenticeship can play a vital role in meeting this need.

However, outside the traditional trades, the emphasis upon the comprehensiveness of skill acquisition is not as pronounced. Therefore, in order to maximize the opportunities to expand apprenticeship while retaining the strengths of the traditional system, it is proposed that the *apprenticeship concept*, rather than the apprenticeship system, be expanded beyond its traditional boundaries. The apprenticeship method of experiential learning has proven effective at all skill levels and is particularly well-suited for technical training and retraining.

Apprenticeship is a model of industry, labor, government and education working together to further the interests of the worker and the workplace. At a time when there is much interest in leveraging cooperation between public and private sectors, it is appropriate to reexamine the apprenticeship model. Accordingly, apprenticeship clearly serves as an effective model with broad applicability.

Whether the expansion of apprenticeship and its concepts materializes will depend largely on actions taken to overcome the barriers to expansion. This report identifies these barriers and contains a series of recommendations for overcoming them. Taken together, these recommendations are designed to expand formal workplace training. This expansion should provide workers with greater opportunities for careers in skilled occupations as well as equip industry with the competitive edge that a highly skilled workforce provides.

Guiding Principles

Several broad principles set the foundation for expansion of work-based training programs. These principles should also guide further implementation and developmental efforts that result from these recommendations:

- Structured work-based training programs are a sound investment in human capital because this form of experiential learning is most effective for skills and knowledge acquisition.

- Government should provide policy guidance and provide leadership on issues concerning workforce skills development.

- Public-private partnerships are needed in order to expand structured work-based training programs.

- The primary objective of structured work-based training programs must be to provide quality instruction, both on the job and in the classroom.

Policy Recommendations

The many specific recommendations contained in this report have been categorized into eight broad policy recommendations. Within each of these eight recommendations is an outline of actions needed for implementation. Some of the actions require changes in existing regulations or procedures. These can be accomplished in the short run. Others represent major new initiatives for the Department. In these areas, further development, testing and evaluation are needed before implementing the proposal on a broad scale.

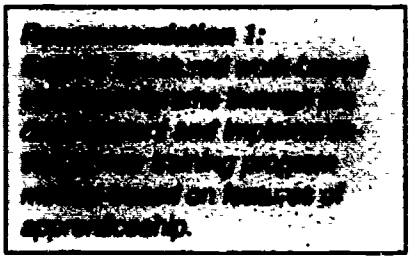
The policy recommendations are organized in the following three parts:

Part A: The New Model—Credentialing Structured Work-Based Training Programs

Part B: Strengthening the Basic Apprenticeship Model

Part C: Support and Expansion of Structured Work-Based Training Programs, Including Apprenticeship

Part A. The New Model



Background

The training and learning concept that apprenticeship represents is particularly well-suited to meet industry's needs. The legislative framework for the current apprenticeship system is very general and, thus, would accommodate significant modification to the existing system.

However, the American apprenticeship system, as formalized in Federal regulations, is geared to manual skill acquisition in which wage progression, safety, tools and close supervision are of paramount importance. For example, the first standard for apprenticeship program registration in the current regulations requires "the employment and training of the apprentice in a skilled trade." Accordingly, while the regulations now permit recognition of occupations involving technical skills and programs as short as 1 year, the focus of the current system remains within the manual skill areas, particularly in the traditional construction and manufacturing trades.

In addition, apprenticeship is a comprehensive long-term training program. As such, it provides workers with necessary skills from entry level through journey level.

Yet, many present and future demand occupations do not involve complex manual skills that require an extensive time period to master. In addition, much of the training that is required is not entry level, but upgrading or skill enhancement training to address technological or production changes in the workplace or to provide for career ladder opportunities for workers. This upgrading training tends to be modular and of short duration.

Given these considerations, the prudent course of action is to

take features from the current apprenticeship model that can be applied in a broader context and use them to develop new models. In this way, the terminology "apprenticeship" and "journey-level worker" can be reserved for the traditional longer-term programs.

Those aspects of apprenticeship that can be applied more broadly include:

- The basic format of structured on-the-job training combined with classroom or theoretical instruction;
- The formal recognition (i.e., accreditation) afforded programs and the awarding of worker credentials upon completion;
- Private sponsorship, tailored to the workplace, with limited support from government and education;
- The transfer of skills on the job through a mentor or skilled supervisor;
- The opportunity for the worker to acquire skills while earning a wage; and
- A contract or agreement between the training sponsor and the trainee on the process and outcomes of training.

These key features promote effective learning, flexibility of workers and portability of credentials. As such, they should form the core of a strategy to encourage more private investment in structured work-based training programs.

Added to this core should be features designed to meet the specialized needs of the workplace. For instance, there is a growing need for basic literacy training within the workplace. Thus, a training system that features modular components could meet this need and:

- Allow for skills development through competency-based learning;
- Provide specific recognition of skill attainment;

- Be applied in isolation or as part of a larger structured program; and

- Apply to basic workplace literacy issues as well as to advanced technologies needed to upgrade existing skills.

Actions

The Department's Employment and Training Administration should develop training program models that provide for formal recognition of specialized programs and certification of skill competencies. These models will be the vehicle for promoting structured work-based training programs that are modular, competency based and industry based. As such, industry will define the educational needs of its workforce. These models can be used for entry-level training in occupations in which the traditional apprenticeship model is not applicable, for upgrade training in all occupations, and as a career path for workers in lower-skilled jobs. They will not be called apprenticeship.

This proposal represents a substantial new undertaking in addressing workplace training needs. Therefore, the Department should begin by experimenting with varied approaches through a series of demonstration projects in partnership with industry. Already, certain industries have expressed considerable interest in forming a partnership with the Department in order to undertake, or upgrade, formal training within their industry.

These demonstration projects should include the following characteristics:

- The ground rules for selection of training programs should be minimal to allow for maximum experimentation. For instance, appropriate criteria might include programs of a minimum of 3 months' duration that provide recognizable skill competencies, with both on-the-job training and a theoretical component, with provision to track the participants' progress and minimum procedures designed to ensure that participants receive quality instruction.

- The industries selected to participate in the projects should

be largely outside the traditional construction and manufacturing trades. One exception might be to use this model as a method of recognizing formal upgrade training for journey-level workers. Organizations which might be interested in participating in the demonstration projects include those facing skill shortages, those in which public safety is an issue, those to whom a quality product is of particular concern and those concerned about the effectiveness of current training efforts.

- These projects should include some industry-wide, national training programs operated in cooperation with industry representatives. A national, industry-wide approach provides a broad scope and is a means of testing whether efforts targeted at the industry level result in the widespread implementation of training programs throughout the industry.

- The Department should provide limited funding, where needed, to help defray training costs associated with the projects. This might include some developmental, installation, oversight and evaluation costs.

These demonstration projects should operate between 18 and 24 months. Findings from these projects can be used to determine what forms of Departmental recognition and assistance are appropriate to encourage more formal work-based training programs. The Department can learn what features and criteria are important and apply the lessons to ground rules for recognition of other new programs. Once these ground rules are established, the Department can undertake a large-scale, targeted campaign to promote expansion of these new models to new industries and occupations.

Recommendation 2:
Establish a national work-based training body to recommend policy and provide direction for supporting and assisting in the delivery of work-based training programs.

Background

There is no publicly supported training structure whose current charge is broad enough to direct and oversee implementation of policies on the expansion of

structured work-based training. This structure must support a public-private sector partnership for a training system determined and operated by industry.

Although there are organizations that include broad public-private representation, their missions tend to be very targeted. For instance, the State Job Training Coordinating Councils and the Private Industry Councils, established under the Job Training Partnership Act (JTPA), include members from the business community. However, their current focus is primarily on providing training and employment opportunities for economically disadvantaged populations.

Recent proposals to designate the State Job Training Coordinating Councils as the State Human Resource Investment Council are intended to facilitate coordination of certain federally assisted human resource development programs. However, this focus on federally assisted and target populations may make these Councils unsuitable for a largely private industry effort which may not involve the target group. In addition, their geographic focus may also make them inappropriate to the objectives of promoting industry-wide training and enhancing the mobility of labor.

The administrative structure for the current apprenticeship system is focused on apprenticeship and is also not well suited in its present form to support a significant expansion of new programs. Also, there is no consistent Federal/State administrative structure, since State apprenticeship agencies operate in only about half the States.

Policy formulation and the administrative structure for this new system of work-based training programs must be broadly focused. The functions to be covered include:

- Developing policies on work-based training programs, including formulation of legislation and recommendations for government actions;

- Accrediting work-based training programs, including authority to further delegate to other organizations and agencies which meet minimum standards;

- Establishing and assessing, in conjunction with industry and labor, the quality standards for accrediting programs;

- Coordinating with other Federal departments, labor and industry groups about human resource development policies and practices;

- Developing linkages between industry and State and local education systems for workers;

- Developing ongoing pilot and demonstration programs to improve and disseminate technology for learning in work-based programs;

- Developing and installing field-level support structures for small and midsized firms to encourage the development of work-based training programs;

- Providing technical assistance in the development of programs and the dissemination of information on best practices, including model curricula; and

- Exploring continually the alternatives for enhancing work-based learning across the spectrum from school alternatives, through school-to-career transitions, to career upgrades for training of mature workers, unemployed skilled workers, re-entrants and new entrants.

The existence of such a support structure is not critical to the success of the demonstration projects. Nor is this an issue that must be resolved immediately. However, it needs to be addressed and options considered so that the Department can be in a position at the conclusion of the demonstration projects to promote broad adoption of these models. At the same time that the form of administrative support is open for debate, options for program delivery assistance should also be considered.

A strength of the current apprenticeship system lies in the joint apprenticeship committees which include both employer and employee representatives. Also, under collective bargaining agreements, small employers are able to unite to support training programs through contributions to a dedicated training trust fund. Applications of these joint

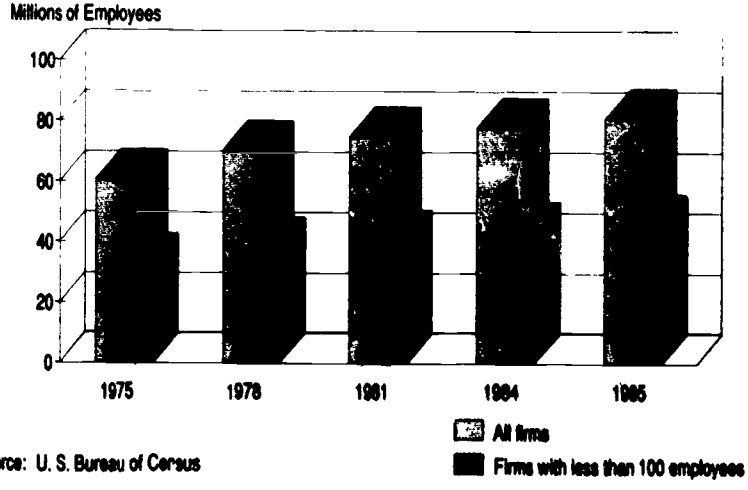
employee-employer arrangements to other industries and firms not covered by such collective bargaining agreements should be explored.

The new models provide an opportunity to try innovative approaches for program delivery and administration. These approaches can be tested in conjunction with the demonstration projects for the new models.

The issue of program administration will become even more significant because of the shift in the economy from manufacturing to the service industry and the substantial job growth projected to occur in small firms, primarily in the service industry. Available data indicate that service industry firms tend to be smaller in size than manufacturing. From these data, the Hudson Institute concludes that since employment growth will be largely in service industries, most new jobs will be created by small businesses. (See Figure 3.)

Thus, a major issue in expansion is how to address the needs of

Figure 3 Growth in Small Firm Employment *(Employees by Size of Firm)*



Source: U. S. Bureau of Census

the small firms that do not have the resources to sponsor training and are not subject to a collective bargaining agreement that provides for contributions to a training trust fund. As indicated, with the demonstration projects, the Department can test alternatives for assisting small firms in designing and sponsoring training programs. A variety of options should be considered, including greater involvement by associations and community colleges. Both prospects hold potential.

Many industry associations are already concerned with training for their member firms and have developed modular training programs. Other associations that represent small businesses may be interested in taking a more active role in the training arena, particularly if their member firms are experiencing skill shortages. In addition, it should be possible to build on the community colleges' already significant role in technical skills training. In apprenticeship, these colleges are a major source of related instruction. They also provide business with both specialized and general occupational skill training.

Actions

The Department should appoint an advisory board to oversee the demonstration projects and assist in evaluating their success. This board can advise on options for a permanent administrative structure and on the criteria which should be used in formalizing the training programs. The board should be comprised of representatives from industry, labor, government and education. It is recommended that the representatives include individuals who are knowledgeable about the demonstration projects.

At the same time, *further research is needed on a permanent structure to direct, oversee and support adoption of the new models.* The options to be considered might include:

- A national human resource advisory board comprised of business, labor and public representatives, chaired by the Secretary of Labor with participation by the Secretaries of Commerce and Education;

- A quasi-governmental body that sets training policies;

- A broadened mandate and restructuring of State Job Training Coordinating Councils and the Private Industry Councils; and

- A structure integrated with the current Federal/State apprenticeship administrative structure.

While there should be no limitations on the range of options to be considered, the structure ultimately embraced must have the capacity to accomplish multiple objectives and a range of activities. For each option explored, the budgetary and legislative impact must be considered as well as the impact on existing agencies, including the State apprenticeship agencies.

The Department should also include in its demonstration projects varying alternatives for developing, sponsoring, overseeing and evaluating training programs. The Department should work with a variety of organizations to develop differing approaches to designing and delivering training. These organizations should include national associations which might also be given authority, with limited Federal oversight, to recognize or accredit programs in local chapters, oversee installation and delivery and issue credentials to completing participants. Other organizations which might be sought to participate in these demonstrations include the community college network as represented by the American Association of Community and Junior Colleges, the Department of Education's Office of Adult and Vocational Education and one or two State or local agencies. Successful models can then be replicated on a widespread scale.

Part B. Strengthening the Basic Model

Recommendation 1:
Strengthen and coordinate Federal programs and policies affecting apprenticeship in order to encourage expansion of the basic apprenticeship model.

Background

While the development of new models is strongly recommended, this development should not come at the expense of the traditional apprenticeship system.

Apprenticeship remains a viable system of training which should be strengthened and preserved. The traditional apprenticeship model, in a revitalized and strengthened form, can be the centerpiece in an overall system of structured work-based training approaches.

Workforce projections indicate a continuing need for training in the traditional apprenticeship trades. According to 1987 BLS projections, construction industry employment will grow by 900,000 workers between 1986 and 2000. The publication, "Occupation Projections and Training Data," 1988 edition, shows the following growth for selected crafts. (See Table 1.)

Table 1 Projected Craft Growth, 1986-2000

	Employment (thousands)		Percent	
	1986	2000	Growth	Separation Per Year
Bricklayers/ Masons	161	187	16.3	15.1
Carpenters	1,010	1,192	18.1	20.4
Electricians	556	644	15.9	11.9
Painters	412	502	21.9	25.9
Plasterers	28	31	11.9	N/A
Plumbers/Pipefitters	402	471	17.2	15.4
Roofers	142	181	27.6	20.2
Ironworkers	86	104	20.2	19.3

Source: BLS

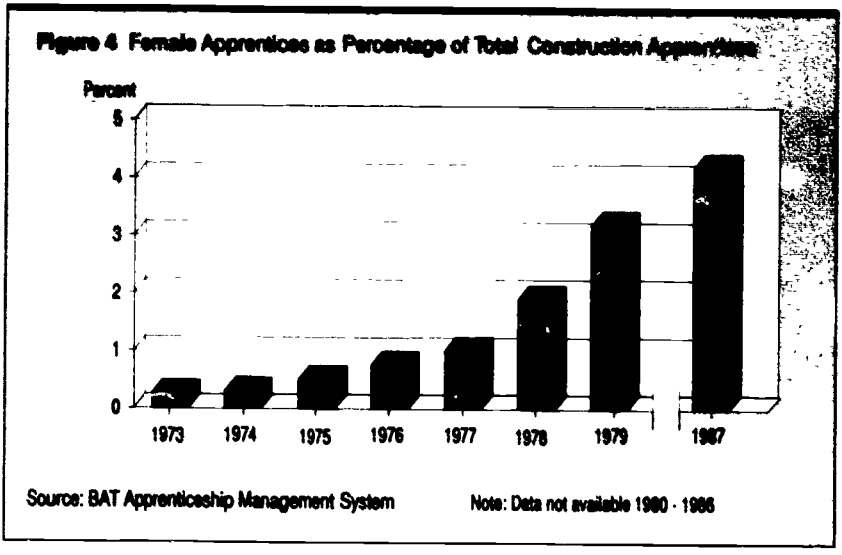
To illustrate the magnitude of the training needs, the rate of increase in employment levels combined with the current separation rates yields a demand for 215,000 new carpenters, 26,000 new bricklayers and 72,000 new electricians each year. Already, many areas of the country report shortages of construction workers. These shortages will become greater and more widespread unless industry increases its commitment to training.

The increasing demand for workers in the traditional apprenticeship trades makes it imperative that avenues to learning skilled trades be open. Moreover, the inherent risks associated with construction industry employment make it particularly important that workers learn their craft through a systematic training program that specifically addresses health and safety practices on the job. This means that, to the extent possible, regulatory burdens and obstacles should be removed and efforts among Federal agencies coordinated to eliminate impediments to training and duplication of effort.

A number of areas for improvement were identified from the apprenticeship review. Change in the following areas can be accomplished through administrative or regulatory action.

Equal Employment Opportunity and Affirmative Action. Under current apprenticeship regulations, Federal and State staff (in some States) have responsibility for assisting sponsors in developing affirmative action plans (if they have more than five apprentices) and in enforcing compliance with equal employment opportunity standards. This enforcement role may be inconsistent with the apprenticeship staff's primary role of encouraging and assisting sponsors with their apprenticeship programs.

The growing employment levels—combined with demographic changes within the available workforce—present new opportunities for greater participation by underrepresented groups in the construction trades. This is particularly significant for women, traditionally the most underrepresented group in construction trade employment. Progress, for them, has been slow. (See Figure 4.)



In 1978, Federal regulations on equal opportunity in apprenticeship were amended to include participation goals for women in apprenticeship. Since then, female participation has increased, but today women still constitute less than 5 percent of apprentices employed in the construction industry.

Time-Based Versus Competency-Based Progression. A strict reading of the apprenticeship regulations precludes all but a time-based progression in apprenticeship programs. This means that, in order to complete an apprenticeship program, an individual must serve a fixed period of time even though the individual may have completed all the course work and acquired the necessary skills in less time than specified.

The interpretation of the regulations as limiting programs to only time-based programs may restrict opportunities for new apprentices and may contribute to a high dropout rate. While time-based programs are more typical today, in some cases, such as the International Union of Carpenters and Joiners' Performance Evaluated Training

program, the registration standard is set aside and competency based, accelerated advancement is permitted within an apprenticeship program. The Department can ensure that regulations and policy are flexible enough to permit programs to be tailored to industry needs, whether progression is largely competency based, time based or a combination of the two.

Reciprocity. Another restriction that should be closely examined is the provision governing multi-State apprenticeship registration. In the past, most construction industry apprenticeship programs addressed needs only in local labor markets. Mobility of both apprentices and employers outside a geographic area was the exception to the norm. Increasingly, contractors now work on a multi-State basis.

The current apprenticeship regulations severely limit reciprocity (i.e., acceptance of a program registered in State A by State B) of program registration between States. Reciprocity is required only for nonconstruction programs, sponsored jointly by labor and management. This provision is contrary to the way the Employment Standards Administration (ESA) administers the registration requirements of Davis-Bacon and related Acts. ESA accepts the registration status at the contractor's home base for any location.

Extending the reciprocity provisions and increasing portability may be expected to increase the mobility of apprentices and their opportunity for greater continuity of employment and training in those situations in which this extension of reciprocity is applicable. However, any modification must be framed to ensure that, if a contractor is able to register a program across State lines, the reciprocity does not result in an unfair competitive advantage and all legal requirements are met.

Ratios. Provisions affecting numeric ratios should be examined to ensure that they do not unnecessarily restrict access to training for apprentices. Ratios set the number of apprentices which may be hired in relation to the number of journey-level workers. The setting of numeric ratios is a controversial area. Proponents of numeric

ratios argue that they guarantee proper training and safety of the workers through close supervision. Opponents view ratios as inhibitors to entry-level training. They argue that on-the-job site ratios are meaningless because the nature of work to be performed determines the level of supervision and training needed.

It is clear that a single numeric ratio is inappropriate for all job situations and that a number of factors determine the level of supervision an apprentice needs to ensure safety and proper instruction. A recently completed study of ratios by Jim Mitchell, an apprenticeship expert, suggests that numeric ratios, even when stipulated in collective bargaining agreements, have little relevance to actual practice. The registration agencies should be relieved of their current role in establishing numeric ratios and should seek other ways to protect apprentices' welfare and ensure that quality training occurs.

Related Training. Current provisions recommend that apprenticeship programs include a minimum of 144 hours of outside related training per year as a condition of program approval. Data suggest that this recommendation has become a standard. This provision should be reviewed to determine whether the recommendation has instead become a rigid time requirement which limits program flexibility to increase or decrease the hours of instruction as appropriate to the training.

Trainee Programs. Current provisions relating to the administration of the Davis-Bacon Act recognize trainee programs registered by the Department, for purposes of federally funded construction. These provisions were intended to facilitate entry of women and minorities into apprenticeship programs in the construction trades. However, there is some evidence to suggest that these programs are not now functioning as entry-level feeder programs for apprenticeship. Consideration should be given to phasing out the trainee programs and establishing valid preapprenticeship programs under the new models.

In addition, many in the apprenticeship community object to the way the Department's Bureau of Apprenticeship and Training

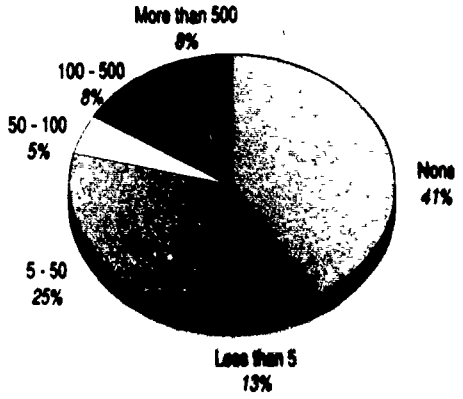
(BAT) presents its data on apprenticeable occupations and programs. The data showing over 800 recognized and published apprenticeable occupations and 44,000 program sponsors are misleading because a large number of occupations and programs have no apprentices. Recent data indicate that approximately 40 percent of the occupations and programs are inactive. (See Figure 5.)

The concern raised by unions is that by including these occupations, the significance of the "true" apprenticeship occupations is reduced because there is no commitment to training in programs without apprentices. This situation can be corrected relatively easily and will enhance the current system by more accurately presenting it.

Actions

With respect to equal employment opportunity, *the Department should consolidate and clarify enforcement roles among BAT, the Office of Federal Contract Compliance Programs in the Employment Standards Administration and the Equal Employment Opportunity Commission.* A small interagency

Figure 5 Percentage of Apprenticeable Occupations by Number of Registered Apprentices



Source: BAT Apprenticeship Management System

task force could be formed for this purpose. Among the specific steps which might be considered would be to:

- Revamp and rejuvenate BAT's mission and role by emphasizing leadership, promotion, information and technical assistance

- Seek substitutes for the formal written affirmative action plans as a means of furthering affirmative action goals. Possible alternatives include a simplified declaration by the sponsor and a brief description of planned actions BAT should increase collaboration and explore with other organizations and outreach groups better ways to actively recruit women and minority candidates

- Consider the advantages and disadvantages of a single point of contact for all equal employment opportunity activities

The labor standards for apprenticeship programs should be revised, where needed, to clarify, update and remove obstacles to training. BAT should remove from its active list of apprenticeable occupations those which, for the last 3 years, have had no registered apprentices, and from the list of programs, those which have had no registered apprentices for the same time period. It should also begin to identify already approved occupations and programs (outside of construction) which are more suited to the new models than to the traditional program, recognizing that many of these programs cannot be deleted from the apprenticeship rolls until Federal/State jurisdictional issues are resolved.

At the staff level, the Department should explore ways to better coordinate efforts with other Federal departments whose responsibilities affect apprenticeship programs. The Department should begin with the Departments of Transportation and Education. The Department of Transportation allocates to the States billions of dollars in highway trust funds. These allocations include dollar set-asides and wage subsidies for trainee slots. Efforts should be made to coordinate these trainee programs with apprenticeship to provide maximum training opportunities for workers.

The Secretaries of Education and Labor already have an agreement to coordinate vocational education and apprenticeship activities. Ways should be found to strengthen this working agreement so that activities are better coordinated at the national, State and local levels. Increased coordination is particularly important with the upcoming reauthorization of the Carl Perkins Act. This Act authorizes funding for related instruction for apprenticeship at the State and local levels. Possible actions might include jointly sponsored conferences, demonstration projects and work groups to provide policy direction on issues affecting vocational education and apprenticeship.

At the appropriate time, the Department might reinitiate discussions with the Department of Defense for the purpose of encouraging Defense prime contractors to make use of apprenticeship (or other models). The Department might also explore further with the Office of Personnel Management the possibility of jointly sponsoring apprenticeship demonstration projects in selected civil service occupations that are now considered apprenticeable.

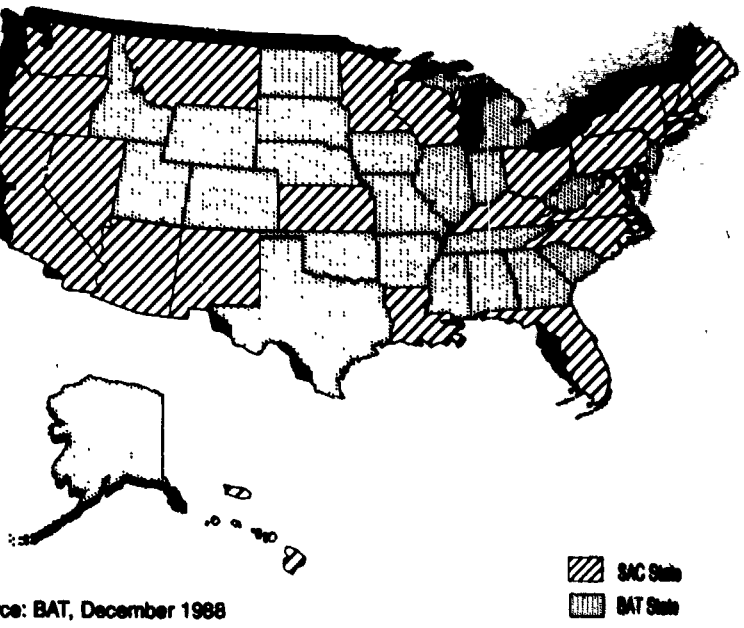
Recommendation 4:
Improve administration of the existing system so that it operates effectively and fairly.

Background

Administration of the national apprenticeship system is a combination of Federal, joint Federal-State and predominately State administration. In 23 States, BAT directly administers apprenticeship. In the 27 States in which the direct administration of apprenticeship is delegated to a State Apprenticeship Agency or Council (SAC), the role of BAT varies widely. (See Figure 6.)

The most common BAT/SAC administrative arrangement, existing in over two-thirds of the SAC States, is one in which BAT staff share responsibility with State agency staff. However, in several States, the SAC discharges only the program registration function, and BAT staff perform all other functions. Some maintain that this adds a cumbersome layer of bureaucracy with no real benefit to the program sponsors or to the apprentices.

Figure 6 Distribution of BAT/SAC States



Source: BAT, December 1988

Under Federal regulations, a State may apply to the Secretary of Labor to be recognized to carry out certain apprenticeship functions. In order to be officially recognized, the State agrees to comply with the Federal rules on apprenticeship. Federal regulations provide the framework for program approval and oversight. These are supplemented by policy issuances and directives from the BAT. SACs also have their own rules and procedures for State purposes.

The States receive no direct Federal funding for administration or for program registration. Federal rules include procedures for derecognition of a SAC that fails to comply with regulations. However, no SAC has ever been involuntarily derecognized, largely because this sanction has been viewed as too extreme,

considering the voluntary nature of State participation.

Despite the regulatory specifications, there is considerable subjectivity in determining the conditions for program registration and in the monitoring of programs. Further, there are no requirements that a potential apprenticeship program sponsor be advised of the outcome of the request for registration. Therefore, a potential sponsor may be denied registration without ever knowing why. In addition, if an applicant's request for program recognition is denied, there are no provisions for administrative redress. This lack of consistent application of rules combined with the lack of recourse has resulted in many complaints about fairness and equity in apprenticeship operation in both BAT and SAC States.

Actions

Federal regulations and procedures should be reviewed and revised to provide for consistent and equitable treatment. Specific actions that are needed include:

- Instituting procedures for written notification, within established time frames, of the decision on applications for program registration. If denied, the written notification should contain the specific reason for the denial.

- Providing an administrative appeal in both BAT and SAC States for potential program sponsors who are denied registration. The appeal authority should be independent of the original decisionmaking authority.

- Updating and consolidating all policy issuances into a single program operations manual that can be used by both Federal and State staff. Include SAC representation on a work group to undertake this project.

The current Federal / State structure should be preserved and strengthened. States which elect to take on apprenticeship activities should be required to make a minimum commitment and to adhere to Federal rules when registering programs for Federal purposes.

Federal rules should be modified to:

- Provide that the Secretary's recognition will be to a State agency or department, thus ensuring that the State apprenticeship council comes under the jurisdiction of a State agency.

- Require a minimum level of staff support as a condition for recognition.

- Institute interim sanctions for States that do not comply with Federal rules and fail to take corrective action within a reasonable time period

- Subject State agencies to periodic recertification, conditioned upon continued compliance with Federal rules.

Part C. Support and Expansion

Recommendation 5:
Enhance the recognition value of program sponsorship and certification of skill attainment by instituting program criteria designed to ensure quality.

Background

A recurring theme throughout this review has been a concern for quality in apprenticeship programs (and training programs in general). This universal concern about quality is not surprising in light of the increasing focus on the skill levels of the American workforce. In the training arena, quality is important not only because it enhances the product, i.e., the skill level of the worker, but also because it can foster recognition of the product. In today's highly mobile workforce, it is increasingly important that workers have credentials that can transfer with them as they move within the labor market or even within their own organizations.

There are many ways to recognize quality. A recognition of quality analogous to apprenticeship program registration is the accreditation process applicable to educational institutions and programs. Accreditation is, in its simplest terms, insurance of a basic level of quality. Receiving accreditation is essential to schools. Accreditation by a widely respected association affords stature that is important in attracting a quality student body. It also allows programs to seek and receive aid—both Federal and State.

Within the United States, accreditation of schools and universities is largely a private function carried on by independent, regional accrediting associations and agencies. However, under Federal law, the U.S. Secretary of Education publishes a list of nationally recognized accrediting authorities which meet federally published criteria and procedures for recognition.

Within the current apprenticeship system, the Department and, in 27 States, the SACs currently register apprenticeship programs if they meet criteria spelled out in Federal regulations. Thus, to a great extent,

the Federal and State agencies have assumed the role of an independent accrediting agent similar to the associations and agencies that accredit schools and programs.

However, the accreditation process could be strengthened to ensure that the registration criteria adequately address quality. Currently, the quality of training is just one aspect of the registration criteria. The criteria also address work safety, wage schedules and other factors affecting the welfare of the worker. Thus, of the 22 criteria (or labor standards of apprenticeship, as they are formally called), only several relate directly to quality. Many questions have been raised as to whether these quality criteria actually serve their purpose.

Apprenticeship program sponsors now receive a Department registration certificate if they are in a State with only BAT representation. If they are in one of the 27 SAC States, State practice determines which certificate, if any, the sponsor receives.

There is some evidence that formal recognition and recognition of apprenticeship completion have considerable value. As an example, one association with a national apprenticeship program features the Department's approval prominently in advertisements for apprenticeship programs. For this association, the Department's seal of approval is a selling point in persuading member firms to adopt apprenticeship programs.

For apprenticeship program sponsors outside the construction industry, formal recognition is one of the few tangible benefits of registering an apprenticeship program. This kind of recognition, if it is an assurance of quality, may be of even greater value to employers as they face a dwindling pool of workers and increasing competition in marketing products.

Actions

The Department should launch a cooperative government/industry/education effort to identify program standards and processes that contribute to quality in recognized training programs. This effort should result in the establishment of a formal accreditation process.

Within this accreditation process, there should be procedures for:

- Identifying parties eligible to apply for accreditation;

- Streamlining approval for small employers;

- Recognizing organizations that already provide an accreditation function for their members; and

- Recognizing course work received from an accredited secondary or postsecondary school.

As part of this process, consideration should be given to establishing levels of accreditation for programs which operate above minimum standards. This would allow for broad recognition of programs, encourage quality enhancement within existing programs and provide integrity to the accreditation process.

Consideration should also be given to instituting a conditional registration process. New programs would be approved for a 1- to 3-year period during which time they would be subject to close review. At the conclusion of this period, the program might be fully approved, rejected or subjected to a corrective action plan.

Criteria for determination of the quality of programs should be clearly spelled out so that all participants, sponsors and apprentices/trainees understand how their programs will be judged. For any program judged not up to the standards, a plan of action to rectify the problems should be established. After an appropriate period for resolution, the program should be either judged as meeting the standards or deregistered.

There is, within the Department, an advisory body comprised of employer, labor and public representatives. This advisory body, the Federal Committee on Apprenticeship (FCA), was recently rechartered by the Secretary of Labor. Under the auspices of the FCA, additional research should be conducted on accreditation standards and processes for apprenticeship. Part of this process might include public hearings. With advice from the FCA, formal quality standards for

apprenticeship will be developed. Lessons learned from this process can be used in developing quality standards for other work-based training programs.

Changes proposed for the current apprenticeship system will require regulatory change. For the new models, it is likely that specific legislative authority will be needed to establish a Departmental role in accrediting structured work-based training outside apprenticeship. *The Department should begin to explore options for new legislation and regulatory change.*

Action should also be taken to enhance the recognition value of program sponsorship by providing program certificates to all sponsors and by experimenting with various ways of recognizing specific skill competencies.

Consistent certification should be implemented for all structured work-based programs, including the current apprenticeship program. It should be an aspect of the demonstration programs testing the new models for structured work-based training programs.

Within the current apprenticeship program, development of approaches for recognizing achievement can come under the auspices of the FCA. Given the voluntary nature of apprenticeship programs, care must be exercised to balance the desire to avoid increasing recordkeeping and reporting burdens with the need to maintain adequate data.

For the new models, the Department has the opportunity to experiment with many alternatives for specific skill recognition. The options can be explored and developed in conjunction with the industries which elect to participate in the demonstration projects. Findings from these projects can then be used for broader application.

Recommendation 6:
Develop work-based learning alternatives for noncollege-bound youth to assist them in effectively making the transition from school to a meaningful career path.

Background

A nation's youth constitute its greatest resource. The future depends upon how well this resource is nurtured and

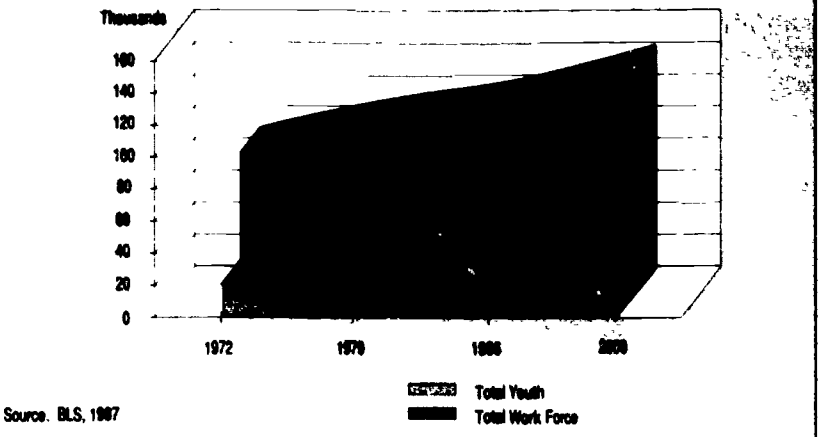
developed. Public policies have long supported this principle, with many of this country's social programs and institutions directed towards youth. Nonetheless, these approaches either do not reach enough youth or fall short of adequately preparing youth for the workforce. As a consequence, a significant share of the noncollege youth population faces a difficult transition to the world of work.

Many young people who do not go on to a 4-year college find low-paying, low-skilled employment with little opportunity for advancement. Others enroll in a community college or vocational school to obtain more training or enter the military. Few high school graduates, and certainly fewer high school dropouts, are considered by the employer community to be ready for work. Thus, after leaving school, many youth spend the first several years exploring the labor market.

In the past, this youth "career gap" was more a social problem than an economic one. Employers had an adequate supply of mature youth to draw from. Times are changing. As the baby boom moves upward into the older ranks of workers, fewer mature young workers will be available. As reported in the Hudson Institute's "Workforce 2000" study, between 1980 and 1996 the population of youth aged 15-24 is expected to fall 21 percent, from approximately 43 million to 34 million. These changes will force employers to look to younger workers for potential applicants. No longer will employers be able to ignore the high school dropouts as new workers. (See Figure 7.)

The W.T. Grant Commission report, "The Forgotten Half, Pathways to Success for America's Youth and Young Families," is about noncollege-bound youth—both disadvantaged and nondisadvantaged. The report contains recommendations on how to assist the noncollege-bound youth in making the transition to a good job with career opportunities. Among the Commission's findings is the need for better bridges between school and work. The report states, "On-the-job training, broadly defined, provides the most direct route to useful employment that our economic system can offer to those who are not headed for full-time postsecondary education." The

Figure 7 Youth in the Civilian Labor Force Compared to Total Labor Force



Source. BLS, 1987

report goes on to recommend "that each State government, together with its principal employers and business associations, explore the possibilities of expanded apprenticeship programs."

In West Germany, a national system of apprenticeship serves the majority of school leavers. This national system is a collaboration between industry, government and education, with each bearing a share of the responsibility and costs for human resource development. Under this system, 16-year-olds not bound for universities enter an apprenticeship in one of over 400 different occupations. The apprenticeships provide on-the-job training combined with 1 or 2 days a week of study at a vocational school. The German firms bear the full cost of wages and on-the-job training. The apprenticeship system serves dual objectives—the country is assured a high-quality workforce and its youth are assured of the opportunity to master an honorable trade and earn a decent wage.

School-to-apprenticeship programs also exist in this country. There are currently about 400 school-to-apprenticeship programs involving approximately 1,500 high school students. These programs were

initiated largely in the late 1970s in eight sites on a pilot basis. These apprenticeship-school linkage programs allow high school seniors to become registered apprentices while completing their secondary school education. The projects have produced positive outcomes for the students, the schools and the employers. Many jurisdictions have been encouraged and assisted in establishing school-to-apprenticeship programs.

Linking apprenticeship with programs that serve disadvantaged youth is also not a new idea. Many Job Corps centers operate preapprenticeship programs, mostly in the building and construction trades. These programs provide a path from basic skills learning to the more advanced skills training and career opportunity that apprenticeship offers.

Under the Comprehensive Employment and Training Act (CETA), a number of apprenticeship/local CETA projects assisted disadvantaged youth and other target populations in entering apprenticeship. CETA funds were used for a variety of activities linked to apprenticeship, including on-the-job training, classroom instruction and transportation allowances. These linkage projects have not been replicated on any widespread basis under the Job Training Partnership Act (JTPA). However, proposed changes to JTPA are designed to encourage both longer-term training and linkages with other education and training systems, including apprenticeship.

Many local business leaders have seen the need for the business community to play a stronger role in educating youth. In several cities, business and education have formed partnerships with the goal of bringing about measurable improvement in student performance and in reducing the rate of high school dropouts. One of the best known examples of such a collaborative arrangement is the Boston Compact. One component of the Compact is the Jobs Collaborative Program. Its objective is to provide a sequence of job opportunities—summer, part-time, full-time—for all students not going on to college full time. These kinds of business/education partnerships are the seeds for school-to-work collaborative efforts nationwide.

Actions

The Department should provide leadership, policy direction and support for programs that provide for the transition of youth from school to work and which focus on discouraged or disheartened youth and provide alternatives for learning out of school and in the workplace. Through business/education partnerships, "school-weary" youth at risk of dropping out of school and graduates who are not going on to college would be enrolled in work-based learning environments, with clear and direct routes to successful career paths.

The programs would provide wages, incentives and work ethics and would facilitate completion of the high school degree in addition to providing upgrade training beyond the entry level. Classroom education, related to the practical learning on the job, would not be ignored. Alternative high schools and community and junior colleges would provide trainees with the theoretical instruction essential to the occupation and with the education necessary to obtain high school and other educational credentials.

Programs should target occupations and industries that provide a career path, with measurable skill levels and certificates of completion or skill attainment. The initial programs should be coordinated through an advisory committee appointed to oversee the demonstration projects.

The Department should also expand the successful school-to-apprenticeship program model. The Department should work with the Department of Education and associations of local school boards and officials to develop strategies for encouraging more local school systems to include these programs as part of their curricula. Possible approaches include the development of promotional materials, technical assistance guides and limited funding for innovative local demonstration projects which might include program coordinator positions.

Ways should also be explored to broaden the existing Job Corps preapprenticeship programs to include more industries and occupations outside the traditional construction trades. The feasibility of demonstration projects involving BAT, the Job Corps and industry representatives will be investigated.

Targeted industries might include those with a variety of skill occupations and a shortage of qualified workers, such as the health care industry.

Recommendation 7:
Provide additional incentives to encourage employers to increase the training of workers and to adopt structured work-based training programs.

Background

Costs of training can be prohibitive to many employers, especially to the small employer. Traditionally, employers have preferred to "pirate" workers rather than to invest in training entry-level workers. In fact, fear of pirating is often cited as a reason that employers do not invest more in training. Unless an employer can feel assured of an adequate return on training investments, the employer is reluctant to fund the cost of training a worker only to see that worker lured away by a better offer.

As labor markets tighten, employers will no longer have the luxury of choosing between "pirating" and training workers. The reality of labor shortages will eventually confront many employers with the need for investing in human capital. However, it is in the national interest to promote more widespread use of effective methods of training as a way of avoiding the economic consequences of massive labor shortages and low productivity.

Currently, there are few direct incentives to train. Within apprenticeship, the Davis-Bacon Act wage provisions, for federally financed projects, have traditionally been a strong incentive to train within the construction industry. Other incentives to apprenticeship include the technical assistance available to program sponsors and State and local financial assistance in funding the related instruction. The level of technical assistance available to program sponsors and the State provisions governing financial aid for related instruction vary greatly from State to State.

Incentives to train may be considered appropriate within the context of Federal policies supporting increased levels of investment in human capital. In past years, the Nation has created

similar policies using the Federal tax laws to encourage greater investment in research and development, plant modernization and new equipment.

The need to control budget deficits, as well as the desire to limit government's role to the most appropriate functions for an industry-based program, must frame any discussion on the nature and extent of incentives to be offered. Not all incentives are financial, and not all incentives need to be costly or permanent.

Actions

The area of providing incentives for training is relatively uncharted. Little is known about the impact of the various kinds of incentives that might be offered. Accordingly, the Department should experiment with various options for providing limited financial and nonfinancial incentives as means of encouraging employers to invest in structured work-based training programs. Among the financial options to consider are:

- Issuing vouchers and making other funding arrangements to pay for job-related instruction;

- Using minimal Federal dollars for program development and other training innovations as a means of encouraging expansion;

- Providing limited wage supplements to compensate for paid work hours spent in related instruction;

- Funding adult basic education and applied skills learning centers which are directed by the business community but might be operated by local community colleges or technical schools; and

- Funding program coordinator positions within local community colleges to assist businesses in organizing and delivering training, including trainee recordkeeping and skill certification.

In addition, providing technical assistance to organizations and employers who wish to establish structured work-based training programs can be an effective

incentive. *Steps should be taken to ensure that potential program sponsors receive any needed technical assistance to establish training programs.* This may require additional staff resources and the establishment of a technical resource center, as well as other appropriate actions.

Ultimately, there may need to be a varying pattern of incentives established to address the many issues related to industry training. The type of incentives offered may need to be tailored to the specific employer's needs. However, before any specific proposal is formulated, considerable research and evaluation should be undertaken. The Department must have a good understanding of how various incentives affect market behavior before it makes any recommendations for the long term.

Recommendation 8:
Intensify publicity at national, State and local levels.

Background

The promotion of apprenticeship programs traditionally has been a function of BAT and is also carried on by the SACs. It is one of the activities that the Secretary of Labor is specifically directed to perform under the National Apprenticeship Act of 1937. Promotional efforts which have been carried on at the national, State and local levels have included direct personal contacts, written materials and, to a lesser extent, radio and television public service announcements. In recent years, Federal promotional efforts have been limited.

One of the five issues that framed the public discussion during the first stage of the apprenticeship review addressed the role of government. The list of conceivable opinions on the appropriate government role was extensive. However, the most frequently mentioned roles for government were promotion activities and providing technical assistance—accounting for over a third of all opinions formally expressed.

It seems evident that some types of promotional efforts will be needed to successfully implement the new models for structured work-based training. Private industry cannot be expected to embrace a system of training it does not know exists.

Targeted promotional efforts are also needed to encourage expansion within the traditional system. Apprenticeship has been called America's "best kept secret." To the extent that there is a public awareness of apprenticeship, the perception is of a tradition-bound program centered in the union-organized construction trades. It is this perception which has been a limiting factor in earlier efforts at expansion of apprenticeship outside the traditional occupations and which needs to be overcome if the apprenticeship system is to expand to its full potential

The Department has a national leadership role in workplace training issues. The Department's policy initiative on Workforce 2000 issues and on building a skilled workforce have already heightened awareness of the need for more worker training. Promoting the new work-based training models and apprenticeship is a logical extension of these efforts. These models, if successfully marketed, can become the Department's major vehicle for continuing to address America's needs for enhancing worker skill levels.

Actions

The Department should fully utilize its national leadership role to further the adoption of structured work-based training programs. A targeted, multilevel, multimedia effort is recommended. The overall campaign should include the following strategies:

- At the national level, the Department should identify industries and occupations for which marketing efforts are most likely to be successful because of skill shortages or concern for product safety or quality. Special efforts should be made to seek industry involvement in structured work-based training programs.

- Local labor market conditions must be considered in installing training programs at the local level. Accordingly, such local conditions should be utilized to develop State and local promotional campaigns. A test campaign should be developed in conjunction with an appropriate State or local agency that is interested in broader workplace training

- Department policymakers should utilize appropriate opportunities before influential audiences to reach out to policymakers for State government, industry, education and labor to promote adoption of structured work-based training programs.

- A series of promotional materials should be developed to publicize the availability of structured work-based training programs, including apprenticeship. Marketing approaches should also be developed jointly with selected associations and other industry representatives.

Summary

Organizations, researchers and commissions across the country have recommended new national leadership on improving workforce quality. Since these issues concern American workers, the responsibility for initiating action logically falls to the Department of Labor. This report is intended to fill the perceived leadership void by proposing a series of steps which, if implemented successfully, will stimulate more and better investment in human capital.

The recommendations contained in this report range from some very specific, short-term procedural changes to far-reaching program and structural changes. Some recommendations can be implemented immediately. Others will require more research, development and public discussion. Ultimately, regulations will need to be changed. Legislative change also may be needed to fully carry out this plan. Further, because some of these recommendations have resource implications, time frames may be driven by budgetary considerations.

The Department will work to make America more competitive by helping its workforce work better. To achieve this goal, however, will require a concerted effort on the part of government, industry and education. This report presents views on how the Department might approach the existing, broader workplace training issues while at the same time providing new opportunities for target populations.

Bibliography

For the reader's ease in identifying documents, the title of the publication or article appears in italics and is the first item in each citation in this bibliography.

Apprenticeship 2000 Short-term Research Projects, funded by Bureau of Apprenticeship and Training, U.S. Department of Labor, 1988. This series of research projects is listed below by topic area and author:

1. Issues relating to expansion of apprenticeship to new industries and occupations:

   a Dr. Robert Glover, Consulting Labor Economist;
   b. Stan Markuson, Consultant; and
   c. Fedrau and Associates.

2. Alternative types of apprenticeship:

   Fedrau and Associates.

3. Review issues and barriers relating to women in apprenticeship:

   The Enhancement Group, Inc.

4. Financial and nonfinancial incentives for apprenticeship programs:

   Dr. Robert J Gitter, Ohio Wesleyan University.

5. Vocational education, counseling and information processes:

   a. Fedrau and Associates;
   b. Meridian Corporation;
   c. National Child Labor Committee; and
   d. National Center for Research in Vocational Education.

6. Issues relating to EEO apprenticeship regulations:

   The Enhancement Group, Inc.

7. State roles and responsibilities in apprenticeship:

Meridian Corporation.

8. Ratio of journey level workers to apprentices:

James P. Mitchell, Consultant.

9. Assessing workplaces as learning environments:

Stephen F. Hamilton, Associate Professor, Cornell University.

America's Competitive Challenge The Need for a National Response, A Report to the President of the United States, Business-Higher Education Forum, April 1983

Apprenticeship Lessons From Abroad, Robert W. Glover, National Center for Research in Vocational Education, Ohio State University, 1986.

Apprenticeship 2000, The Public Speaks, U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, August 1988.

Apprenticeship 2000, Summary Report of Focus Papers, U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, August 1989.

Human Capital, The Decline of America's Work Force, Business Week, September 19, 1988.

Job-Based Education: A Mainstream Reform With a Hidden Agenda, Robert I. Lerman and Hillard Pouncy, Brandeis University, October 1988.

Job-Related Learning: Private Strategies and Public Policies, Anthony P. Carnevale and Janet Johnson, American Society for Training and Development, July 1989

The Forgotten Half: Non-College Youth in America, An Interim Report on the School-to-Work Transition, William T. Grant Foundation Commission on Work, Family and Citizenship, January 1988.

The Forgotten Half: Pathways to Success for America's Youth and Young Families, Final Report, Youth and America's Future, William T. Grant Foundation Commission on Work, Family and Citizenship, November 1988.

Job-Related Learning, Private and Public Strategies, Anthony Carnevale and Janet Johnson, American Society for Training and Development, Draft #5, January 27, 1989.

Human Resource Practices for Implementing Advanced Manufacturing Technology, Committee on the Effective Implementation of Advanced Manufacturing Technology, Manufacturing Studies Board, Commission on Engineering and Technical System, National Academy Press, 1986.

Labor Market Shortages, Report of the Secretary of Labor, January 1989

The Learning Enterprise, Adult Learning, Human Capital and Economic Development, Lewis J. Perelmen, Council of State Planning Agencies, 1984

The Learning Enterprise, Anthony P. Carnevale and Leila Gainer, American Society for Training and Development, 1989

Learning in School and Out, The 1987 Presidential Address, Lauren B. Resnick, Learning Research and Development Center, University of Pittsburgh, April 1987.

Made In America, Regaining the Productive Edge, MIT Commission on Industrial Productivity, Michael L. Dertouzos and Robert M. Solow, Massachusetts Institute of Technology, 1989.

Nationally Recognized Accrediting Agencies and Associations, Criteria and Procedures for Listing by the U.S. Secretary of Education and Current List, Department of Education, Office of Postsecondary Education, Higher Education Management Services, January 1988.

Occupational Projections and Training Data, 1988 Edition, U.S. Department of Labor, Bureau of Labor Statistics, April 1988.

Opportunity 2000, Creative Affirmative Action Strategies for a Changing Workforce, U.S. Department of Labor, Employment Standards Administration, prepared by Hudson Institute, Indianapolis, Indiana, September 1988.

Private Sector Training, Who Gets It and What Are Its Effects? Lee A. Lillard and Hong W. Tan, prepared for U.S. Department of Labor, Rand Corporation, March 1986.

Recommendations on Credentialing Educational Accomplishment, Task Force on Educational Credit and Credentials, American Council on Education, Washington, D.C., 1978.

Shaping Tomorrow's Workforce, A Leadership Agenda for the 90's, National Alliance of Business, Washington, D.C., 1988.

State-Financed, Workplace-Based Retraining Programs, A Joint Study of the National Commission for Employment Policy and the National Governors' Association, Peter A. Creticos and Robert Sheets, January 1989.

Training and Entry Into Union Construction, Manpower R&D Monograph 39, U.S. Department of Labor, Manpower Administration, 1975.

Training Policies: Public and Private Reinforcement for the American Economy, Final Report, The Impact of Public Policy on Education and Training in the Private Sector, Martin Meyerson and Robert Zemsky, University of Pennsylvania, 1985.

West Germany's Dual System, Peter Schankel, Vocational Education Journal, April 1988.

Who Will Do the Work? A Business Guide for Preparing Tomorrow's Workforce, National Alliance of Business, Draft, May 1989.

Workforce 2000, Work and Workers for the 21st Century, William B. Johnston and Arnold E. Packer, Hudson Institute, Indianapolis, Indiana, 1987.

Youth Unemployment and the Transition From School to Work: Programs in Boston, Frankfurt, and London, William J. Spring, New England Economic Review, March/April 1987.